Our Journey Continues

Blueprint for Sustainability 2012/13

At Ford, we continue to Go Further on our sustainability journey. This report describes our progress in six categories of material issues.

Value Chain

We assess sustainability issues across our value chain and work to improve our impacts.

Our Regions

Read about key regional sustainability initiatives.

Our Strategy

Our sustainability strategy helps us deliver Great Products, a Strong Business and a Better World.

Electrifying Choices

We are offering a range of electrified vehicles to reduce CO_2 emissions, deliver leading fuel economy and meet diverse customers' transportation needs.

"As we expand and realign globally and introduce new products, we are contributing solutions to economic development, energy security and environmental sustainability."

Alan Mulally, President and CEO

Read Alan Mulally's letter

Public Policy

We are transparent about our public contributions policy and our positions on key issues.

Year in Review

Read our Executive Messages from:

Welcome to the 14th annual nonfinancial report of Ford Motor Company. Our vision for our sustainability reporting is that it is the basis of organizational learning. It demonstrates our values, and both reflects and drives outstanding economic, environmental and social performance.

This section of our Sustainability Report provides information about this Report and an overview of our sustainability performance in 2012. It includes perspectives on sustainability at Ford from our Chairman, our CEO and our vice president for Sustainability, Environment and Safety Engineering; a summary of 2012 performance data; our goals and commitments; a "map of our year"; and discussion of assurance of this Report.

About this Report

In addition to this full online Report, we publish an eight-page summary report (pdf, 2.64Mb) for use by employees, customers and other stakeholders. Our most recent previous report was released in June 2012.

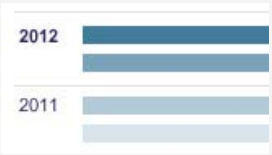
We see reporting as an ongoing, evolving process, not an annual exercise. Further information about our reporting approach can be found in the Reporting and Transparency section. Although this is not formally an "integrated report" – one that combines financial and sustainability reporting – we have expanded on our longstanding practice of reporting on Ford's financial health and its interrelationships with our sustainability performance (see, for example, the value chain infographic, which includes examples of value creation at each stage). We expect our reporting to evolve further and invite your feedback on this Report, and our approach to reporting, at sustaina@ford.com.

Data in this Report are subject to various forms of assurance as noted in the data tables. The summary report was reviewed by Ford's top executives and the Sustainability Committee of the Board of Directors. A Ceres stakeholder committee, which included representatives of environmental groups and socially responsible investors, reviewed our materiality analysis and the outline for the full report.

This Report is aligned with the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines, released in October 2006, at a self-declared application level of "A." See the GRI Index for a complete listing of the GRI indicators. More information on the GRI and the application levels

Map of Our Year

Read about our sustainability-related highlights from 2012, month by month.



Summary of Data

Our Performance Summary lays out our key data in all categories – for 2012 and the previous two years.

can be found on the GRI website.

This Report also serves as Ford's annual United Nations Global Compact (UNGC) "Communication on Progress," as it includes discussion of Ford's implementation of the 10 principles of the UNGC and support for broad U.N. development goals. Please see the UNGC Index for information on where the UNGC principles are covered in this Report.

This Report covers the year 2012 and early 2013. The data are primarily for 2012 (for operations) and for the 2012 and 2013 model years (for vehicles).

Consistent with the GRI Guidelines' guidance on boundary setting, the data in this Report cover all of Ford Motor Company's wholly and majority-owned operations globally, unless otherwise noted. Data measurement techniques, the bases of calculations, changes in the basis for reporting or reclassifications of data previously reported are noted in the data charts.

Letter from William Clay Ford, Jr.

> I believe the fundamental purpose of a corporation is to make people's lives better, and we can do that by creating outstanding products, by investing in the communities where our employees live and work, and by using our position as a technology leader to tackle global sustainability challenges."

Since we released our first report on this subject in 1999, sustainability at Ford Motor Company has evolved from an idealistic vision into a core part of our business. Our commitment to responsibly use our resources to create long-term value has guided us successfully through periods of rapid change and shifting markets. It has helped us to be successful as a corporate citizen and as a global competitor.

Creating long-lasting benefits for all of our stakeholders starts with a business model that is economically sustainable. Our ONE Ford plan enables us to fully leverage our worldwide resources by operating as a single global enterprise. Under this plan we emerged from the economic downturn as a vibrant, growing business. We have been solidly profitable since 2010, and we continue to invest in and expand our operations around the world, taking advantage of the flexibility our global vehicle platforms provide us.

Improving Our Product and Manufacturing Footprint

Our strong showing in the electrified vehicle market is a good example of how great products can help build a strong business as well as a better world. In 2012, we introduced six new electrified vehicles in North America, including hybrid, plug-in hybrid and pure battery electric models. By offering a variety of vehicles, we make it easier for customers to embrace these fuel-saving technologies. As a result of our aggressive move into this growing segment, we set sales and market share records for our hybrid vehicles in 2012, and that strong momentum continues in 2013.

Also in 2012, we announced a five-year strategy to reduce our global waste to landfill by 40 percent per vehicle between 2011 and 2016. This waste goal complements our multiyear per-vehicle facility goal to cut water use and carbon dioxide (CO_2) emissions. On the product side, we continue to make good progress on our ongoing, science-based goal to reduce vehicle CO_2 emissions enough to make a measurable contribution to combating climate change.

Supporting People Globally

I believe the fundamental purpose of a corporation is to make people's lives better, and we can do that by creating outstanding products, by investing in the communities where our employees live and work, and by using our position as a technology leader to tackle global sustainability challenges.

We consider our people to be our most important resource, and I am very proud of our initiatives related to human rights. We adopted our human rights code in 2003 to help ensure our employees around the world are afforded dignity and safety in their work environment. Our guidelines have evolved over the years and our commitment to environmental and social sustainability, as well as to human rights throughout our global operations, has expanded. We have also reinforced our

commitment to the people who work in our supply chain. We have led collaborations with our key suppliers and other automakers to embed this approach across the industry.

Addressing Mobility Challenges

We are also looking at the impact our products will have in the future, when urban mobility, climate change and other challenges will dramatically alter the nature of private car ownership. We already are beginning to see these changes unfold and we need to proactively be ready for them. To explore these trends, Ford examined the demographic and logistical realities that will shape transportation over the next several decades, and we have used these projections to shape our path going forward.

Increased global population and prosperity could double the number of vehicles in the world by mid-century. With so many more drivers on the road, wireless communication among vehicles, infrastructure and the Internet will be needed to make driving safer and more efficient. To help guide our efforts in this area, in 2012 we outlined our Blueprint for Mobility, which outlines what we believe transportation will look like by mid-century and beyond, and the technologies, business models and partnerships needed to get there. In short, it maps out our strategy to provide sustainable transportation that is affordable in every sense of the word – economically, environmentally and socially.

We have created this blueprint because we believe mobility is a human rights issue: Access to and ease of transportation make a substantial difference in a society's quality of life. Combining transportation and technology will help reduce the time and resources lost circling urban areas looking for parking, clear crowded highways that slow vital goods from flowing freely, and prevent traffic jams that can stop emergency vehicles in their tracks.

Ford has been committed to the development of connected vehicle communications for more than a decade, and this commitment can be seen in our latest efforts in the U.S. and Europe.

In 2012, a number of automakers, including Ford, began working with the U.S. Department of Transportation and the University of Michigan on a pilot safety study in Ann Arbor, Michigan. Wireless devices were installed in 3,000 vehicles to evaluate the effectiveness of connected vehicle technology in preventing crashes.

In Europe, Ford also is working on two joint research projects to test vehicle-to-vehicle and vehicle-to-infrastructure communication systems under real-world conditions. One is with the German government and the other with a consortium of 29 partners. We provided 20 vehicles for the Germany test, which began in Frankfurt in July 2012.

We also are looking at emerging business models that will change the future transportation landscape.

In 2013, Ford is launching FORD2GO in Germany, the first automotive manufacturer-backed, nationwide car-sharing program in Europe to incorporate dealerships. The program calls for participating Ford dealers across Germany to offer cars and service to customers in their communities, allowing easy access to shared cars and the opportunity for potential customers to experience Ford vehicles while reducing the total number of vehicles on the road.

We are also bringing the benefits of mobility and Internet cloud computing deep into the developing world. In 2012, Ford piloted the SUMURR (Sustainable Urban Mobility with Uncompromised Rural Reach) program in India, combining health applications on mobile phones and the off-road capabilities of a Ford Endeavour to extend the physical reach of maternal care to 3,100 people in 54 remote villages in a rural part of the country. SUMURR serves as a tangible demonstration of the synergy that can be achieved through our products, technology and partnerships to make a genuine difference in the lives of people around the globe.

Looking to the Future

From these exciting wireless communications projects to our efforts to strengthen our financial position and reduce our environmental impact, Ford is deeply committed to sustainability. New technologies and a more open, collaborative approach are helping us achieve breakthroughs we could only dream of in 1999, and we are eager to go further. It is an exciting time for us as we continue on our journey to build great products, a strong business and a better world.

William Clay Ford, Jr.
Executive Chairman

Letter from Alan Mulally

"We are going further by committing to use resources responsibly, because efficient operations yield benefits economically, socially and environmentally. Indeed, going forward, the companies that are sustainable will continue to make products that people want and value, and they will do it using fewer resources and less time."

Our ONE Ford plan continues to deliver, and Ford Motor Company had another successful year in 2012. We have been solidly profitable since 2010, and we continue to invest in and expand our operations around the world, taking advantage of the flexibility our global vehicle platforms provide us. We launched 25 vehicles and 31 powertrains globally in 2012, a testament to our ongoing commitment to product development. We sold 2.2 million vehicles in the U.S. in 2012 and, for the first time, we sold more than 1 million vehicles in our Asia Pacific and Africa region, with record sales in China. We also announced plans to revitalize our Lincoln brand as the Lincoln Motor Company, which will introduce an exciting new lineup of great luxury vehicles.

Our strong global performance was led by the Focus, which was the best-selling nameplate in the world in 2012, and the Fiesta, the best-selling B-car in the world based on the latest global data, while the F-Series truck was the fourth best-selling global nameplate.

Strengthening Our Balance Sheet to Build a Sustainable Business

More than any other milestone, the return of the iconic Ford Blue Oval symbolizes our renewed financial strength. We earned back our investment grade rating from the second of three major ratings agencies in the spring of 2012, triggering the release of the Blue Oval, which had been used as collateral when we borrowed $23.5 billion for our restructuring. This significant achievement also allowed us to lower our borrowing costs and repay loans. Financing our plan and strengthening our balance sheet is a key part of our ONE Ford plan. It reflects the long-term perspective that is at the heart of our ONE Ford plan and our sustainability strategy, which guide us as we build Great Products, a Strong Business and a Better World.

ONE Ford also has transformed our Company into a truly global enterprise in terms of our products and processes. For example, we expect sales in the Asia Pacific region to grow to a full third of our total sales by the end of this decade. We also plan for small vehicles to grow to represent 55 percent of our sales as we serve customers in all markets with a full family of vehicles – small, medium and large; cars, utilities and trucks – giving us a product portfolio that is well balanced and attuned to a world concerned about energy security and climate change.

A sustainable business is also a resilient one. We are implementing the same ONE Ford plan that guided our transformation in North America as we now respond to the volatile economic conditions in Europe by accelerating new product introductions, enhancing our brand and restructuring our manufacturing operations. Europe remains an important market for Ford, and we are committed to serving customers and achieving profitable growth in all regions.

Contributing Solutions

In the longer term, changing markets, the cost and availability of resources, congestion, urbanization and climate change, among other issues, will dramatically alter the nature of private car ownership, while also presenting new opportunities to grow our business. As we expand and realign globally and introduce new products, we are contributing solutions to economic development, energy security and independence and environmental sustainability.

Our fuel economy leadership is one example of our commitment to address climate change. In 2012, we made a strong entry into the electrified vehicle market, giving our customers six new choices: the Fusion Hybrid, C-MAX Hybrid and Lincoln MKZ Hybrid; the Fusion Energi and C-MAX Energi plug-in hybrids; and the Focus Electric, a pure battery electric car. We also are introducing innovative mobile smartphone apps, such as PlugShare on MyFord Mobile, which helps drivers locate nearby charging stations. By March 2013, Ford was the second-leading seller of electrified vehicles in the U.S., capturing 15 percent of hybrid sales, compared to about 3 percent in 2012.

Customers also are responding positively to our efficient EcoBoost® engines. These gas-turbo direct-injection engines provide as much as 20 percent better fuel economy than a traditional engine, without sacrificing performance. In 2012, we reached a major milestone by producing our 500,000th EcoBoost engine worldwide, just three years after its launch.

Our commitment to sustainability extends to our manufacturing processes as well. Our water strategy, which prioritizes actions in water-scarce areas and takes community and ecosystem needs into account, complements our energy efficiency, greenhouse gas and waste management targets and initiatives at our plants.

Our lean, green and flexible Michigan Assembly Plant is an example of how we are working on multiple fronts to transform our manufacturing facilities to be more sustainable. We invested $550 million to convert the plant, which formerly built large SUVs, into a modern and flexible facility that builds some of the smallest and most fuel-efficient products in our lineup. In 2012, the Michigan Assembly Plant became the world's first facility capable of building vehicles with a full array of powertrains – gas-powered, electric, hybrid and plug-in hybrid – all on the same production line. This flexibility is important because it enables us to give customers the power of choice in selecting vehicles to fit their lifestyles, while also giving us the ability to adjust to meet that demand. The plant uses landfill gas and a solar photovoltaic array – one of the largest in Michigan – to cut greenhouse gas emissions and help us gain experience with battery storage of solar electricity.

We are leveraging this experience with sustainable manufacturing in our new facilities in Asia. Our plants under construction in China, for example, use flexible manufacturing, designed-in safety processes, and energy-, water- and waste-saving technologies that are among the most modern in the world.

In addition, we continue to lead efforts across our industry to support human rights in the automotive supply chain, including understanding how Conflict Minerals may be used in automotive products and how to identify and eliminate them. Our actions on human rights and environmental improvements are key elements of our continued commitment to implementation of the United Nations Global Compact.

Serving customers and delivering profitable growth for all of our shareholders begins with creating vehicles that offer best-in-class quality, fuel efficiency, safety, smart design and value. We are going further by committing to use resources responsibly, because efficient operations yield benefits economically, socially and environmentally. Indeed, going forward, the companies that are sustainable will continue to make products that people want and value, and they will do it using fewer resources and less time. Looking beyond our own operations, we are committed to bringing our knowledge, innovative potential and the power of our people to help solve global sustainability challenges ranging from mobility to climate change. By working together, we are contributing to a better world and a sustainable future for all.

Alan R. Mulally
President and Chief Executive Officer
June 2013

Letter from Robert Brown

"While integration is a main feature of our sustainability strategy internally, outside our walls we seek collaboration within our industry, across industries and across sectors. It's only through sharing, caring and trusting one another that we will grow ourselves, and lay the groundwork for generations to come."

I have headed up Ford Motor Company's Sustainability function for a little more than a year, but my tenure at the Company spans more than three decades. During this time, I have seen a genuine transformation as Ford integrated sustainability into its business plan, its products, its operations and its relationship with stakeholders. Although we have a Sustainability department, our biggest accomplishment is having employees from all business units and levels of the Company – including our officers – contribute to this transformation and advance our sustainability efforts through their own work.

It's easy to assert that sustainability is integrated into the Company. It's a little harder to demonstrate. We have extensive information about sustainability integration in the Governance section of this report, and the summary of goals, commitments and status provides insight into our direction on our most material issues. I'll also call out a few examples of integration below.

- In Product Development, our cycle plan, which sets out the vehicles to be built over a five-year period, incorporates a variety of sustainability must-haves, including fuel economy sufficient to keep us on our climate goal glidepath. Each new product also has a variety of targets around vehicle safety, sustainable materials and other attributes. While the improving fuel economy of our vehicles gets the most attention, we've had a number of accomplishments in other areas, too. The 2013 Ford Fusion, for example, uses recycled cotton to provide noise dampening; recycled plastic battery car casings for underbody components; and the equivalent of more than 30,000 soybeans in foam seat cushions, seat backs and head restraints.

- Our Purchasing department leads the implementation of our Code of Human Rights, Basic Working Conditions and Corporate Responsibility (Policy Letter 24) throughout our supply chain, which is much more challenging than implementing it in our own facilities. In 2012, for example, they worked with others in the industry to train 325 Ford suppliers. This department has also taken a proactive approach to reaching across organizational and industry boundaries to work toward an effective approach to eliminating Conflict Minerals and forced labor in the complex and interconnected automotive supply chain.

- Our Research and Innovation function is an important partner in identifying and quantifying our material sustainability issues. Ford scientists developed the intellectual basis for our science-based climate change strategy, as well as the carbon dioxide model that guides its implementation. Our researchers now play an equally important role in our water strategy, helping to peer into the future to understand how increasing water scarcity will affect our operations, our markets and the communities in which we live and work – and how we can craft an effective response. Research and Innovation is also leading the implementation of our Blueprint for Mobility, because mobility is an important issue shaping the future of markets for our vehicles.

- Ford has more than 100 years of commitment to community engagement. Our

sustainability and business priorities, including water, human rights and driving safety, guide our efforts in communities around the globe, and the Ford Motor Company Fund is an important partner in testing innovative solutions to global challenges.

- Our Human Resources department is also important to sustainability. We know that prospective employees care about a wide range of factors when evaluating opportunities, including a company's sustainability record and reputation. Our Human Resources function plays a vital role in communicating our commitment and aligning incentives with sustainability performance.

We often get questions about how we integrate sustainability with performance measurement and compensation. At Ford, we develop business plans in five-year increments and establish sustainability targets based on an analysis of external factors that could impact the business and available resources. Each business unit and function leader has accountability for meeting the targets. Progress is reviewed, generally weekly, at the highest level of the Company. So virtually every function has some accountability for sustainability performance.

In addition, each salaried Ford employee has individual metrics that are established with their supervisor; the metrics are based on the overall Company business plan, which includes sustainability targets. Because of the degree of integration at Ford, people in diverse functions have sustainability-related metrics, whether it's attaining a certain percentage of recycled and renewable content in a new vehicle, or engaging suppliers on sustainability issues. Progress is reviewed against the metrics at least twice a year, and performance relative to the metrics is an important factor in determining merit salary increases.

On the bonus compensation side, all salaried employees' bonuses are based on a single set of company objectives, which are mostly, but not entirely, financial metrics. Ford's financial health is one of the issues we've identified as most material from a sustainability point of view. For example, Ford's strong performance in North America in 2012 was due in part to the fact that many of our facilities are now operating at or near capacity. This is the profitability "sweet spot," but it also indicates environmental and social efficiency. For example, our per-vehicle performance on energy, water and waste has shown long-term improving trends. Nevertheless, we occasionally encounter situations where plants operate below capacity, which introduces inefficiencies. Factories that operate most efficiently offer the safest work environment and the most stable employment and long-term opportunities for employees.

Quality is another important issue that has sustainability implications. High-quality vehicles last longer, are more economical and create less waste over their lifetimes, so they clearly have sustainability advantages. At the same time, customers increasingly weigh sustainability actions in their views of quality. Over the last decade, we've established a record of strong and improving quality performance, although we slipped in a few cases last year. We are working tirelessly to improve quality, even as we introduce new technologies and new vehicles at an ever-increasing rate.

While integration is a main feature of our sustainability strategy internally, outside our walls we seek collaboration within our industry, across industries and across sectors. Throughout this report you will find references to innovative partnerships. For example, we have taken a collaborative approach to developing sustainable materials to reduce costs and share the benefits. We are working with Coca-Cola, Nike, Procter & Gamble and Heinz on bio-plastics and with the Oak Ridge National Laboratory and Dow on carbon fiber. This kind of cooperation is vital to making progress on the many challenges we face. It's only through sharing, caring and trusting one another that we will grow ourselves, and lay the groundwork for generations to come.

Robert Brown
Vice President, Sustainability, Environment and Safety Engineering
June 2013

Performance Summary

Below is a summary of our key performance data. Please also see the Year in Review for discussion of data parameters, as well as the data sections in the Financial Health, Climate Change and the Environment, Supply Chain, Water, Vehicle Safety and Driver Assist Technologies, and People sections for additional indicators, five-year trends and notes on data assurance.

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Financial Health

	2010	2011	2012
Global Quality Research System "things gone wrong" (3 months in service), total "things gone wrong" per 1,000 vehicles[1]	1,140	1,447	1,373
Global Quality Research System customer satisfaction (3 months in service), percent satisfied[2]	82	68	72
Sales satisfaction with dealer/retailer, Ford brand, U.S., net promoter score	84.0	85.0	87.0
Sales satisfaction with dealer/retailer, Ford brand, Europe, net promoter score	79.0	82.0	86.5
Service satisfaction with dealer/retailer, Ford brand, U.S., net promoter score	75.0	75.0	78.0
Service satisfaction with dealer/retailer, Ford brand, Europe, net promoter score	59.0	64.0	71.5
Shareholder return – Bloomberg total return analysis, percent	67.9	-36	23
Net income/loss, $ billion	6.6	20.2	5.7
Sales and revenue, $ billion	129	136	134.3

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Climate Change and the Environment

	2010	2011	2012
Ford U.S. fleet fuel economy, combined car and truck, miles per gallon (higher mpg reflects improvement)	26.9	27.8	30.0
Ford U.S. fleet CO_2 emissions, combined car and truck, grams per mile (lower grams per mile reflects improvement)	329	318	297
Ford Europe CO_2 tailpipe emissions per vehicle, grams per kilometer (based on production data for European markets)	128	130	129[3]
Worldwide facility energy consumption, billion kilowatt hours	16.1	15.5	14.0
Worldwide facility energy consumption per vehicle, kilowatt hours per vehicle	3,087	2,778	2,449
Worldwide facility CO_2 emissions, million metric tons	5.2	5.1	5.1
Worldwide facility CO_2 emissions per vehicle, metric tons	1.01	0.91	0.90

North American Energy Efficiency Index, percent (higher percentage reflects improvement)	14.4	2.6	6.4 [4]

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Water

	2010	2011	2012
Global water use, million cubic meters	26.2	25.7	23.9
Global water use per vehicle produced, cubic meters	5.1	4.7	4.3

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Vehicle Safety and Driver Assist Technologies

	2010	2011	2012
U.S. safety recalls, number per calendar year (including legacy vehicles on the road for 10+ years)	7	13	24
U.S. units recalled, number of units (including legacy vechicles on the road for 10+ years)	551,000	3,339,000	1,399,000
IIHS Top Safety Picks by model year, percent of Ford Motor Company vehicles tested receiving the honor	n/a	52	75 [5]

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Supply Chain

	2010	2011	2012
Number of individuals trained in working conditions requirements and sustainability management systems	2,149	2,414	2,760
Assessments to date [6]	751	834	811
Training cascade to workforce, individuals trained	318,593	372,998	430,257

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People

	2010	2011	2012
Employee satisfaction, Pulse survey, overall, percent satisfied	68	69	71
Overall dealer attitude, Ford, relative ranking on a scale of 1–100 percent (winter/summer score)	83/85	84/82	84/83
Overall dealer attitude, Lincoln Mercury, relative ranking on a scale of 1–100 percent (winter/summer score)	71/62	61/64	68/67
Ford Motor Company Fund contributions, $ million	19	20	21.6
Corporate contributions, $ million	10	10	8.5
Volunteer Corps, thousand volunteer hours	112	110	115
Lost-time case rate (per 100 employees)			
Americas	0.8	0.9	0.8
Asia Pacific and Africa	0.1	0.1	0.1
Europe	0.3	0.3	0.4

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1. The Global Quality Research System (GQRS) is a Ford-sponsored competitive research survey. The GQRS is a good indicator of other quality results. For the 2011 model year, we began reporting global GQRS TGW data. In previous years we had reported only North American region GQRS TGW data. In addition, we changed the GQRS survey to include additional questions on vehicle entertainment and information systems. Therefore, the 2011 results are not comparable to previous years.
2. The Global Quality Research System (GQRS) is a Ford-sponsored competitive research survey. The GQRS is a good indicator of other quality results. For the 2011 model year, we began reporting global GQRS Customer Satisfaction data. In previous years, we had reported only North American region GQRS Customer Satisfaction data. In addition, we changed the GQRS survey to include additional questions on vehicle entertainment and information systems. Therefore, 2011 results are not comparable to previous years.
3. This is preliminary data; official data from European Commission expected in November 2013.
4. The energy efficiency index is a normalized indicator of energy used per vehicle produced based on a calculation that adjusts for typical variances in weather and vehicle production. The Index is set at 100 for the baseline year to simplify tracking annual improvements. In 2012, we expanded our energy efficiency to include global energy use data. In previous years, it only included energy use at North American facilities. In 2012, we also reset the baseline year to 2011. A year 2000 baseline was used through 2006; the baseline was reset to year 2010 starting in 2011. The year 2012 improvement indexed against the year 2011 baseline was 6.4, indicating a 6.4 percent improvement in global energy efficiency per vehicle from 2011 to 2012. Higher percentage reflects improvement.
5. In 2013, this figure rose to 93 percent.
6. Prior-year ‘Assessments completed to date’ figures reflect calculation errors in deriving totals. These errors have been corrected for 2012; however, certain figures may be slightly lower than in prior years due to the calculation corrections.

Ford's Goals, Commitments and Status

This table summarizes Ford's goals, commitments, targets and progress in our material issue areas and other important performance areas. Please see the data sections for our complete data reporting and data notes.

KEY On Track | In Process | Not on Track | New goal

Financial Health | Climate Change and the Environment | Water | Vehicle Safety | Supply Chain | Health and Safety

Financial Health

Goal/Commitment	2012 Progress	On Track?
Execute our "ONE Ford" transformational plan to create a leaner, more-efficient global enterprise.	Continued to strengthen our balance sheet, with 2012 concluding as one of our most profitable years ever in North America. Related Links: » Data: Worldwide Taxes Paid » Current Financial Health	✓
Achieve profitability in 2012.	Reported total Company full-year, pre-tax profit of $8 billion – our third year in a row of $8 billion or more in pre-tax profits. In 2012, had our highest total Company fourth quarter pre-tax profit in more than a decade. Earned back our investment grade rating from the second of three major ratings agencies. Related Links: » Data: Worldwide Taxes Paid » Current Financial Health	✓
Align capacity to demand.	Continued to globalize vehicle platforms that can be adapted to meet specific regional needs and to produce the vehicles that customers want. Began executing our European Transformation Plan to increase cost efficiencies and address manufacturing overcapacity. Related Links: » Current Financial Health	✓
Reverse the trend of losing money on small-car production in the U.S.	Continued to boost production of smaller-sized vehicles in North America. Continued to maintain lean cost structure. Enhanced revenues through class-leading fuel economy, safety performance and quality. Related Links: » Current Financial Health	✓
Set new goals under "Blueprint for Mobility" in early 2012.	In this Blueprint, defined the start of our thinking about what transportation will look like in 2025 and beyond, and identified the types of technologies, business models and partnerships needed to get us there. Related Links: » Our Blueprint for Mobility	»

Climate Change and the Environment

Goal/Commitment	2012 Progress	On Track?
Climate Change – Products		
Do our share to stabilize carbon dioxide (CO_2) concentrations in the atmosphere at 450 ppm, the level generally accepted as that which avoids the most serious effects of climate change.	Reduced fleet-average CO_2 emissions of U.S. vehicles by 15 percent from the 2007 to the 2012 model years. Reduced fleet-average CO_2 emissions of European vehicles by 15.5 percent from the 2007 to 2012 calendar years.[1] Related Links: » Data: Fuel Economy and CO_2 Emissions » Vehicle – Results	
Ensure that every all-new or redesigned vehicle we introduce will be best in class or among the best in class for fuel economy in its segment.	Followed through on this commitment with vehicles introduced in all our regions, and will continue to do so in future product launches. Related Links: » Vehicle – Results	
Climate Change – Manufacturing		
Reduce global facility CO_2 emissions per vehicle by 30 percent by 2025 compared to a 2010 baseline.	Reduced 2012 CO_2 emissions by 1 percent per vehicle compared to 2011. Related Links: » Data: Worldwide Facility CO_2 Emissions per Vehicle » Operational Energy and Greenhouse Gas Emissions – Performance	
Reduce facility energy use per vehicle globally by 25 percent between 2011 and 2016, adjusted for weather and production.	Improved energy efficiency by 6.4 percent compared to 2011, normalized for weather and production levels. Related Links: » Data: Worldwide Facility CO_2 Emissions per Vehicle » Operational Energy and Greenhouse Gas Emissions – Performance	
Environment – Products		
Increase the use of recycled, renewable and lightweight materials. Use soy foam seat cushions and backs on 100 percent of Ford vehicles manufactured in North America. Use at least 25 percent recycled content in seat fabrics on all new and redesigned vehicles sold in North America.	Since 2011, all vehicles produced in North America have soy foam seating. Expanded use of recycled-content fabrics for seats and headliners. Continued to develop sustainable materials strategy requiring recycled plastics and textile materials for many applications globally. Continued to implement strategic principles for expanding the use of recycled and renewable materials that seek to reduce total lifecycle impacts. Related Links: » Choosing More Sustainable Materials	
Increase the use of allergy-tested and air-quality-friendly interior materials.	Continued to implement specification for low-emissions and allergy-free materials, which is being migrated across product lines. Related Links: » Improving Vehicle Interior Environmental Quality and Choosing Allergy-Tested Materials	
Environment – Manufacturing		
Reduce water use.	(See Water section of Goals Table.)	
Reduce CO_2 emissions.	(See Climate Change section of Goals Table.)	
Reduce waste sent to landfill by 40 percent on a per-vehicle basis between 2011 and 2016 globally.	Reduced landfill disposal in 2012 by more than 19 percent per vehicle compared to 2011. Related Links: » Data: Waste to Landfill per Vehicle » Waste Management	
Maintain volatile organic compound (VOC) emissions from painting at North American assembly plants at 23 grams/square meter or less.	Achieved 2012 VOC emissions at North American assembly plants of 18 grams/square meter. Related Links: » Data: North America Volatile Organic Compounds Released by Assembly Facilities » Non-CO_2, Facility-Related Emissions	

1. These results are based on preliminary data. The final 2012 calendar-year fleet-wide CO_2 emissions data for our European fleet will be available in November 2013. For all years, these data do not include Volvo.

Water

Goal/Commitment	2012 Progress	On Track?
Cut the amount of water used to make each vehicle by 30 percent globally by 2015, compared to 2009.	Reduced water use per vehicle by 8.5 percent from 2011 to 2012. Related Links: » Data: Water » Progress in Reducing Water Use	✓

Vehicle Safety

Goal/Commitment	2012 Progress	On Track?
Design and manufacture vehicles that achieve high levels of performance in real-world safety and in government- and non-profit-sponsored crash testing and offer innovative safety and driver-assist technologies.	Remained among the global leaders in vehicle safety. To date, Ford Motor Company has earned a total of 91 “Top Safety Picks” from the Insurance Institute for Highway Safety (IIHS) – more than any other manufacturer in the eight-year history of that crash testing program.[1] Also, 93 percent of 2013 model year Ford Motor Company vehicle nameplates tested were named IIHS Top Safety Picks. For the 2013 model year, earned the highest possible Overall Vehicle Score of five stars for seven Ford Motor Company vehicles in the New Car Assessment Program (NCAP) of the U.S. National Highway Traffic Safety Administration. In the 2012 Euro NCAP assessments, received Euro NCAP’s Best in Class recognition for the Ford B-MAX, Kuga and Transit, for having the highest safety performance scores in their vehicle segments. Earned an industry-leading total of seven Euro NCAP Advanced rewards for our Lane Keeping Aid, Active City Stop, Forward Alert, Lane Keeping Alert, MyKey®, Emergency Assistance and Driver Alert technologies. Related Links: » Data: Vehicle » Highlights	✓
Meet or exceed all regulatory requirements for safety.	Continue to meet this goal every year. Ford’s internal Safety Design Guidelines and other internal standards go beyond stringent regulatory requirements. Ford often establishes internal standards on emerging issues long before public domain or regulatory standards are adopted. Related Links: » How We Manage Vehicle Safety	✓
Provide information, educational programs and advanced technologies to assist in promoting safe driving practices.	Continued to invest in Ford Driving Skills for Life (DSFL), focusing on teen drivers in the U.S. and first-time drivers of all ages in Asia Pacific and Africa. In 2012 in the U.S., visited more than 175 high schools in ten states and Puerto Rico, where we held assemblies, safe driving activities and hands-on training. In Asia Pacific and Africa, have trained more than 63,000 people since the program’s inception. Continued to offer the MyKey® system, allowing parents to program a key for their teenagers that can limit certain features (such as maximum speed and audio volume), lock out the radio when the safety belt is not buckled and invoke a Do Not Disturb feature, sending incoming phone calls and text messages to a synced phone’s mailbox. MyKey® is available on nearly all Ford Motor Company retail vehicles in North America, and its availability is expanding to other regions. Related Links: » Encouraging Safer Driving	✓
Play a leadership role in vehicle safety research and innovation.	Continued to collaborate with other automotive companies on precompetitive safety projects to enhance the safety of the driving experience and develop future technologies, such as through the U.S. Council for Automotive Research. Also, supported research at the National Science Foundation’s Center for Child Injury Prevention Studies. And, continued to collaborate with university partners on a wide range of research projects, including research into advanced safety technologies. Through our University Research Program (URP), focused on innovations with near- and mid-term implementation potential. In 2012, awarded 20 new URP grants to 18 universities around the globe.	✓

	Related Links: » Collaborative Efforts	
Play a leadership role in research and development relating to “connected vehicles.”	Took part in collaborative, active-safety research in Europe known as Safe Intelligent Mobility – Test Field Germany (simTD) to investigate vehicle-to-vehicle and vehicle-to-infrastructure communications in a large-scale field operational test. Contributed to the European harmonization and standardization of wireless communication systems and applications within the framework of the DRIVing implementation and Evaluation of C2X communication technology (DRIVE C2X). Also, continued to take part in collaborative research in the U.S. via the Crash Avoidance Metrics Partnership (CAMP) and Vehicle Infrastructure Integration Consortium (VIIC). Related Links: » Case Study: Connected Vehicles	

1. Historic totals include all brands and entities owned and controlled by the manufacturer during the 2006–2013 calendar years. For Ford Motor Company, this includes Ford and Lincoln, as well as Mercury (through the 2011 model year) and Volvo (through the 2010 model year). Totals do not include Mazda.

Supply Chain

Goal/Commitment	2012 Progress	On Track?
Encourage key production suppliers to: introduce codes of conduct aligned with international standards and Ford’s Code of Human Rights, Basic Working Conditions and Corporate Responsibility; develop robust management and compliance systems to support their codes; and extend these expectations to their own suppliers.	More than 80 percent of our Production Aligned Business Framework (ABF) suppliers have demonstrated that they have codes of conduct in place that are aligned with international standards. Thirty-five percent of our ABF suppliers have demonstrated that they have met all three Ford milestones – that is, they have aligned codes of conduct in place supported by robust management systems governing their own operations and their supply chain. Related Links: » Going Further with Our ABF suppliers	
Help suppliers build their capacity to manage supply chain sustainability issues through factory-level and management training on working conditions, human rights, ethical business practices and environmental responsibility; require participating suppliers to cascade training information to their own employees and suppliers.	In 2012, trained more than 325 Ford suppliers in Argentina, China, Mexico, Russia, Thailand, Turkey and Venezuela through joint industry trainings coordinated through the Automotive Industry Action Group (AIAG). The global total of Ford suppliers trained since program inception is nearly 2,100.[1] By having training cascaded by participating suppliers, have impacted more than 2,700 supplier representatives, 25,000 supplier managers, more than 430,000 individual workers, and nearly 85,000 sub-tier supplier companies since the program’s inception. Related Links: » Building Supplier Capability through Localized Training and Collaboration » Data: Working Conditions Training and Assessment Status for Supply Chain	
Assess Tier 1 suppliers for compliance with local laws and Ford’s supply chain sustainability expectations.	Since 2003, have conducted more than 800[2] third-party audits of existing and prospective Tier 1 suppliers in 20 countries. Related Links: » Assessing Suppliers » Data: Working Conditions Training and Assessment Status for Supply Chain	
Work collaboratively across the industry to facilitate development of an industry-wide approach to key supply chain sustainability issues, including working conditions, human rights and raw materials sustainability.	Serve as an active member of the AIAG, the auto industry’s primary organization for supply chain issues. Chair three AIAG work groups: chemicals management and reporting, greenhouse gases, and environmental performance metrics. Serve as founding member of the UN Global Compact Advisory Group on Supply Chain Sustainability. Also, helped found the CSR Europe Automotive Working Group on Supply Chain Sustainability in 2013. Related Links: » Industry and Cross-Industry Collaboration	
Better understand the carbon footprint of Ford’s supply chain to inform the development of a broad-based carbon management approach for our supply chain.	Surveyed 135 suppliers in 2012 (up from 128 in 2011 and 35 in 2010) regarding greenhouse gas emissions, and achieved a 92 percent voluntary response rate.	

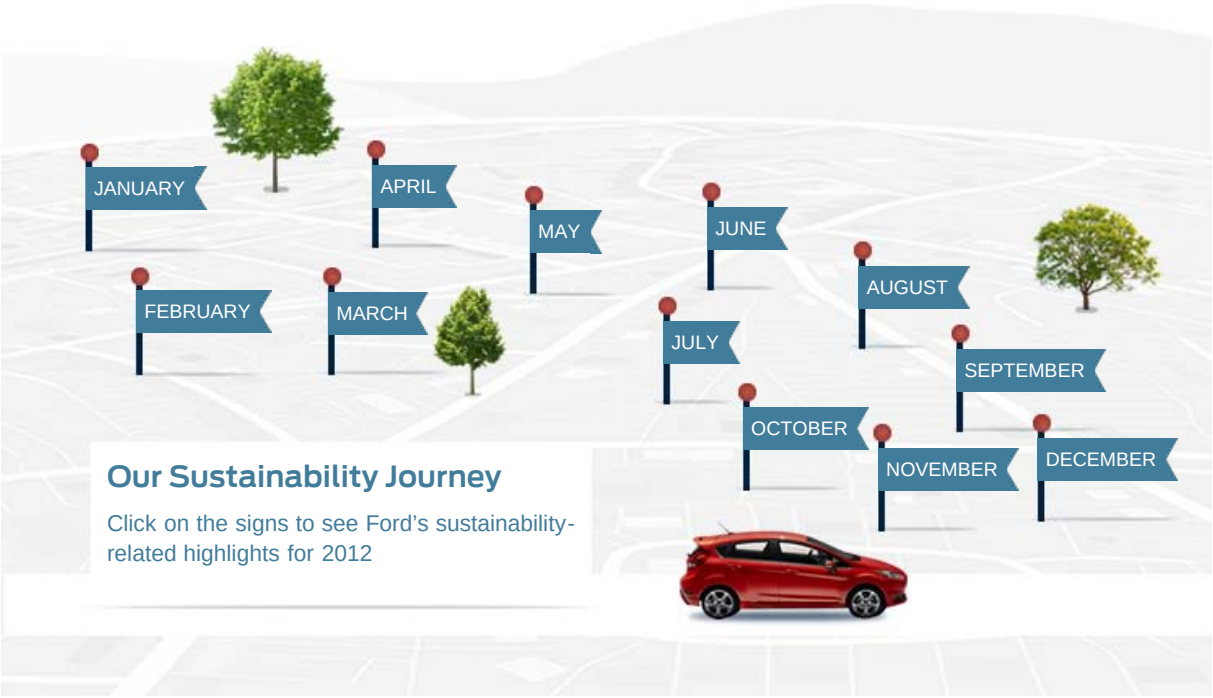
	Related Links: » Supplier Greenhouse Gas Emissions	
Source at least 10 percent of U.S. purchases from minority- and women-owned businesses annually.	Purchased $5.7 billion in goods and services from approximately 250 minority-owned suppliers and $1.2 billion in goods and services from more than 150 women-owned businesses, our third-consecutive year of improvement. Related Links: » Supplier Diversity Development » Data: Supply Chain	

1. This figure includes suppliers trained in Ford-led and joint industry trainings.
2. Figure corrected from 2011 due to classification errors.

Health and Safety

Goal/Commitment	2012 Progress	On Track?
Safety		
Fatalities target is always zero.	In 2012, for the second time in Ford's history, did not have an employee work-related fatality during the calendar year. Tragically, however, we experienced a fatality at one of our joint venture operations in Thailand. Related Links: » Data: Workplace Safety » Our 2012 Safety Record	
Serious injuries target is zero; overall goal is to attain industry competitive lost-time and DART levels and drive continuous improvement; specific targets are set by business units yearly for five years into the future.	A major safety indicator – the lost-time case rate – was at .51, a 10 percent improvement from 2011's rate of 0.57. We experienced 139 serious injuries among our direct employees, compared to 143 the previous year. Related Links: » Data: Workplace Safety » Our 2012 Safety Record	
Health		
Maintain or improve employee personal health status through participation in health risk appraisal and health promotion programs.	Had active personal health promotion programs in place in most regions. Deployed common global metrics and developed plans to implement them in remaining countries. Employee participation in health-risk appraisals is a core component of U.S. health benefit program and we are exceeding targets for employee participation goal. Related Links: » Health as a Strategic Advantage	

Map of Our Year



January

Improved Profits

Reported a full-year, pre-tax operating profit of $8.8 billion for 2011. Ford has posted a pre-tax operating profit for 10 consecutive quarters.

Brand Promise

Ushered in a new global brand promise: *"Go Further."*

Groundbreaking Vehicle

Garnered the "Best in Show" award at the North American International Auto Show for the new 2013 Ford Fusion. The Fusion demonstrates our globalized approach to making all forms of the vehicle on the same assembly line.

Mobility Research

Announced plans to open a dedicated research lab in California's Silicon Valley as part of a commitment to make technology affordable for millions.

MyFord Mobile®

At the 2012 International Consumer Electronics Show, showcased the beta version and new social networking components of the MyFord Mobile® app on the new Focus Electric for the first time.

February

Mobility Blueprint

Outlined a new Blueprint for Mobility, which sets near-, mid- and long-term goals for solutions to the changing transportation landscape.

Human Rights Code

Revised and renamed Policy Letter 24, now the Code of Human Rights, Basic Working Conditions and Corporate Responsibility.

Addressing Health in India

Kicked off a program in Tamil Nadu, India, that uses our vehicles and connected technologies to address critical social needs, such as health care.

Climate Leadership

In 2012, Ford was the only automaker to receive a Climate Leaders Award, from the U.S. Environmental Protection Agency (EPA).

March

Ethics Award

Honored for the third year in a row by the Ethisphere Institute as one of the World's 100 Most Ethical Companies.

Human Rights Honor

Ranked #1 in the Human Rights category in *Corporate Responsibility Officer* magazine's 100 Best Corporate Citizens list for the second year in a row.

Ford Focus Electric

Obtained an official EPA fuel economy rating of 105 mpg-e combined city and highway for the Ford Focus Electric, making it the most fuel-efficient five-passenger vehicle available in the U.S.

Job Growth

In the past five years, doubled the size of our team working on fuel-saving technologies globally, including hiring dozens of engineers. We are converting one of our largest labs to centralize hybrid and electrification programs in order to provide the best fuel efficiency for our customers.

April

Expansion in China

Announced a $600 million expansion in Chongqing and a new $760 million plant in Hangzhou, to double passenger car production capacity by mid-decade.

Eco-Documentary Series

Together with the cultural media platform SHFT.com, revealed the first films in a new documentary series that profiles leading eco-entrepreneurs and innovators who are transforming industries with groundbreaking sustainability solutions.

Small, Efficient Engines

Began offering an industry-leading seven vehicles with the smallest engines in their segment. When talking about engines, bigger is no longer necessarily better. Buyers want superior fuel efficiency without sacrificing performance, which is where Ford's EcoBoost® engines fit in.

May

Focus Electric

Certified 67 Ford dealers to sell the Company's first all-electric car – the Focus Electric. The dealers are located in California, New York and New Jersey – markets that account for a large percentage of electrified vehicle sales.

The Blue Oval Rises

More than 1,000 Ford employees recreated the iconic Blue Oval in human form at World Headquarters in Dearborn, Mich. They were celebrating a milestone, as Moody's upgraded the Company to investment-grade status, allowing Ford to reclaim the assets it mortgaged in 2006, including the Blue Oval, to finance its turnaround plan.

Driver Assist Technologies

Saw the all-new 2013 Ford Fusion leapfrog Toyota Camry and Honda Accord with a suite of active driver assist technologies usually found only in luxury cars. A package of radar, ultrasonic, optical and motion sensors adds a new level of convenience for customers.

Environmental Volunteers

Provided more than $110,000 in grants to community organizations to purchase tools and supplies to complete environmentally focused projects in nine states. More than 700 Ford volunteers went to work digging, chopping and hammering to complete these community projects.

Fuel-Efficient Small SUV

Saw the new Ford Escape certified by the U.S. Environmental Protection Agency (EPA) as the most fuel-efficient small SUV with an automatic transmission. The Escape's 1.6-liter EcoBoost® engine is certified at 33 mpg – 5 mpg better than the Toyota RAV4.

June

MyFord Mobile® iPhone App

Made available the MyFord Mobile® iPhone app to drivers of the new 2012 Ford Focus Electric. The app includes value charging information, a trip planner and a public charger location database, as well as a cellular connection to the Focus Electric via an embedded cellular modem.

Computer History Museum

Had Ford SYNC® inducted into the permanent collection of the Computer History Museum in Mountain View, Calif. Ford's name now sits alongside such luminaries as Microsoft, IBM, Cray, Apple and Google.

International Engine of the Year

Earned the 2012 "International Engine of the Year" award for our new 1.0-liter EcoBoost® engine, which launched to acclaim on the Ford Focus in Europe. The award is determined based on votes cast by 76 journalists from 35 countries around the world.

Operations Energy Reductions

Announced in our 13th annual Sustainability Report that we had reduced per-vehicle energy use in our global manufacturing facilities by 22 percent in the last six years. Also, announced plans to reduce per-vehicle energy usage by another 25 percent by 2016.

Mobility-Related Technologies

Announced that we are researching and developing intelligent driving technologies designed to help address traffic jams and other future mobility challenges that come with rapid urbanization and population growth around the world.

July

A Robot with Feelings

Showcased the talents of RUTH the robot. The Robotized Unit for Tactility and Haptics (RUTH) machine can replicate human motion and "sense" the feel and fit of a vehicle's interior. Through RUTH, for example, Ford knows its 2013 Fusion has the feel of interior quality that customers want.

Feeding the Hungry

Together with the hunger-relief organization Feeding America, enabled participants in the U.S. to host events for the 2013 Ford Escape Hunger Drive. Guests were able to drive, ride in or walk around the all-new Escape. In turn, Ford provided 40 meals per guest to people at risk of hunger.

Sales Milestones

Saw the Ford Fusion exceed its best-ever July sales record, with 23,326 vehicles sold. Also, Ford Mustang sales in the U.S. increased 8 percent versus last year, with 7,371 vehicles sold, representing its third-straight month of sales gains. Meanwhile, Ford Explorer sales totaled 11,313 vehicles in July – its best-ever July sales result since 2006.

Helping Disaster Victims

Donated $50,000 to the American Red Cross and its chapters to assist with disaster relief in the wake of severe weather. In Colorado, the funds were used by Red Cross chapters to assist with relief efforts associated with the wildfires in that state. Ultimately, matching employee donations increased total contributions.

August

Global Ford EcoBoost®

Highlighted Ford's latest engine technology – the EcoBoost® engine – through unique livery on select racing cars around the world. ("Livery" refers to the decals and logos applied to a racecar, to indicate its team sponsorship.)

Electrification

Announced that we are adding new green jobs, doubling our battery-testing capabilities and speeding electrified vehicles to market by at least 25 percent. With more than 1,000 engineers working on electrification and a newly dedicated Advanced Electrification Center, we are creating even more fuel-efficient vehicle choices for our customers.

Top-Speed Electric Vehicle

Announced that Ford C-MAX Energi plug-in hybrid drivers enjoy the industry's top electric-only speed among all plug-in hybrid vehicles – 85 mph. Topping the Toyota Prius plug-in's top EV-only speed by more than 20 mph, C-MAX Energi can easily keep pace with the flow of traffic.

Drive 4 UR Community

Together with our dealers, launched a new program called Drive 4 UR Community, which is designed to help raise much-needed funding for local community groups and nonprofit organizations.

September

Record Sales

Set an all-time sales record in China, with passenger car sales increasing by 54 percent and total sales increasing by 35 percent compared to September 2011.

Our 350 Millionth Vehicle

Celebrated our 350 millionth vehicle – a Ford Focus, which was the world's bestselling car in the first half of 2012. This milestone Focus was produced at our newest global manufacturing facility in Rayong, Thailand, about 120 miles southeast of Bangkok.

Rare Earth Metals

Announced that the lithium ion batteries in Ford's new generation of electrified vehicles are expected to reduce the use of rare earth metals by up to 500,000 pounds a year, compared to nickel metal hydride batteries. The lithium ion batteries are also more powerful and result in better fuel efficiency.

Guinness World Records®

Set a Guinness World Records® achievement by holding the world's largest game of "Red Light – Green Light." In a celebration at Ford's Dearborn World Headquarters – part of a five-city U.S. launch of the new Ford Fusion – 451 employees played the game to showcase the Auto Start-Stop feature on the 1.6-liter EcoBoost® Fusion.

October

EcoBoost® Engine

Honored with a Breakthrough Award from *Popular Mechanics* magazine for our innovative 1.0-liter EcoBoost® engine. Available now in Europe on the Ford Focus, this three-cylinder engine will soon be offered globally.

Restructuring European Manufacturing Operations

Announced a proposal to restructure our Europe manufacturing operations as part of our comprehensive plan to respond to structural market changes and deliver profitable growth in the region.

Warriors in Pink® Documentary

Unveiled the first-ever documentary by Warriors in Pink®, the Ford program that raises awareness and funds in the fight against breast cancer. With this documentary, Warriors in Pink hopes to create a powerful and inspiring resource to all who have been touched by the disease.

Supplier Diversity Award

Named Corporation of the Year by the Michigan Minority Supplier Development Council. Ford is the first automaker to garner this award for three consecutive years.

Ford Driving Skills for Life

During National Teen Driver Safety Week, introduced an online video game patterned after Ford Driving Skills for Life's award-winning driving exercises. Ford Driving Skills for Life is our flagship driver education program.

November

Transit Connect Wagon

Introduced the first seven-passenger people mover – the all-new Transit Connect Wagon – expected to break the 30+ mpg barrier. The Transit Connect Wagon drives like a car, has the flexibility of a utility and can haul the payload of a pickup truck.

Car of the Year

Honored with the first "Car of the Year" award ever bestowed by *Popular Mechanics* magazine, for the Ford Escape. Reviewers write: "The driving experience feels like it's two full generational leaps ahead of the old Escape."

Making History

Started production of the Ford C-MAX Energi plug-in hybrid at our Michigan Assembly Plant (MAP), making MAP the only manufacturing site in the world to build vehicles with five different fuel-efficient powertrains on the same line, and the only one to build four vehicles that deliver 40 mpg or more in real-world driving.

Lincoln, Reinvented

At the Los Angeles Auto Show, celebrated the heritage of Lincoln and looked to its future. Seven vintage Lincolns, each selected for their historical significance, were on display at the show. The all-new MKZ premium midsize sedan was also unveiled at the show, signaling the brand's reinvention.

December

Oldest Ford Vehicle

The oldest surviving Ford production car, a 1903 Model A, purchased at auction by Bill Ford. The car was unveiled as part of an employee event to kick off the 150th anniversary celebration of Henry Ford's birth.

Ford Thailand

In Thailand, saw strong sales across the Ford lineup drive the Company's full-year retail sales in 2012, up an extraordinary 88 percent from a year ago to 54,865 units – representing Ford Thailand's all-time best annual performance and making Ford one of the fastest-growing automotive brands in the country.

Fourth-Quarter Profits

Announced our highest total Company fourth-quarter pre-tax profit in more than a decade.

Assurance

For this Sustainability Report and our previous six reports, Ceres convened Stakeholder Committees to advise us. Ceres leads a national coalition of investors, environmental organizations and other public interest groups working with companies to address sustainability challenges. Ford agreed to work with a stakeholder team that was selected for us by Ceres. The Ceres Stakeholder Committee that was convened is an independent group of individuals drawn primarily from the Ceres coalition and representing a range of constituencies that have expertise in environmental, social and governance issues.

The Committee reviewed past reports, the outline for the 2012/13 Sustainability Report and a draft of the updated materiality analysis, which is included in this report. The Committee met once by teleconference, and some members provided input to Ceres outside of the meeting.

The Committee provided a range of suggestions to improve Ford's reporting and materiality analysis. Major points of feedback and Ford's responses are shown below.[1]

Reporting Recommendations	Response
Climate change and renewable energy: Climate change remains the most important sustainability issue for Ford. Ford has made progress addressing the climate impacts of its products and operations, but has the opportunity to "go further." Specifically, the group looks to Ford to commit to aggressively improving the fuel economy of its fleet across the globe, not just in North America and Europe. To minimize the impact of its operations, Ford should set an absolute greenhouse gas reduction goal and commit to sourcing more renewable energy.	Ford's climate goal is an absolute, global goal that takes into account both products and facilities and is based on contributing to climate stabilization, as described on the Climate Change section landing page and the section on Ford's Science-Based CO_2 Targets. We have implemented renewable energy projects as opportunities have presented themselves, but we do not have a specific target for renewable energy generation or sourcing at this point.
Water: Stakeholders are pleased that water is one of Ford's top priority areas, and appreciate Ford's recognition of the human right to water. The group also supports Ford's approach to move "beyond the fence line," and encourages the Company to communicate how it integrates water into everyday business decisions.	In this year's Sustainability Report, we have continued to expand the coverage of our evolving water strategy and the steps we are taking to analyze risks and use water efficiently everywhere we operate. The report also continues to highlight the investments we make in water stewardship projects in the communities where we have facilities.
Managing the impact of a growing business: Ford's turnaround in the last five years is impressive, as are its global growth plans for the near future in China and India. The group would like Ford to communicate how it is ensuring that it will manage environmental and social risks associated with increasing operations in Asia, as well as continue to communicate how it is addressing the implications of aggregate growth around the globe (not just Ford's growth) and the pressures it will put on the environment.	Our climate and water strategies take into account the overall growth in the market for cars and light trucks. Our work in mobility explores the constraints on growth in private ownership of automobiles and new models of meeting human needs for mobility. This year's report includes an expanded discussion of our operations in China.
Public policy: Public policy can help address the enormous environmental and social challenges facing Ford and society at large. The group looks to Ford to advocate for policies that help address climate, energy and human rights issues; to provide greater disclosure of participation in industry associations; and to use its influence within trade associations to ensure they are not opposing important sustainability legislation.	Ford is very engaged in public policy discussions in a variety of venues and forums (see the Public Policy section). Our culture is to work within channels to achieve ends that are consistent with our public values and with our sustainability priorities, including climate change, water, human rights and healthy communities.
Communicating to investors: Capital markets can be a powerful force for sustainable development, but that depends on the allocation of capital to companies and projects that minimize environmental impact and seize opportunities to create broad stakeholder value. Ford should continue to look for opportunities to demonstrate to the investor community how its sustainability work is creating that value – for instance by including key environmental, social and governance metrics in its 10-K and other investor communications.	This Sustainability Report is our main vehicle for communicating the business value of our sustainability strategy and performance. We have included a section on financial performance in our Sustainability Report for the past eight years and outline the business benefits of addressing each of our material issues. The 2012 Ford Annual Report, online for the first time, includes a section on "Better World", which highlights several of our key areas of sustainability focus. For the launch of this report, our chief financial officer and our global director, Sustainability and Vehicle Environmental Matters, conducted a briefing on highlights of the report for investors and other interested stakeholders.
Goals, targets and performance data: The group recognizes Ford for setting water and waste goals over the last year, and encourages the Company to consider setting more aggressive goals in areas where goals currently exist, and new goals where there are	We have a range of goals related to supply chain sustainability. For example, we encourage all of our key production suppliers to introduce codes of conduct aligned with international standards and Ford's Code of Human Rights, Basic Working Conditions and Corporate

currently none. Goals should be time-bound, covering the near, medium and long terms, be specific and measurable. In particular, the group would like to see more goals demonstrating Ford's commitment to diversity and developing a sustainable supply chain. Finally, Ford should increase disclosure of year-on-year trend data in these areas.	Responsibility; to develop robust management and compliance systems to support their codes; and to extend these expectations to their own suppliers. We also have goals to increase supplier training and assessments, and to understand our suppliers' carbon footprints. We are working with the Automotive Industry Action Group to be able to provide year-over-year progress reporting of supplier training data in a consistent format. In addition, each year we set specific numeric targets for spending with minority- and women-owned suppliers.

Materiality Analysis Recommendations	Response
Materiality context: Stakeholders recommended that Ford provide additional detail on the issues in the upper-right section of the materiality matrix to more clearly define its top-priority issues. Also, a brief description of how "Impact on Ford" (one of the axes on the materiality matrix) is defined would be useful.	We encourage report users to click through the interactive materiality matrix online for more detail on how the upper-right issues are defined, which stakeholders are most concerned with them and how each issue has changed in importance. We have added language to better define "impact on Ford." That language can be found in the overview of analysis section.
Energy resources and other large-scale resource challenges: Consider including a new category for "energy resources" in the materiality matrix. The questions of whether there is enough fuel for future sales growth, what sort of fuel that might be, and what its wider system impacts are, are major strategic issues facing Ford and all automotive manufacturers. While Ford is already taking action in this space, it should be represented in the materiality matrix.	We agree that these are critical strategic trends. Ford is monitoring energy and resources challenges and incorporating insights from that monitoring into our overall sustainability strategy, our water strategy and our low-carbon strategy (represented on the materiality matrix). The low-carbon strategy, in turn, drives our Sustainable Technologies and Alternative Fuels Plan, which is discussed in detail in this report.
Workplace issues: Employee survey results indicate employee satisfaction was 69 percent (up from 62 percent in 2009) – a good trend, but still leaving room for improvement. In spite of high unemployment, there is fierce competition to attract and retain the best and the brightest engineering talent. As such, and given Ford's plans to hire more engineers in the U.S., workplace issues inclusive of health and safety, morale and teamwork should be a higher priority for the Company.	The issues of employee morale and workplace health and safety are already ranked among those of highest priority for Ford. In this report, we have expanded coverage of employee issues, including more detailed discussion of employee surveys and our Company's first survey of hourly employees on health and safety, among other topics. We also provide more detail on leadership development and on programs we're implementing to develop the workforce of the future.
Public policy: In the U.S., there are numerous issues being publicly debated that will impact Ford's business and ability to meet its sustainability commitments (e.g., for renewable energy). Therefore, stakeholders feel that engagement on these issues should be considered a high priority.	The public policy issue of greenhouse gas/fuel economy regulation has been a top priority of both Ford and stakeholders for several years. Our update to the materiality analysis initially suggested that the issue had declined in importance to stakeholders but this input from the Committee confirmed that it should remain in the upper-right portion of the materiality matrix.
Supply chain sustainability: Supply chain sustainability (including resiliency) is becoming a more prominent topic of conversation in boardrooms and executive offices and with investors. The issue is of higher concern than is reflected in the matrix and will likely increase in importance in the years to come.	In this year's analysis, we added the issue of "identifying and managing sustainability-related supply chain risks" to make more explicit an issue that had been implicit in our approach to human rights, environmental performance and conflict minerals. This issue could become even more important in the future, and we will monitor it and consider whether it should be moved to the upper-right section of the matrix.
Ethical business practices: Ford is expanding operations in regions of the world known for significant corruption. Stakeholders recognize Ford has a strong anti-bribery policy, good tools and a robust compliance process in place to address potential corruption, but seek more specific disclosure on what the Company is doing to ensure it is managing the challenges associated with expansion in China and India.	We agree that this issue is increasing in importance for global companies and will consider whether it should move up in importance to stakeholders in future analyses. We have expanded the discussion of anti-corruption and anti-bribery in this year's report in the Governance section.
"Shareholders concerns": The necessity of the category "shareholders concerns/resolutions" is debatable, as each shareholder resolution is likely captured by the issue to which it is related.	We encourage Report users to click through in the matrix for a definition of which stakeholder concerns are represented by the "stakeholder concerns" issue.

Other Committee recommendations will be considered for future reporting.

Data Assurance

Some of the data in our reports have been subject to various forms of internal and third-party verification, as follows.

- Financial data were audited for disclosure in the Ford Annual Report on Form 10-K.
- More than two-thirds of Ford's global facility greenhouse gas (GHG) emissions are third-party verified. In 2011, Ford became a Climate-Registered member of The Climate Registry. All of Ford's North American GHG emissions are now also verified under The Climate Registry. The Climate Registry is a nonprofit collaboration among North American states, provinces, territories and Native Sovereign Nations that sets consistent and transparent standards to calculate, verify and publicly report GHG emissions into a single registry. In addition, all emissions data covered by the EU Emission Trading Scheme (EU-ETS) and voluntary UK Climate Change Agreements are third-party verified. All EU-ETS verification statements are provided to Ford by facility from the BSI for UK facilities, Lloyds for Spain and the Flemish Verification Office for Belgium. North American facilities are verified against the Climate Registry's General Reporting Protocol. European facilities are verified against the EU-ETS rules and guidelines.
- Ford voluntarily reports facility CO_2 emissions to national emissions registries or other authorities in Argentina, Australia, Brazil, Canada, China, the Philippines, Taiwan and the U.S.

- Various environmental data are reported to regulatory authorities.
- Ford's facility environmental data are managed using our Global Emissions Manager database, which provides a globally consistent approach to measurement and monitoring.

The kind of assurance used for each data set is noted in the data charts.

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1. This synopsis draws from a summary of the stakeholder engagement process prepared by Ceres; however, it does not cover every point raised and was not reviewed by the participating stakeholders.

Our Blueprint for Sustainability

At Ford, we define sustainability as a business model that creates value consistent with the long-term preservation and enhancement of environmental, social and financial capital.

Our Strategy › | Materiality Analysis › | Our Value Chain › | Governance ›

Several years ago, the term “Blueprint for Sustainability” was introduced at Ford to describe the actions we are taking to achieve outstanding fuel economy and reduce greenhouse gas emissions from our products. We now use the term more broadly to describe our sustainability strategy as a while, reflecting the fact that our important sustainability issues are part of a complex system that interconnects our products, plants, people and the communities in which we operate.

This section provides an overview of how our business and sustainability strategies relate, how the Company is governing and managing sustainability issues, and how these, together, drive sustainability performance.

We first discuss our business strategy and sustainability strategy and how the two are connected. We also describe the materiality analysis we have used to identify our most significant sustainability issues and focus our strategy and reporting. The section called Our Value Chain and its Impacts provides an updated and expanded value chain analysis, including our efforts to maximize the positive impacts and minimize the negative impacts of our operations and products throughout our value chain. The Governance section explains Ford’s overall and sustainability governance, including how we address human rights and other ethical issues, how we engage with stakeholders and our management of key sustainability issues.

4th year
in a row named as one of the World’s Most Ethical Companies.

Materiality Analysis

For this report, we updated our analysis of what sustainability issues are most material to our business and our stakeholders.

Public Policy

Read detail about Ford’s perspective on key U.S. policy issues, such as human rights and international trade.

Strategy

Ford's business strategy is embodied in our ONE Ford plan. ONE Ford expands on our Company's four-point business plan for achieving success globally. The four-point business plan consists of the following:

- Aggressively restructure to operate profitably at the current demand and changing model mix
- Accelerate development of new products our customers want and value
- Finance our plan and improve our balance sheet
- Work together effectively as one team

Building on this plan, ONE Ford encourages focus, teamwork and a single global approach, aligning employee efforts toward a common definition of success. It emphasizes the importance of working together as one team to achieve automotive leadership, which is measured by the satisfaction of our customers, employees and essential business partners, such as our dealers, investors, suppliers, unions/councils and the communities in which we operate. We have defined a set of behaviors that are expected of all employees to support the ONE Ford plan.

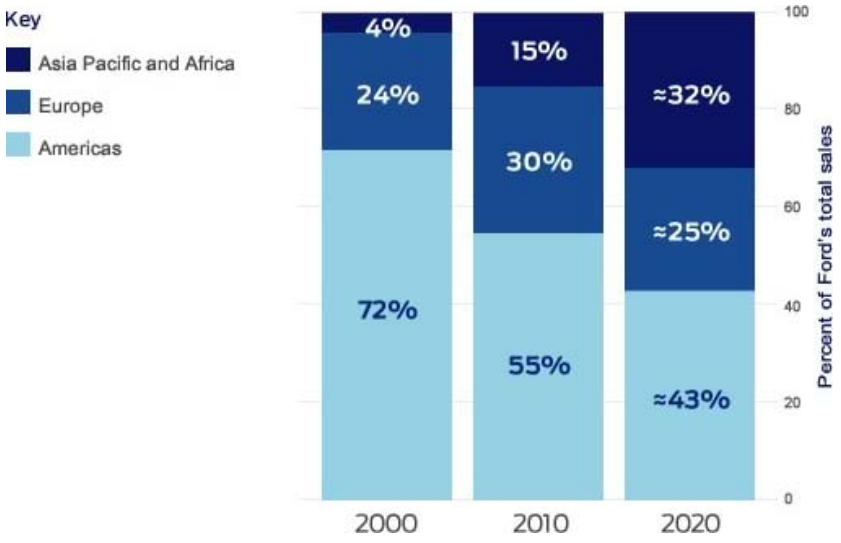
The goal of ONE Ford is to create an exciting and viable company delivering profitable growth for all. We are focused on building:

- Great Products, a full family of vehicles – small, medium and large; cars, utilities and trucks – with best-in-class quality, fuel efficiency, safety and smart design
- Strong Business, based on a balanced portfolio of products and global presence; and
- Better World, accomplished through our sustainability strategy

Our aim is to have profitable growth across geographies and product types (see graphics below).

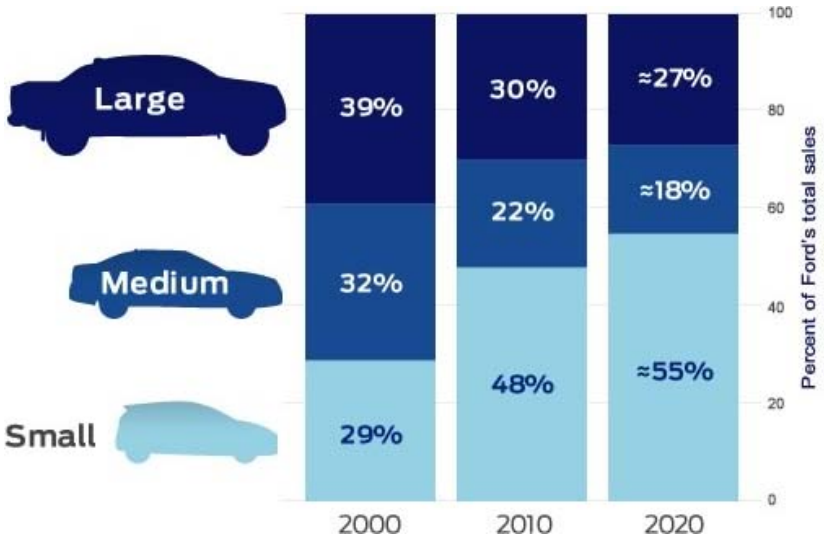
Ford's Changing Geographic Mix of Volume

Volumes grow in all regions, with Asia Pacific and Africa expected to greatly exceed overall industry growth.



Ford's Changing Product Segmentation

Our small vehicle mix will continue to grow, while large vehicles including trucks remain important.



As detailed in the Financial Health section, during 2012 Ford continued its turnaround, fueled by disciplined adherence to the ONE Ford plan. Driven by strong results from Ford North America, we reported total Company full-year, pre-tax profit of $8 billion – our third year in a row of $8 billion or more in pre-tax profits.[1] Ford was the best-selling brand in the U.S., and the Ford Focus was the No. 1-selling vehicle nameplate in the world in 2012.[2]

Our financial turnaround has been based largely on our ability to deliver high-quality, innovative and desirable products everywhere we operate, in both mature and rapidly growing markets. To further our progress, we are continually improving quality and customer satisfaction and anticipating and responding to changes in customer demand. We have aligned our product development, manufacturing and marketing organizations worldwide to deliver the right products to the right markets as efficiently as possible.

Regardless of vehicle or region, Ford's global vehicles showcase our commitment to fuel efficiency. Technologies like EcoBoost®, direct injection of gasoline or diesel fuel, six-speed transmissions, and hybrid and plug-in hybrid powertrains deliver true "power of choice" to drivers everywhere.

As we shift our focus from surviving to thriving, we're continuing to implement the ONE Ford plan. But we also Go Further – to deliver ingenious products, make them available to everyone and serve each other, our customers and our communities. Go Further is our global brand promise and our approach as we accelerate ahead.

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1. Pre-tax profits exclude special items. For additional information, see Ford Motor Company's Annual Report on Form 10-K for the year ended December 31, 2012, on our website.
2. According to R L Polk 2012 Top 10 global registrations.

Sustainability Strategy

Our sustainability strategy is embedded in our business plan and consistent with our aim to deliver Great Products, a Strong Business and a Better World. At Ford, we define sustainability as a business model that creates value consistent with the long-term preservation and enhancement of environmental, social and financial capital.

For more than a dozen years, we have built our sustainability strategy on a foundation of transparency, accountability and stakeholder engagement. We focus our efforts using a materiality analysis, which was updated early in 2013. Our public reporting has been an important part of our commitment to transparency and has helped to drive progress in our Company and across the industry.

Key components of our sustainability strategy that address our material issues include the following:

- Our climate change strategy is based on what needs to happen in the world – the stabilization of greenhouse gases in the atmosphere – and our contribution to achieving stabilization through fuel economy improvements, the use of alternative fuels and energy-efficiency improvements at our facilities. A cross-functional team called Sustainable Mobility Governance oversees the strategy. Please see the Climate Change section for details of our strategy and performance.

- We have set goals for water use and are developing a comprehensive water strategy based on an analysis of risks and opportunities in our own operations and in our supply chain. Please see the Water section for details of our strategy and performance.

- We were the first automaker to recognize that protecting human rights in our operations and our supply chain is an important sustainability issue. Our human rights strategy includes adherence to our Code of Human Rights, Basic Working Conditions and Corporate Responsibility (Policy Letter 24) (pdf, 55b), as well as assessments of alignment with the Code in our operations and by our suppliers. It also includes training and building the capabilities of our suppliers to manage sustainability issues in their operations. Please see the Governance and Supply Chain sections for more information on our human rights strategy and performance.

We take a holistic approach to these and other sustainability issues, recognizing the interconnections between them. Our Sustainability & Vehicle Environmental Matters department oversees sustainability strategy development and implementation by identifying emerging challenges and opportunities and mobilizing resources within the Company to address them and help us remain competitive in a changing world. Our philosophy is that sustainability issues should be integrated into business processes and managed by the organizational functions, just like we do for other key business issues. For example, our work on human rights and environmental sustainability in the supply chain is managed by our Procurement division and forms an important theme in our ongoing partnerships with our suppliers. Please see the Sustainability Governance and Sustainability Management sections and the letter from Robert Brown for more information on these topics.

Our business units have set a series of goals and targets related to sustainability. Our Manufacturing function, for example, develops a yearly scorecard that impacts performance evaluation and compensation for all managers who work in manufacturing. These targets cover performance areas such as safety, energy and water use, and emissions reductions.

Our sustainability strategy, and the pursuit of our related goals, have enhanced our reputation and contributed to the competitiveness of our products, operations and workforce, helping us build social, environmental and financial value.

Materiality Analysis

For this 2012–13 Sustainability Report, Ford conducted an update of our materiality analysis, adding key inputs, replacing outdated inputs and gathering feedback from internal experts. In addition, a Ceres Stakeholder Committee reviewed this analysis and provided feedback. The analysis will be updated again for our 2014–15 report.

In the current analysis, climate change issues remained at the highest level of concern for Ford and external stakeholders. Water and supply chain issues, which rose to the highest level of importance for both Ford and external stakeholders in the last materiality analysis, remained highly important.

In addition, in the two years since our last analysis, some new issues emerged, some dropped out and others were recast or reorganized. Significant changes included the following:

- Financial issues have been at the highest level of importance to Ford and external stakeholders for the past three materiality analyses (spanning six years). This year, for the first time since 2006, financial issues dropped to the mid level of concern for non-Ford stakeholders, moving them from the “top right” box of our materiality matrix to the “middle right” box. This is likely a reflection of Ford’s strong and consistent improvements in financial performance. Nonetheless, financial health remains a critical issue to Ford and a central focus of our overall strategy and everyday activities. Therefore, we will continue to report on it as a highly material issue in this report.

- The governance issue of Ford’s strategy for addressing human rights in our own operations and throughout our supply chain increased to the highest level of priority for non-Ford stakeholders. This was due to increased importance of this issue to communities, investors and customers. This issue was already at the highest level of concern for Ford, but this change moves the issue to the “upper right” box of the material issues matrix. We already report on governance in detail in this Sustainability Report, including Ford’s approach to human rights, and we will continue to do so based on the increased importance of these issues to external stakeholders.

- Water issues were reorganized to reflect water impacts in three key areas: on local communities; from and on Ford operations, and from Ford’s product design decisions. All three of these issues were of the highest concern to Ford and external stakeholders.

- Vehicle safety moved down in importance to stakeholders to a medium level of concern but remained at the highest level of concern for Ford. This likely reflects a view that automakers, including Ford, are managing vehicle safety issues well.

- Supply chain issues, especially those related to the sustainability of raw materials and the environmental and human rights performance of suppliers, remained at the highest level of importance for Ford and other stakeholders. In this year’s analysis, a new category of supply chain issues was added relating to Ford’s approach to identifying and managing supply chain sustainability risks – including raw materials sustainability – and Ford’s process for promoting, assessing and remediating sustainability performance among suppliers.

- Issues associated with Ford’s sustainability strategy, management and governance also increased to the highest level of importance for non-Ford stakeholders, moving this issue to the “upper right” box on the material issues matrix. In our last sustainability report, we reorganized and increased our discussion of Ford’s sustainability strategy, management and governance processes based on informal assessment that these issues were increasing in importance to Ford and Ford stakeholders. This analysis confirms those informal assessments.

Materiality Matrix

Our interactive materiality matrix categorizes issues according to their concern to stakeholders and their current or potential impact on the Company.

Overiew of the Analysis Process

What Is Materiality?

For the purposes of this report, we consider material information to be that which is of greatest interest to, and which has the potential to affect the perception of, those stakeholders who wish to make informed decisions and judgments about the Company's commitment to environmental, social and economic progress. Thus, materiality as used in this Sustainability Report does not share the meaning of the concept for the purposes of financial reporting.

How Was the Analysis Conducted?

To identify and prioritize material issues, we updated the analysis done for our 2010/11 Sustainability Report using a three-step process.

Identification of Material Business Issues

We developed a list of almost 550 issues, grouped into 15 topics. The issues were identified by reviewing Ford business documents as well as inputs from employees, dealers and our major external stakeholders: customers, communities, suppliers, investors and nongovernmental organizations (NGOs). For the Ford analysis, the documents included Ford policies, business strategy and performance tracking tools, and the Annual Report on Form 10-K. To represent stakeholder views, we looked at Ford-specific inputs such as summaries of stakeholder engagement sessions as well as documents that represent stakeholder views more broadly, such as the Ceres Roadmap to Sustainability, reports on consumer trends and attitudes, and reports from socially responsible and mainstream investors.

Assessment of Value Chain Impacts

This year, we added a formal value chain analysis step to our materiality process. We did this to pilot some of the changes to the material issue identification and reporting process proposed in the Global Reporting Initiative's (GRI) draft "G4" guidelines. Though we had previously identified key impacts and impacted stakeholders across Ford's value chain stages, for this report we updated that analysis and integrated it into our material issue identification and prioritization process. First, we mapped our material issues across Ford's value chain to ensure we are considering each issue at all the value chain stages where it has a substantial impact. Then, we assessed which stakeholders are more and less impacted by each issue at each value chain stage. We then gave the stakeholder group or groups that are most impacted by a certain issue across Ford's value chain a higher weight in estimating the overall importance of that issue to non-Ford stakeholders. However, for the final results of our prioritization of issues, described below, we did not apply this new methodology, as the results of both approaches to calculating the overall impact score for non-Ford stakeholders on an issue-by-issue basis were similar.

Prioritization of the Issues

We noted the frequency with which issues were raised in the source documents and rated each issue as low, moderate or high for current or potential impact on the Company in a three- to 10-year timeframe, as well as degree of concern to stakeholders (by stakeholder group). Though we consider possible impacts and importance out to 10 years, three to five years is the timeframe in which Ford can make meaningful changes in our own actions based on our internal planning and production cycles. For each issue, the ratings were averaged separately for Ford and stakeholders (with extra weight assigned to investors and multi-stakeholder inputs, as they are key audiences of our reporting).

The issues and their ratings were then plotted on a "materiality matrix." The y-axis shows concern to stakeholders increasing from bottom to top. The x-axis shows increasing impact to Ford from left to right. "Current or potential impact on Ford" was assessed based on the potential an issue has to impact Ford's financial position; corporate reputation including standing in local communities, social license to operate and consumer perceptions of our Company and products; employee productivity

and retention; and other key impacts.

We consider the issues in the “upper right” sector to be the most material. We do not further prioritize issues within a given box of the matrix as relatively more or less important than other issues in that same box, but we encourage users to click through the interactive matrix to access the detailed descriptions and other context on the individual issues. None of the issues is unimportant; the position of each in the matrix simply represents our understanding of its relative importance to the Company and its stakeholders.

Review of the Analysis

The draft matrix was reviewed internally. It was then revised again after review by a Ceres stakeholder committee that included representatives of environmental and other NGOs, socially responsible investment organizations and a supplier company. Please see the Assurance section for information on how we responded to the Committee’s recommendations.

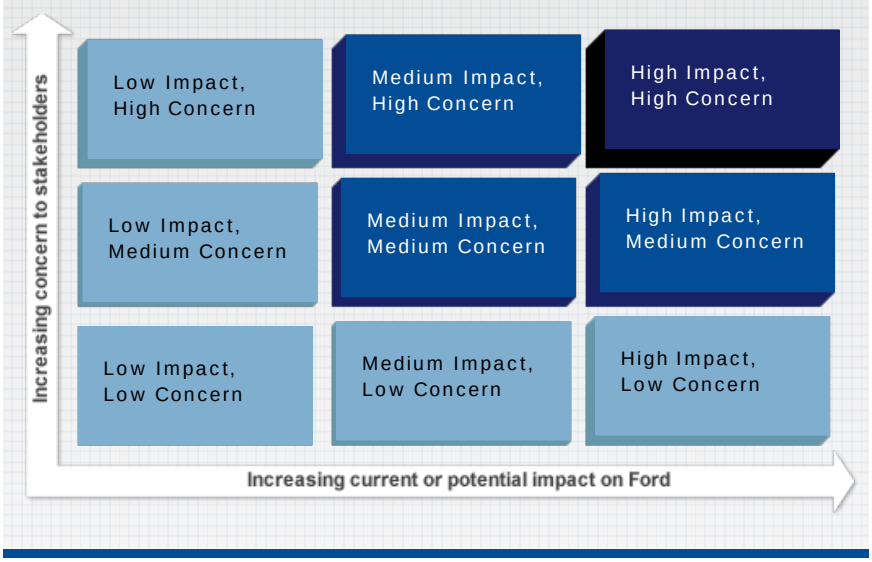
Use of the Analysis

We use this analysis to identify issues to cover in our reporting and as an input to our sustainability strategy development. This analysis, and the methods for conducting materiality analyses generally, are works in progress. Though we undertake an in-depth materiality analysis every two years, we continue to consider material issues and stakeholder inputs informally between formal analyses. We are continually improving our reporting based on the formal and informal assessment of changing issues and stakeholder perspectives. Due to the timing of analysis, reviews and report development, the results of one materiality analysis may not be fully realized in our reporting until the following year’s report.

We work hard to ensure that our materiality analysis and the resulting matrix is comprehensive and precise without being so complicated that it is difficult to understand or apply. However, sustainability issues are not discrete. Rather, they overlap and interconnect in a complex system that is difficult to capture in a list of issues. Analyzing issues by stakeholder group adds depth to our understanding of who is concerned about which issues and why, but in the process of placing them on a two-dimensional matrix, some of that nuance is lost. Finally, an element of subjectivity is inevitable.

We have participated with other companies and organizations in documenting current methods for materiality analysis with the expectation that this will help advance the practice.

Materiality Matrix

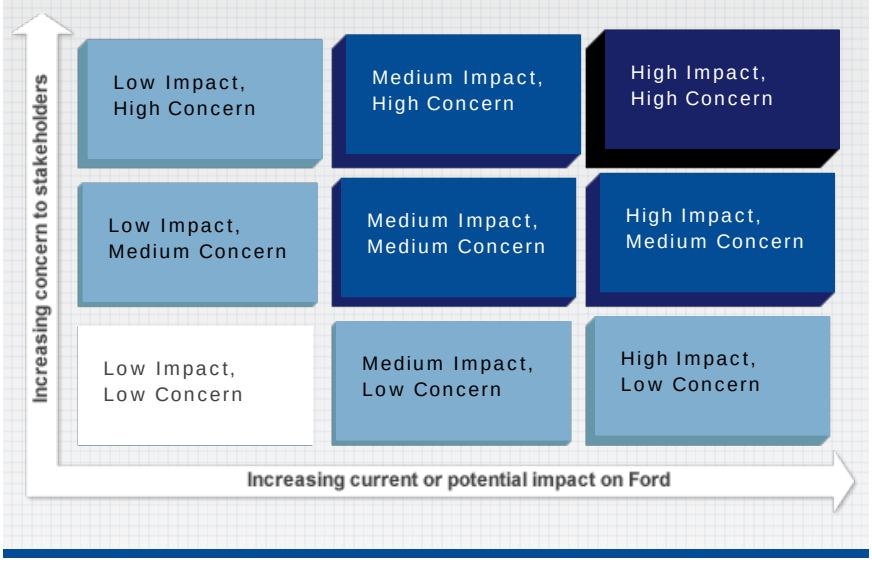


Reporting Priorities

- Issues in this box set the agenda for our sustainability strategy and our printed summary report
- Issues in these boxes set the agenda for the rest of the web report and future reporting
- Issues in these boxes are not currently covered in detail by reporting

Above is our interactive materiality matrix. In it, issues are categorized according to their concern to stakeholders and their current or potential impact on the Company. Click each box to see which issues are categorized within each sector.

Materiality Matrix



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Low Impact, Low Concern

Two material issues have been identified at this level

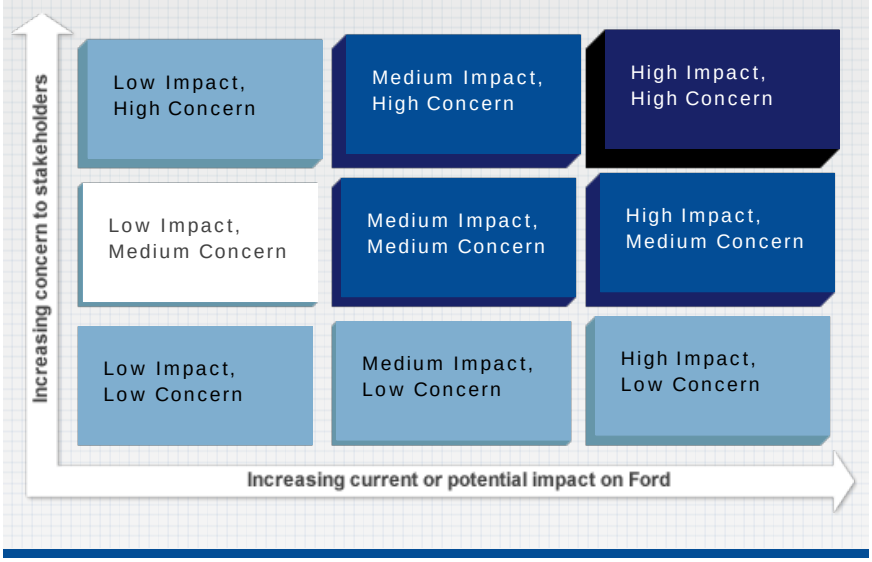
PUBLIC POLICY

- Health care policy

CLIMATE CHANGE

- Emissions trading/cost of carbon

Materiality Matrix



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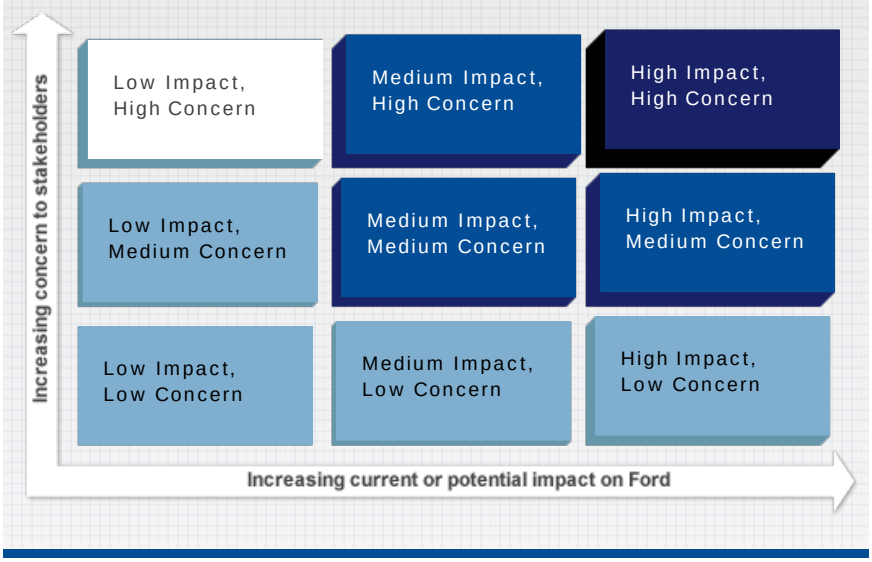
Low Impact, Medium Concern

One material issue has been identified at this level

FORD FUTURE COMPETITIVENESS

- Innovation management

Materiality Matrix



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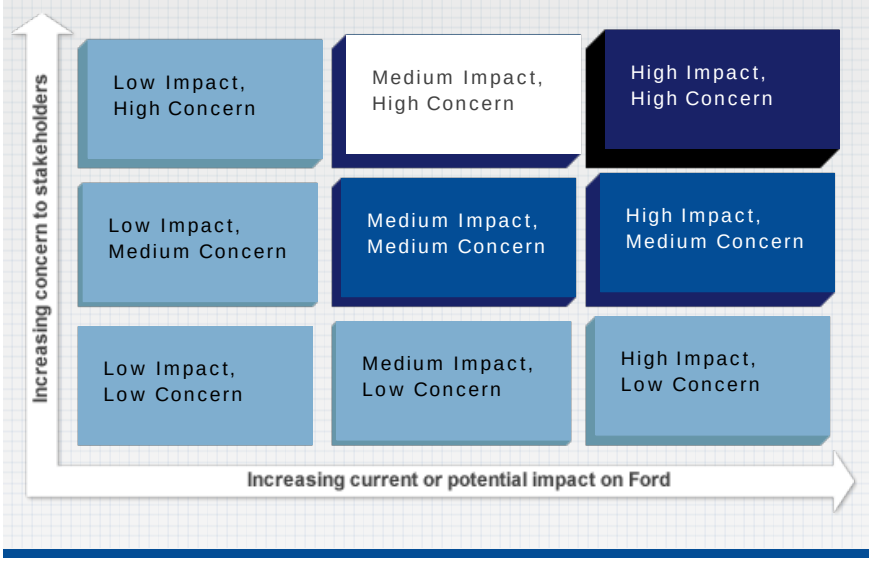
Low Impact, High Concern

No material issues have been identified at this level

Materiality Matrix



Reporting Priorities

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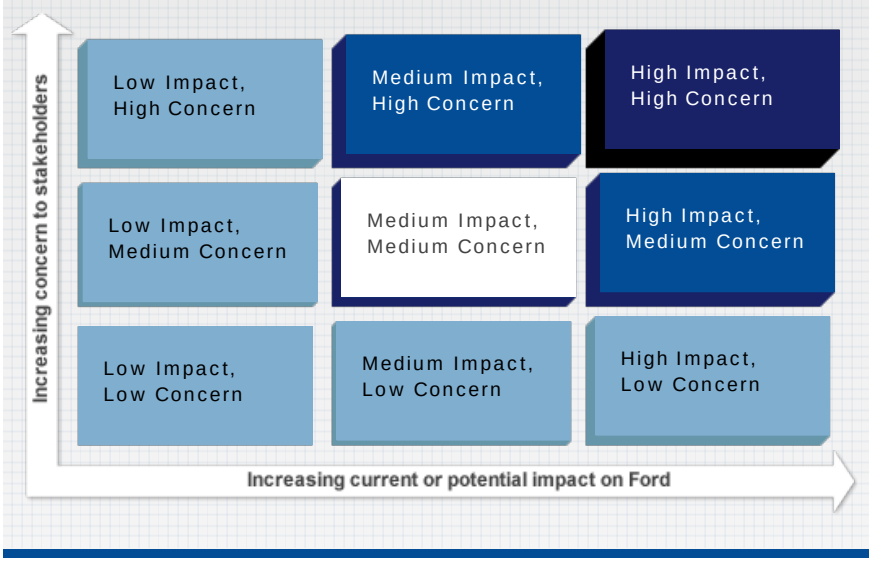
Medium Impact, High Concern

No material issues have been identified at this level

Materiality Matrix



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Medium Impact, Medium Concern

Nine material issues have been identified at this level

PUBLIC POLICY

Political payments and contributions

Definition/Description	Includes need for a consistent and transparent public policy position and concerns about company donations to candidates and campaigns; lobbying costs; employee Political Action Committee; indirect giving through trade associations, etc.
Comments	Stakeholders, including shareholders, remain interested in “political accountability” or transparency around corporate participation in the political process and various forms of corporate political donations.
Trend (from previous analysis)	Same position
More information	Public Policy Policy Letters and Directives

FORD FINANCIAL HEALTH

Supplier viability and competitiveness

Definition/Description	Includes economic viability of suppliers and the importance of supplier viability for Ford’s operations and products as well as communities where Ford and suppliers operate
Comments	Was already at mid-level of concern for Ford in previous

	analyses. Increased in concern for stakeholders in this analysis.
Trend (from previous analysis)	Increased in importance to stakeholders
More information	Creating a Sustainable Supply Chain: Ford's Approach Building Strong Supplier Relationships

OPERATIONS

Energy use and oil consumption

Definition/Description	Operations/facilities: concerns about cost and availability; energy security
Trend (from previous analysis)	Same position
More information	Operational Energy and Greenhouse Gas Emissions

Air emissions (other than GHGs)

Definition/Description	Includes volatile organic compound emissions and ozone-depleting emissions from operations
Comments	Lower level of concern to Ford reflects active and successful management toward targets.
Trend (from previous analysis)	Same position
More information	Non-CO_2, Facility-Related Emissions

Hazardous pollutants

Definition/Description	Hazardous substances in products, manufacturing and supply chain
Trend (from previous analysis)	Same position
More information	Sustainable Materials Non-CO_2 Tailpipe Emissions Non-CO_2, Facility-Related Emissions Waste Management

Land and nature

Definition/Description	Impacts of Ford operations on land and nature including biodiversity
Comments	Increased in importance to Ford largely due to increased relevance of land and nature impacts due to building new plants in the Asia Pacific region.
Trend (from previous analysis)	Increased in importance to Ford
More information	Sustainable Land Use and Biodiversity Green Buildings

Other environmental operational issues

Definition/Description	Includes spills, nuisances (noise), and pre- and post-production logistics
Trend (from previous analysis)	Lower level of concern to Ford
More information	Greening Our Operations

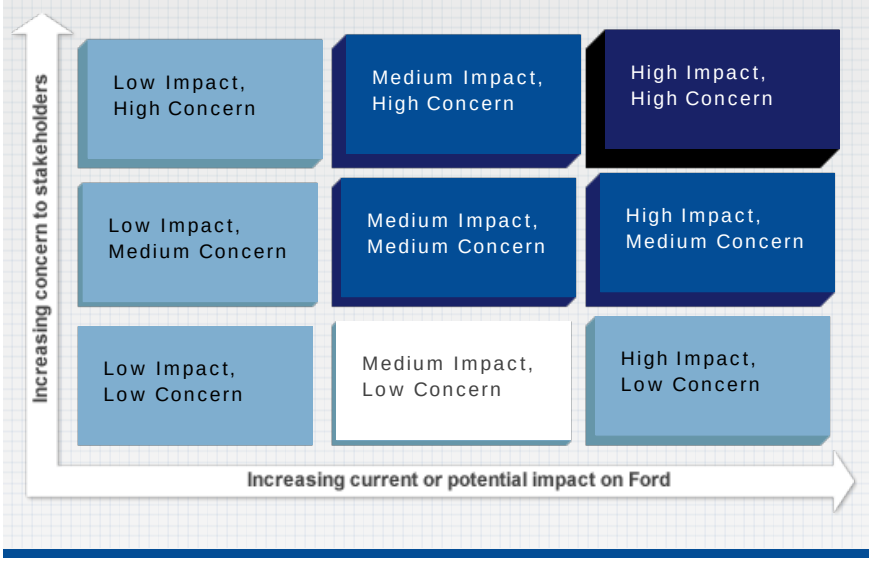
PRODUCT

End-of-life management	
Definition/Description	Includes design for recycling, extended producer responsibility for end-of-life vehicles, and market demand for recycling and recovery of components and materials.
Trend (from previous analysis)	Decreased in importance for Ford, but increased in importance for stakeholders.
More information	Sustainable Materials

GOVERNANCE

Shareholder concerns/resolutions	
Definition/Description	Includes issues related to the Board of Directors and executive management including compensation, board independence, and evaluation of Board performance and effectiveness; issues brought up in past shareholder resolutions; and shareholder engagement.
Trend (from previous analysis)	Increased in importance for Ford
More information	Governance Corporate Governance – Board of Directors

Materiality Matrix



Reporting Priorities

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Medium Impact, Low Concern

Five material issues have been identified at this level

FORD FINANCIAL HEALTH

- Dealer viability and competitiveness

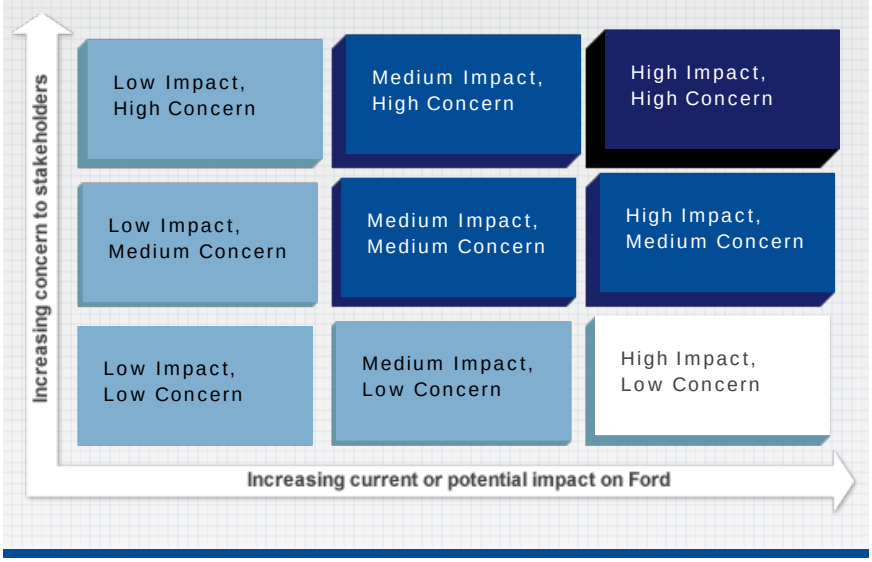
PRODUCT

- Labeling
- Noise
- Vehicle interior air quality

VEHICLE SAFETY

- Emerging market vehicle and road safety

Materiality Matrix



Reporting Priorities

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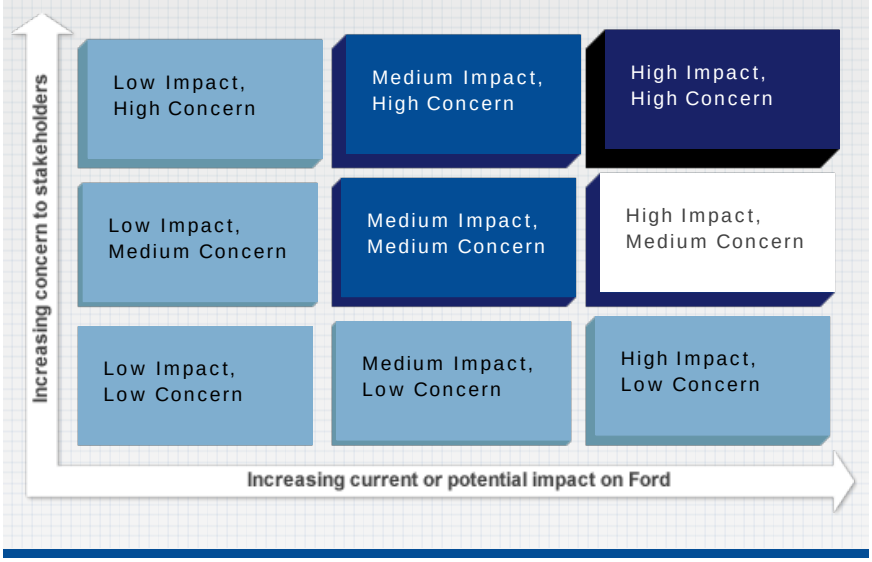
High Impact, Low Concern

Two material issues have been identified at this level

PRODUCT

- Compliance
- Tailpipe emissions

Materiality Matrix



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High Impact, Medium Concern

28 material issues have been identified at this level

GOVERNANCE

Ethical business practices	
Definition/Description	Concerns covered by codes of conduct, e.g., corruption and anti-competitive behavior
Comments	Of increasing interest to some stakeholders, especially in the context of Ford expansion in areas that historically have higher risk for corruption. This issue may continue to rise in stakeholder concern to become an “upper right, most material” issue in future analyses.
Trend (from previous analysis)	Same position
More information	Ethical Business Practices Corporate Governance – Board of Directors Sustainability Governance

PUBLIC POLICY

Global environmental regulation	
Definition/Description	Trend toward greater regulation and the cost of compliance
Comments	Continues to be of high importance to Ford.
Trend (from previous analysis)	Same position

More information	Public Policy Climate Change Policy and Partnerships

FORD FINANCIAL HEALTH

Risk and cost management

Definition/Description	Broad concerns about Ford's financial performance, with a focus on costs and cost-related risks, including health care and retiree legacy costs; operational and regulatory costs; labor costs; commodity, energy and resource supply and costs; and access to capital
Comments	A top concern for Ford and mid-level concern for stakeholders. Added sub-issues on risks associated with raw materials regulations and supply. Also added sub-issues reflecting impact of overall global economic conditions and economic conditions in local markets on Ford's financial health.
Trend (from previous analysis)	Lower in importance to non-Ford stakeholders
More information	Financial Health

Product competitiveness

Definition/Description	Ford's strategy related to products and sales, including product mix, market share and meeting customer demands, including for more fuel-efficient products
Comments	A top concern for Ford and mid-level concern to stakeholders.
Trend (from previous analysis)	Lower in importance to non-Ford stakeholders
More information	Financial Health Product Competitiveness

Manufacturing efficiency

Definition/Description	Includes reducing complexity of products, lean and flexible manufacturing, flexible work rules
Comments	A key element of Ford's ability to respond to changing markets; part of public discussion about aid to automakers.
Trend (from previous analysis)	Same position
More information	Current Financial Health Greening our Operations

Alignment of production with demand

Definition/Description	Ford's realignment of production capacity to lower levels of demand and the shift from trucks and SUVs to cars; supply-base rationalization; managing downsizing
Comments	Same importance to stakeholders, still of highest concern to Ford, particularly because of overcapacity in Europe.
Trend (from previous analysis)	Same position
More information	Financial Health

Quality

Definition/Description	Product quality and customer service/customer relationship management
Trend (from previous analysis)	Same position
More information	Customer Satisfaction and Quality

FORD FUTURE COMPETITIVENESS

Sustainable mobility

Definition/Description	Ford's approach to the increasing challenges of urban mobility, congestion, urbanization and mega cities, as well as rural mobility and economic opportunity
Comments	Added the issue of business opportunities of green vehicles, to better represent the scope of sustainable mobility to Ford and external stakeholders. Also added the issue of viability of public transportation.
Trend (from previous analysis)	Same position
More information	Mobility Solutions Understanding Customer Needs Electrification: A Closer Look

Emerging market product and service strategy

Definition/Description	Ford's approach to emerging markets: infrastructure development; human rights as an issue in growth markets; Ford's impacts/contributions in emerging markets (other than products and services), including local sourcing, pollution, potential for partnerships
Comments	With projected growth in the company's Asia Pacific operations, would have increased in importance for the Company if it was not already at the highest level. Key drivers of the issue include congestion, shifting demographics, urbanization and social equity. Added the sub-issues of increasing importance of urban customers and introduction of green products and operations technologies into emerging markets.
Trend (from previous analysis)	Same position
More information	Financial Health Product Competitiveness Mobility Solutions Ford Around the World

WATER

Operational water use

Definition/Description	Includes impacts on water sources; water management, cost of water and discharges to water.
Comments	Particular concern in areas of water scarcity; issue gaining a higher public profile.
Trend (from previous analysis)	Same position
More information	Progress in Reducing Water Use Case Study: Ford Manufacturing Water Saving Technologies

CLIMATE CHANGE

Cleaner vehicle technologies

Definition/Description	Ford's development of low-carbon technologies, including hybrids, electric vehicles, clean diesel, fuel cells; also emerging technologies such as nanotechnology
Trend (from previous analysis)	Same position
More information	Sustainable Technologies and Alternative Fuels Plan

	Electrification: A Closer Look Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance

Fuel economy

Definition/Description	Increasingly global issue, but particular focus on Ford's U.S. fleet
Comments	Increasingly driven by regulatory requirements as well as Ford's voluntary product CO_2 goal; reduced in importance since last analysis, primarily to NGOs.
Trend (from previous analysis)	Lower in importance to non-Ford stakeholders
More information	Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance Sustainable Technologies and Alternative Fuels Plan

Other climate change issues

Definition/Description	Includes importance of reporting on fuel economy/climate footprint in all markets, reporting on the science of climate change, commitment to work with industry partners and policymakers on climate change issues, and climate change adaptation
Comments	This issue likely increased in importance for Ford and stakeholders in response to the addition of climate change adaptation as an element of this issue in this year's analysis.
Trend (from previous analysis)	Increased in importance to Ford and stakeholders
More information	Climate Change

Clean/alternative fuels

Definition/Description	Includes vehicle and refueling infrastructure issues related to increased use of biofuels, and the lifecycle carbon footprint of alternative fuels.
Trend (from previous analysis)	Increased in importance to stakeholders
More information	Sustainable Technologies and Alternative Fuels Plan Electrification: A Closer Look Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance

OPERATIONS

GHG emissions

Definition/Description	Includes cost of controlling GHG emissions
Comments	Less of a concern than GHG emissions from vehicles; a mid-level concern for Ford and NGOs/stakeholders.
Trend (from previous analysis)	Same position
More information	Operational Energy and Greenhouse Gas Emissions

Waste generation and management

Definition/Description	Includes Ford's operational waste generation, management and disposal
Comments	Increased in importance to Ford in this analysis after increasing in importance to stakeholders in the last analysis.
Trend (from previous analysis)	Higher concern for Ford
More information	Waste Management

VEHICLE SAFETY

Vehicle safety

Definition/Description	Active and passive safety; pedestrian safety; customer interest in and demand for safe vehicles; increasing regulation generally with focus on active safety; challenge of evolving in-vehicle technology
Comments	Developed and emerging market issues differ.
Trend (from previous analysis)	Lower in importance for stakeholders
More information	Vehicle Safety and Driver Assist Technologies

PRODUCT

Lifecycle assessment

Definition/Description	Includes the need for rigorous lifecycle assessment processes
Trend (from previous analysis)	Same position
More information	Design for Lifecycle Sustainability

Environmentally preferable materials

Definition/Description	Cradle-to-cradle approach: use of renewable, recycled and recyclable materials
Trend (from previous analysis)	Same position
More information	Sustainable Materials

Customer privacy

Definition/Description	Ford's management of customer information to maintain customer privacy.
Trend (from previous analysis)	Increased in importance to Ford and stakeholders
More information	Ford Motor Credit Company Policy Letters and Directives

Marketing and communications/demand creation/advertising

Definition/Description	Includes issues associated with Ford's marketing, communications and advertising efforts, including the issue of demand creation for different vehicle types
Trend (from previous analysis)	Increased in importance to Ford and stakeholders
More information	Customers Policy Letters and Directives

WORKPLACE

Workplace health and safety

Definition/Description	Health and safety management systems; ergonomics
Trend (from previous analysis)	Same position
More information	Workplace Health and Safety

Employee morale and teamwork

Definition/Description	Includes issues of employee satisfaction, development, recruitment and retention as well as increasing employee interest in sustainability
Comments	New sub-issues were added in this category, including employee interest in working for a sustainable company and the need to engage employees in sustainability issues.
Trend (from previous analysis)	Increased in importance to stakeholders
More information	Employees

Employee labor practices/decent work

Definition/Description	Ford's employment practices, including wages, wage ratios, benefits, permanent v. temporary positions; training and education; turnover; impact of aging workforce
Comments	High concern to communities and investors.
Trend (from previous analysis)	Increased in importance to Ford
More information	Working Conditions in Ford Plants Policy Letters and Directives

Diversity/equal opportunity

Definition/Description	Diversity of Ford Board and management; harassment programs and monitoring
Comments	Increased in importance to Ford and to investors. Already of high concern to communities and NGOs.
Trend (from previous analysis)	Increased in importance to Ford
More information	Diversity and Inclusion

COMMUNITY ENGAGEMENT

Community engagement

Definition/Description	License to operate, NGO relationships and specific community concerns such as breast cancer, obesity, compliance
Comments	Increasing concern to Ford, lower concern to communities and NGOs in this analysis. However, community interest in specific issues of engagement like water increased in this analysis.
Trend (from previous analysis)	Same position
More information	Engaging with Communities

Community impacts and contributions

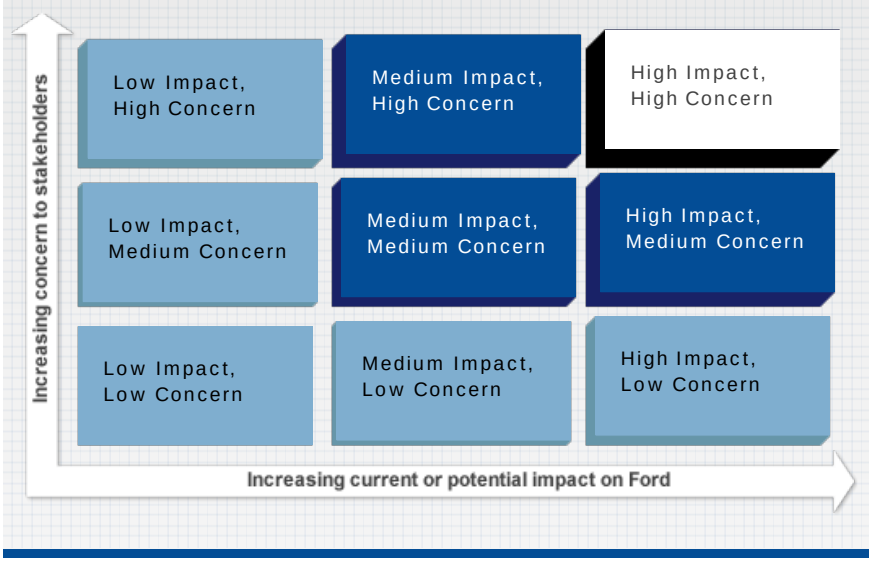
Definition/Description	Encompasses a range of direct and indirect economic impacts, including local hiring and sourcing and philanthropic donations to the community; also local environmental impacts
Comments	High concern to communities.
Trend (from previous analysis)	Increased in importance to Ford
More information	Communities Human Rights in the Supply Chain: Ford's Global Working Conditions Program Financial Health

SUPPLY CHAIN SUSTAINABILITY

Identifying and managing sustainability-related supply chain risks

Definition/Description	Includes Ford's approach to assessing and managing suppliers' sustainability performance, including supplier requirements, assessments/monitoring and remediation. Also includes risks related to raw materials sourcing, such as scarcity/single source, conflict minerals and raw material regulations
Comments	New issue this year; previously embedded in other supply chain topics. This issue was separated from other supply chain topics based on increasing awareness and concern among some stakeholder groups. It may continue to rise in concern for stakeholders and move to an "upper right, most material" issue in future analyses.
Trend (from previous analysis)	NEW
More information	Creating a Sustainable Supply Chain: Ford's Approach

Materiality Matrix



Reporting Priorities

- Issues in this box set the agenda for our sustainability strategy and our printed summary report
- Issues in these boxes set the agenda for the rest of the web report and future reporting
- Issues in these boxes are not currently covered in detail by reporting

High Impact, High Concern

14 material issues have been identified at this level

SUSTAINABILITY VISION AND MANAGEMENT

Sustainability vision, governance and management

Definition/Description	Includes governance structures, goals and indicators, business case, stakeholder engagement, reporting
Comments	Continued to increase in importance to stakeholders since last analysis. Added the sub-issue of linking management performance assessments and compensation to sustainability issues.
Trend (from previous analysis)	↑ Increased in importance to stakeholders
More information	Strategy Sustainability Governance Sustainability Management Stakeholder Engagement

PUBLIC POLICY

GHG/fuel economy regulation

Definition/Description	Regulation of vehicle emissions globally, state-by-state regulation in U.S.; increasing stringency and inconsistency of regulation; challenges posed by lack of U.S. federal climate legislation
Comments	Some decrease in concern for stakeholders on this issue,

	likely due to passage of new national Corporate Average Fuel Economy (CAFE) requirements in the U.S., new EU requirements in Europe and lack of progress on national GHG regulations in the U.S. However, both stakeholder concern and impact on Ford remained high enough to maintain this issue as an “upper right, most material” issue.
Trend (from previous analysis)	Already at the highest level
More information	Climate Change Policy and Partnerships Ford’s Greenhouse Gas Emissions Public Policy Positions

GOVERNANCE

Human rights strategy

Definition/Description	Includes Ford’s policies and practices related to human rights
Comments	In previous analyses, an issue of top concern for stakeholders. It fell to mid-concern in the last analysis but returned to high concern in this analysis.
Trend (from previous analysis)	Increased in importance to stakeholders
More information	Human Rights in the Supply Chain: Ford’s Global Working Conditions Program Working Conditions in Ford Plants

CLIMATE CHANGE

Low-carbon strategy

Definition/Description	Ford’s strategy to reduce carbon emissions from products and operations; goals and targets; use of renewable energy and offsets
Comments	Strongly related to other material issues; of high interest to government and investors and increased in interest to communities since the last analysis.
Trend (from previous analysis)	Already at the highest level
More information	Climate Change Sustainable Technologies and Alternative Fuels Plan Electrification: A Closer Look Operational Energy and Greenhouse Gas Emissions

Vehicle GHG emissions

Definition/Description	Ford’s product actions to meet its carbon dioxide (CO_2) target
Comments	Increasingly driven by regulatory requirements as well as Ford’s voluntary product CO_2 goal.
Trend (from previous analysis)	Already at the highest level
More information	Climate Change Sustainable Technologies and Alternative Fuels Plan Electrification: A Closer Look Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance

Electrification strategy

Definition/Description	Ford’s strategy to deliver electric vehicles to the marketplace and work with partners to address infrastructure and utility interface issues
Comments	Reflects the challenges of transitioning from traditionally fueled vehicles to plug-in vehicles and modest consumer

	uptake of electric vehicles.
Trend (from previous analysis)	Already at the highest level
More information	Sustainable Technologies and Alternative Fuels Plan Electrification: A Closer Look

WATER

Water strategy – local community impacts

Definition/Description	Includes growing recognition of water as a key sustainability issue, including water scarcity and risks, need for water risk assessments, and understanding of linkages between water and carbon
Comments	Reorganized for this analysis to disaggregate the impacts of water issues on communities, Ford operations, and Ford product decisions. Added issue of human right to water.
Trend (from previous analysis)	Already at the highest level
More information	Water Impacts, Risks and Opportunities Operating in Water-Stressed Regions Water Strategy Approach

Water strategy – water impacts of products

Definition/Description	A new issue incorporating the water impacts of different powertrain, fuel and other vehicle technology decisions
Comments	Impacts largely occur at raw materials phase of Ford value chain (e.g., materials for batteries) and use phase (e.g., upstream impacts of fuel production).
Trend (from previous analysis)	NEW
More information	Water Impacts, Risks and Opportunities Operating in Water-Stressed Regions Water Strategy Approach Progress in Reducing Water Use Water Consumption in the Vehicle Lifecycle

Water strategy – water impacts of operations

Definition/Description	Includes impacts on water sources, water management, cost of water and discharges to water
Comments	Particular concern in areas of water scarcity; issue gaining a higher public profile.
Trend (from previous analysis)	Increased in importance to stakeholders
More information	Water Impacts, Risks and Opportunities Operating in Water-Stressed Regions Water Strategy Approach Progress in Reducing Water Use Water Consumption in the Vehicle Lifecycle

OPERATIONS

Environmental management

Definition/Description	High-level environmental operational concerns, including environmental management, environmental compliance
Comments	Continues to have highest importance to Ford, reflecting continued management focus on achieving environmental targets. Increased in importance to external stakeholders since last analysis.

Trend (from previous analysis)	Increased in importance to stakeholders
More information	Greening Our Operations Manufacturing

SUPPLY CHAIN SUSTAINABILITY

Human rights in the supply chain

Definition/Description	Issues covered by Ford's working conditions code; need for industry cooperation
Comments	Increased in importance to investors since last analysis, remains of high interest to communities, suppliers and NGOs.
Trend (from previous analysis)	Already at the highest level
More information	Human Rights in the Supply Chain: Ford's Global Working Conditions Program Sustainable Raw Materials

Supplier relationships

Definition/Description	Includes importance of Ford's financial viability to suppliers and vice versa, and importance of strong relationships as well as the established policies and performance commitments
Trend (from previous analysis)	Already at the highest level
More information	Creating a Sustainable Supply Chain: Ford's Approach Building Strong Supplier Relationships

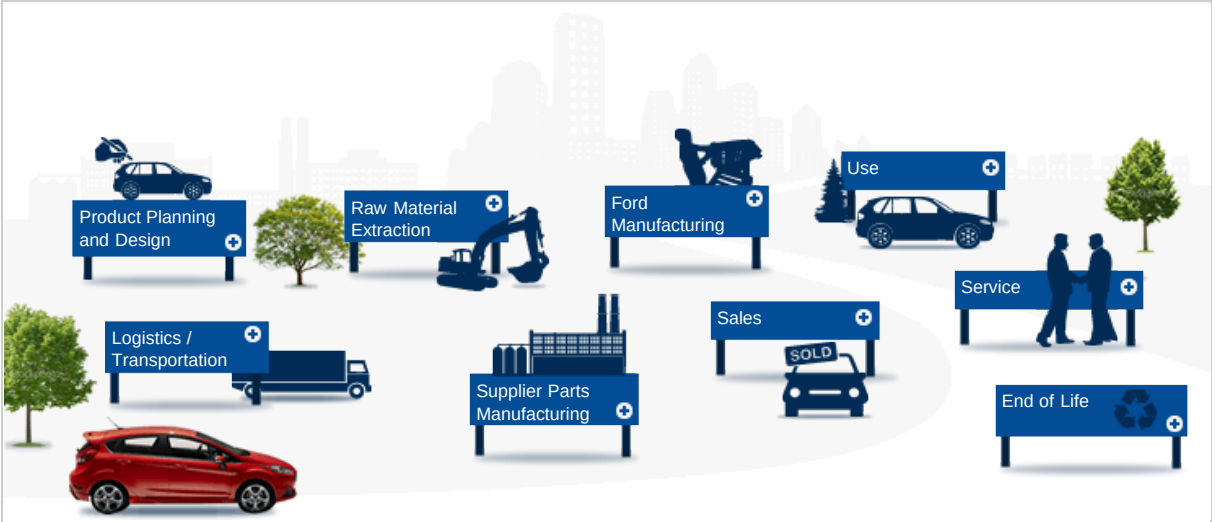
Sustainable raw materials

Definition/Description	Includes issues around conflict minerals, rare earth metals and other strategic materials, and overall impacts of raw material extraction on the environment, communities, geopolitics and Ford's costs
Trend (from previous analysis)	Already at the highest level
More information	Sustainable Raw Materials

Supply chain environmental sustainability

Definition/Description	Includes the need to address carbon and water issues in supply chain relationships
Trend (from previous analysis)	Already at the highest level
More information	Supply Chain Environmental Management

Our Value Chain and Its Impacts



Our Value Chain

As a major multinational enterprise, our activities have far-reaching environmental, social and economic impacts. The graphic below illustrates the major stages of our value chain and identifies key impacts, stakeholders, and examples of value we create at each stage.

We recognize that the issues and impacts are interconnected and that positive and negative effects in one part of the chain can reverberate in the other parts. The value chain assessment was revised and updated for this report as part of the "materiality analysis" which prioritizes the most significant issues in our value chain.

Product Planning and Design

This stage has far-reaching impacts throughout our value chain, as it includes all major decisions about which products we will make, what technologies we will develop and implement, and how and where our products will be made.

Innovation and R&D play a key role in our ability to enhance positive impacts and reduce negative impacts of our products and operations. We also add indirect value and have indirect impacts at this stage based on the decisions we make about products, manufacturing processes, manufacturing volumes, suppliers, etc.

Key Issues/Impacts

- Greenhouse gas (GHG)/fuel economy and other environmental regulations
- Low-carbon strategy
- Energy use/oil consumption and GHG emissions
- Electrification strategy
- Environmental management

In 2012:

We spent

$5.5 billion

on engineering, research and development.

661

U.S. utility patents were issued to Ford and subsidiaries for new technologies and processes we developed.

We launched

25 vehicles

Water strategy
- Sustainability vision, governance and management
- Land and nature
- Waste generation and management
- Tailpipe emissions
- End-of-life management
- Sustainable mobility
- Sustainable materials
- Emerging market products and services strategy
- Alignment of production with demand
- Product competitiveness
- Brand reputation/value
- Quality
- Risk and cost management
- Vehicle safety

Key Stakeholders

- Ford
- Employees
- Suppliers
- Communities

and

31 powertrains

globally.

Raw Material Extraction

This stage can have significant impacts on the communities where extraction occurs. Extraction creates value for raw material suppliers and local communities, through employment and other benefits.

However, it also has significant environmental and social impacts on local communities. We are working to reduce negative impacts from extraction, including addressing issues relating to Conflict Minerals, human trafficking and rare earth elements.

Key Issues/Impacts

- Water strategy
- Supply chain environmental sustainability
- Sustainable materials
- Global environmental regulation
- Low-carbon strategy
- Emerging market products and services strategy

Key Stakeholders

- Suppliers
- Communities
- Ford

Since 2011, we have been asking our global production supply base to report their use of Conflict Minerals by material weight.

We have reduced the use of dysprosium, a rare earth element, by about

50 percent

in our hybrid systems; we expect this will save up to 500,000 pounds of rare earth metals annually.

Logistics / Transportation

This stage includes the transport of parts from our suppliers to our manufacturing plants and of finished vehicles from our factories to our dealerships.

We create value at this stage by providing business and jobs in the transportation and

Since 2006, we have been tracking and reporting transportation- and logistics-related GHG emissions; we now track this for all our regions and report

packaging industries. We also work to reduce emissions and waste associated with parts transportation and packaging. However, transportation causes impacts to local communities and the environment, especially in the areas of emissions, waste, traffic and road safety.

Key Issues/Impacts

- Low-carbon strategy
- GHG emissions
- Sustainability vision, governance and management

Key Stakeholders

- Suppliers
- Ford
- Employees
- Communities

externally for North America, South Africa, India and Australia.

We are reducing our freight emissions by reducing the number of vehicle miles traveled to deliver parts, as well as improving route efficiencies and switching to lower-emission transport methods.

Our European operations use

90 percent

reusable containers, and we are seeking to increase that amount.

Supplier Parts Manufacturing

Supplier parts manufacturing includes our direct suppliers as well as multiple levels of suppliers who provide components to our direct suppliers.

We add value at this stage by providing business to suppliers, which in turn creates jobs, income and investment in communities. We also add value through extensive efforts to improve the sustainability of our suppliers' operations. We also generate indirect impacts at this stage, primarily in the form of environmental impacts of parts manufacturing and social and economic impacts to local communities based on changes in our supplier base and production levels.

Key Issues/Impacts

- Supply chain environmental sustainability
- Ethical business practices
- Human rights in the supply chain
- Environmental management
- Supplier relationships
- Water strategy
- Supplier viability

Key Stakeholders

- Suppliers
- Ford
- Communities
- Employees

In 2012, we spent

$90 billion

with more than 12,700 production and non-production supplier companies globally.

All of our direct suppliers adhere to our requirements on human rights, working conditions and environmental sustainability, as laid out in our Global Terms and Conditions.

To date, more than

80 percent

of our production Aligned Business Framework (ABF) suppliers – which represent approximately 65 percent of our annual buy – have demonstrated that they have codes of conduct aligned with international standards.

As of December 31, 2012, Ford's supplier training programs had impacted

84,710

sub-tier supplier companies and more than

430,200

individual employees at

supplier companies.

Ford Manufacturing

Manufacturing at our own facilities is the heart of our business and is, of course, the value chain stage where we create the most direct value and impacts.

We create value at this stage through employment and investment in the communities where we operate, and through continual efforts to improve the environmental performance of our operations and to ensure human rights and excellent working conditions for our own employees. Our impacts at this stage include the environmental impacts of our manufacturing facilities, as well as the social and economic impacts of our plant operations.

Key Issues/Impacts

- Emerging market products and services strategy
- Environmental management
- Brand reputation/value
- Innovation management
- Emissions and pollutants
- Sustainable mobility
- Energy use/oil consumption
- Health and safety

Key Stakeholders

- Ford
- Employees
- Communities

In 2012, we employed
171,000
people globally.

Also in 2012, we added
8,100
salaried and hourly jobs in the U.S. and
2,470
hourly and salaried jobs in our Asia Pacific and Africa region.

From 2013 through 2017, we expect to spend about
$125 million
on our facilities in the Americas and Europe to comply with stationary source air and water pollution and hazardous waste control standards that are now in effect or are scheduled to come into effect during this period.

In 2012, we contributed
$3.2 billion
in taxes globally.

Also in 2012, we invested
$30.1 million
in local communities through charitable contributions.

Sales

The sales stage includes our communications with customers about our products and the work of our global dealer network.

We add value at this stage by providing customers with products that meet their needs and exceed their expectations, and through the employment and investment generated by our dealerships.

Key Issues/Impacts

- Alignment of production with demand
- Product competitiveness

In 2012, we sold more than
5.66 million
vehicles globally.

As of year-end 2012, our
3,286
Ford and Lincoln dealers in the U.S. employed
189,000

- Emerging market products and services strategy
- Electrification strategy
- Sustainable mobility
- GHG/fuel economy regulation
- Quality
- Low-carbon strategy
- Cleaner vehicle technologies

Key Stakeholders

- Dealers
- Ford
- Customers
- Investors

individuals, with an annual payroll of approximately

$7 billion.

Worldwide, we had

11,619

Ford and Lincoln dealerships as of year-end 2012.

Use

Most of the direct value and impacts of our products occur during the use stage, when they are being driven by our customers.

We add value at this stage by delivering high-quality, fuel-efficient products that make our customers' lives better. We generate indirect value by supporting the vast network of businesses that benefit from vehicle use – from fuel providers and road builders to less-obvious beneficiaries such as the travel and tourism industry. We generate impacts through the environmental and social impacts of our vehicles, including tailpipe emissions and vehicle and road safety.

Key Issues/Impacts

- Vehicle GHG and other emissions
- Global environmental regulation
- Low-carbon strategy
- Environmental management
- Electrification strategy
- Fuel efficiency/economy
- Sustainable mobility
- Cleaner vehicle technologies and fuels
- Public policy engagement
- Quality
- Emerging market products and services strategy
- Alignment of production with demand
- Product competitiveness
- Brand reputation/value

Key Stakeholders

- Customers
- Ford
- Communities

For the 2013 model year, Ford offers

eight vehicles

that get 40 mpg (or MPGe) or better.

From the 2007 to the 2012 model year, we reduced fleet-average carbon dioxide (CO_2) emissions from our new vehicles in the U.S. by

15 percent,

and from the 2006 to 2012 calendar year we reduced the fleet-average CO_2 emissions from our European vehicles by

14 percent.

For the 2012 model year,

93 percent

of Ford nameplates earned a Top Safety Pick from the Insurance Institute for Highway Safety.

In Europe, Ford earned the most Best in Class awards from the European New Car Assessment Program (Euro NCAP), as well as the most Euro NCAP Advanced rewards for advanced safety technologies.

Service

Our dealer network creates value and impacts through their network of vehicle service centers.

We generate direct value at this stage through the employment and investment of dealership service centers, and by working to reduce the environmental impacts of our service processes, such as recycling used parts. We add indirect value by generating demand for replacement parts and other support services, which in turn provide employment and economic benefits.

Key Issues/Impacts

- Sustainable mobility
- Quality
- Brand reputation/value
- Dealership network viability

Key Stakeholders

- Dealers
- Ford
- Customers

As of March 2013, more than

600

dealers in 48 states have participated in our green dealer onsite facility assessment to identify energy- and cost-saving opportunities and become certified to sell our electrified vehicles. More than

200

additional dealers have signed up to undergo this process during the remainder of 2013.

Since 2002, our Core Recovery Program – through which we reuse and recycle parts removed at dealership service centers for use in the production of new Ford vehicles – has saved approximately

120 million

pounds of vehicle waste from being buried in landfills or sent to junkyards.

End of Life

Our vehicles have impacts and value even after they are done with their useful driving life.

We generate indirect value at this stage by supporting the vehicle dismantling, recycling and disposal industries. (Ninety-five percent of the materials in our vehicles can be recycled or reused.) Our vehicles also have impacts at end of life primarily in the form of waste production.

Key Issues/Impacts

- Hazardous pollutants
- Emerging market products and services strategy
- Risk and cost management
- Waste generation and management
- Sustainable materials
- End-of-life management

Key Stakeholders

- Recyclers
- Ford
- Communities

In North America, about

95 percent

of vehicles that go out of registration are processed by a dismantler or scrap metal recycling facility, with approximately

86 percent

of the vehicle by weight recovered for reuse, remanufacturing or recycling.

In Europe, Ford has take-back and recycling networks for Ford brand vehicles in 19 EU markets and participates in collective recycling systems in another 10. All Ford vehicles marketed in Europe are now certified as reaching recyclability of

85 percent

and recoverability of

95 percent.

Governance

To Ford, *governance* includes more than simply fiduciary responsibility to shareholders; the concept also encompasses accountabilities regarding our impact on the world and responsibilities toward a diverse set of stakeholders.

Our sound governance and management systems enable us to operate in a transparent and accountable way and to provide effective oversight of all our operations. Our high ethical standards – formalized in Company policies and demonstrated by managers at all levels – help us translate our aspirations into action. And, importantly, our sustainability-related structures, processes and management systems are integrated into our core business processes.

In 2012, we strengthened our governance systems by enhancing our anti-corruption program. Specially, we increased our global training on bribery, and we began to work more closely with some of our joint ventures – which we do not directly control – to be sure they have appropriate compliance programs in place. We also strengthened the anti-bribery/anti-corruption portions of our Global Terms and Conditions – i.e., our contracts with suppliers – to help ensure that they are doing business ethically.

In 2012 and early 2013, Ford received a number of awards and recognitions for our corporate responsibility and sustainability efforts and governance practices, as noted below.

Awards and Recognitions

In 2013, Ford was honored by the Ethisphere Institute – for the fourth year in a row – as one of the World's Most Ethical Companies. Using in-depth research and a multi-step analysis, Ethisphere reviewed nominations from companies in more than 100 countries and 36 industries.

Also in 2013, Ford was again named by *Corporate Responsibility Magazine* as one of the 100 Best Corporate Citizens in the U.S. This listing ranks companies in seven separate categories – the environment, climate change, human rights, employee relations, corporate governance, philanthropy and financial performance – and then produces an overall weighted average score. Ford ranked 83rd overall, and was listed 15th in the environment category and 25th in human rights.

Ford's additional 2013 recognitions included listing on *Maclean*'s Sustainalytics inventory of the 50 Most Socially Responsible Corporations in Canada, as well as on the FTSE4Good Index Series. The FTSE4Good Index Series includes companies meeting stringent environmental, social and governance criteria.

In 2012, Ford received a Climate Leadership Award from the U.S. Environmental Protection Agency, for "Excellence in GHG Management – Goal-Setting Certificate." The award recognizes companies that have set aggressive, public greenhouse gas reduction goals and are working to achieve them, in addition to other criteria.

In 2012, for the fourth year in a row, Ford was listed among *Newsweek* magazine's "Green Rankings." This list rates companies globally as well as America's 500 largest companies on environmental impact, environmental policies and performance, and reputation among CEOs, social responsibility professionals, academics and other environmental experts. On the U.S. list, Ford ranked 50th overall and 1st in the vehicles and components sector; on the global list, we ranked 107th overall and 5th in the vehicles and components sector.

In 2012, Ford ranked number 15 on Interbrand's list of Best Global Green Brands. The rankings are determined via an analysis of 82 submetrics across six pillars: governance, stakeholder engagement, operations, supply chain, transportation and logistics, products and services.

Also in 2012, Ford was one of two companies honored for "Outstanding Achievement in Low Carbon Transport over the last 10 years" by the Low Carbon Vehicle Partnership (Low CVP) in the U.K. In announcing the award, Low CVP managing director Andy Eastlake said: "The carbon credentials and success of the latest Ford cars show just what can be achieved."

Finally, Ford was also named one of *Fast Company* magazine's "World's Most Innovative Companies" in 2012, and was included in the Dow Jones Sustainability Index North America.

We also won several awards related to diversity in 2012 and 2013. And, our vehicles and engines won several "green" awards.

Sustainability Governance

Upholding high standards of corporate governance is key to maintaining the trust of investors and other stakeholders. In this section, we discuss governance by our Board of Directors and how we set, communicate and enforce these standards to employees. In addition, we discuss how we are integrating sustainability into our organizational structures and business processes, and our approach to sustainability reporting – a key element of our commitment to transparency.

IN THIS SECTION

Governance and Management Structures

Board-Level Governance

Board of Directors

William Clay Ford, Jr., Executive Chairman

Alan R. Mulally, President and CEO

William Clay Ford, Sr., Director Emeritus

Stephen G. Butler*
Kimberly A. Casiano*
Anthony F. Earley, Jr.*
Edsel B. Ford II
Richard A. Gephardt*
James H. Hance, Jr.
William W. Helman IV*
Irvine O. Hockaday, Jr.*
Jon M. Huntsman, Jr.*
Richard A. Manoogian*
Ellen R. Marram*
Homer A. Neal*
Gerald L. Shaheen*
John L. Thornton*

* Independent director

» Committee Charters

Board Committees

Audit
Compensation
Nominating and Governance
Sustainability
Finance

Policy Documents

- Corporate Governance Principles (pdf, 53kb)
- Code of Ethics for Board of Directors (pdf, 34kb)

Related Links

Ford Websites

» Committee Charters

Sustainability Management

Vice Presidents

VP, Sustainability, Environment and Safety Engineering

Executive VP, Manufacturing & Labor Affairs

Group VP, Global Product Development
Group VP, Global Purchasing
Executive VP, Global Marketing Sales & Service and Lincoln

» Find out more about Sustainability Management

Policy Documents

- Code of Conduct Handbook (pdf, 0.99Mb)
- Code of Ethics for Senior Financial Personnel (pdf, 17kb)

Related Links

This Report

» Policy Letters and Directives

Sustainable Mobility Governance

A senior-level team led by the Vice President of Sustainability, Environment and Safety Engineering – responsible for defining our climate change strategy and delivering our sustainability strategy in the marketplace.

Key Business Processes

Business Plan Review	Ford Production System
Global Product Development System	ISO 14001 Certification
Special Attention Review	Order-to-Delivery

Corporate Governance – Board of Directors

Ford's Board of Directors is guided by the Company's corporate governance principles, code of ethics and charters for each Board committee – all of which are publicly available in the corporate governance section of the Ford website.

The Board addresses significant business issues as a full group and through five committees: Audit, Compensation, Finance, Nominating and Governance, and Sustainability. The Sustainability Committee was formed in 2008 from the former Environment and Public Policy Committee, reflecting the evolution of its responsibilities and the Company's challenges and opportunities. The Sustainability Committee charter is available online.

During 2012, nine Directors served on the Sustainability Committee, which is chaired by Dr. Homer Neal, an independent director. Ford's Board of Directors met 10 times and the Sustainability Committee met four times.

The Board's Nominating and Governance Committee considers several qualifications when considering candidates for the Board. Among the most important qualities directors should possess are the highest personal and professional ethical standards, integrity and values. They should be committed to representing the long-term interests of all shareholders. Directors must also have practical wisdom, mature judgment and objectivity. Ford recognizes the value of diversity, and we endeavor to have a diverse Board, with experience in business, government, education and technology, and in areas that are relevant to the Company's global activities.

Under New York Stock Exchange (NYSE) Listed Company rules, the majority of our directors must be independent directors. The NYSE rules also provide that no director can qualify as independent unless the Board affirmatively determines that the director has no material relationship with the listed company. Ford's standards in determining whether or not a director has a material relationship with the Company are contained in the Company's Corporate Governance Principles. Based on Ford's standards, 13 of the Company's current 16 Directors are independent. Two of Ford's Directors are women, one Director is African-American and one Director is Hispanic.

Each Board member participates in an annual assessment of the effectiveness of the Board and the Committees on which he or she serves. We have established a procedure for shareholders to submit accounting and other concerns to independent directors and to send other communications to the Board.

For more information on Ford corporate governance practices, including the principles and policies that govern the conduct of the Board and the members of the Board, please visit our website.

Policy Letters and Directives

At Ford, Policy Letters establish a framework of broad, basic principles within which the Company conducts its business globally. Corporate Directives provide more in-depth information on narrower topics than Policy Letters, and therefore may only apply to a particular segment of the business or specific activities. In addition to Policy Letters and Directives, numerous descriptions of business practices, handbooks, guidelines and statements of business standards govern the conduct of employees globally.

The following are Ford standards with particular relevance to sustainability.

Human Rights

Ford's commitment to human rights is embodied in our Code of Human Rights, Basic Working Conditions, and Corporate Responsibility, which forms the foundation for work within our own operations and our supply chain. This Code articulates our commitments on key human and labor rights issues.

First adopted in 2003 as the Code of Basic Working Conditions, this Code was more formally issued as Policy Letter 24 in 2007. In early 2012, Policy Letter 24 was revised and its title was changed to the Code of Human Rights, Basic Working Conditions and Corporate Responsibility (pdf, 55b).

Policy Letter 24 is based on fundamental elements of internationally recognized labor standards, including the Universal Declaration of Human Rights, International Labour Organization Covenants, the Organisation for Economic Co-operation and Development's Guidelines for Multinational Enterprises, the United Nations' Global Compact Principles, the Global Sullivan Principles, and standards of the Fair Labor Association and International Metalworkers' Federation. Ford encourages businesses throughout our supply chain to adopt and enforce similar policies, and seeks to identify and do business with organizations that conduct business to standards that are consistent with Policy Letter 24. See Setting Requirements for Sustainability Issues in Our Supplier Contracts and Guides for more information.

Policy Letter 24 covers workplace and recruitment issues such as working hours, child labor and forced labor. It also reflects our increasingly integrated approach to managing human rights and community issues by articulating our commitments on several key issues that extend beyond the fence lines of our facilities, including community engagement and indigenous populations, bribery and corruption, and environment and sustainability.

One of the aims of the early 2012 revision to Policy Letter 24 was to develop an implementation plan for the "protect, respect and remedy" framework designed by John Ruggie, Special Representative to the United Nations Secretary General on business and human rights at the international level. Ford is eager to implement many of these recommendations, and we are using the framework to benchmark our own strategies and to integrate the principles into the assessment process. The revised Policy also includes a commitment to work with local, indigenous people on sustainable water use, and language to specifically address human trafficking. In previous versions of Policy Letter 24, Ford has considered human trafficking to be a potential element of "forced labor." However, given the new California law requiring disclosure on supply chain due diligence related to forced labor and human trafficking, we felt it important to make our definition of forced labor and human trafficking more explicit to our suppliers and stakeholders. See Forced Labor and Human Trafficking in Supply Chains for more information.

Finally, Policy Letter 24 – consistent with our Global Terms and Conditions – communicates our encouragement of suppliers to adopt and enforce similar policies for their suppliers and subcontractors. We actively promote and assess implementation of sustainable policies and practices in our own operations and in our supply chain. The performance criteria for assessments of Ford-owned facilities and facilities operated by Ford now address several key community issues and evaluate engagement with members of the local community. The key community issues

include environmental impact, local environmental concerns, social performance, volunteerism, philanthropy, and commitment to all local citizens, indigenous populations and community groups.

We encourage employees who have a good-faith belief that there may have been a violation of this Policy to report it through established channels or to Ford's Office of the General Counsel. These reports are then forwarded to the Manager of Social Sustainability, who takes action to clarify, validate and correct the situation, if necessary. No retaliatory actions are taken against employees who report concerns about violations of Policy Letter 24.

Diversity

We are committed to equal opportunity in all aspects of our business and to fostering diversity in our workforce. Our Policy Letter and Directives relating to diversity address equal opportunity and require that there be no disparate treatment because of race, religion, color, age, sex, national origin, disability, gender identity, sexual orientation or veteran status, and/or other factors that may be covered by local law. We recognize that diversity in our workforce is a valuable asset, and we strive to provide an inclusive work environment in which different ideas, perspectives and beliefs are respected.

Bribery and Corruption

Our Policy Letters and Directives govern integrity within Ford and state that it is our policy to comply fully with the laws of each country in which we do business. Further, no employee may agree to, make or solicit, for their benefit or that of the Company, any improper payments or other improper benefits, directly or indirectly, to or from any government or government agency official, legislator or other government employee or person purporting to represent government agencies. Employees and contract personnel should immediately report through the Company reporting system any requests or solicitations for an improper payment, except in countries where mandatory reporting is restricted.

Political Contributions

Ford's Policy Letter on governmental relationships covers issues relating to public policy and political contributions. These issues are discussed in depth in the Public Policy section.

Customer Satisfaction and Safety

Ford has several policy statements aimed at increasing the quality of our products and promoting the safety of our customers. Our Policy Letter on quality sets the foundation for a process that emphasizes the importance of quality in everything we do and notes that the customer defines quality. It establishes a Quality Operating System and the use of metrics and data to make decisions. Our Policy Letter on vehicle safety sets forth Ford's commitment to design and build vehicles that meet or exceed applicable laws and regulations and to advance the state of the art in safety wherever practicable. We strive for continuous improvement in vehicle safety, which applies to accident avoidance attributes as well as occupant protection systems. This policy requires that we will be demonstrably active and responsible in all areas of automotive safety, including vehicle design and manufacture, operator behavior and the highway environment.

Environment and Employee Health and Safety

Our policies on employee health and safety and the global environment make clear that sustainable economic development is important to the future welfare of Ford and society in general. Protecting these things is an important consideration in the business decisions we make and an integral part of our business planning processes. Our products, services, processes and facilities are planned and operated to incorporate relevant objectives and targets that are periodically reviewed to minimize to the extent practical the creation of waste, pollution, and any adverse impact on employee health, safety or the environment. Protection of health, safety and the environment is a Company-wide responsibility of employees at all levels.

Privacy

The trust and confidence of our customers are important to Ford Motor Company and essential to building long-term relationships and delivering excellent products and personalized services. The Company recognizes that customers, employees and others have concerns about privacy and expect us to protect and handle personal information responsibly.

Ford is committed to implementing responsible privacy and data-handling practices. The Company's Policy Letters and related Directives are designed to ensure the continuing trust and confidence of individuals who entrust us with personal information.

Social Media Interactions

We encourage responsible employee participation in social media – such as Facebook, Twitter and Flickr, as well as blogs and other web-based discussion forums – and have developed a set of "digital participation guidelines" for our employees. A version of the guidelines is available publicly. We also use online training to educate our nonmanufacturing workforce on the guidelines and how they affect their use of social media.

Completed in 2010, the guidelines encourage employees to use social media in a responsible way. They advise employees to be mindful that online communications require the same kind of ethical behavior and honesty that we expect in other external communications. For example, if a discussion relates to Ford or the automotive industry, employees are expected to be honest about the fact they work for Ford. At the same time, employees need to make clear their opinions are their own and they are not official spokespeople for the Company. Conversations should remain respectful and in good taste, just as would be expected in any other medium. Employees should use good judgment in not revealing confidential Company information, including financial information. And, employees should always remember that whatever they say or write is there for all to see, permanently.

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Working Conditions in Ford Plants

Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility, or Policy Letter 24, applies to our own facilities as well as those of our joint venture partners and suppliers. Between 2004 and 2010, we conducted 53 formal assessments of Ford facilities and joint venture facilities. During 2011, we revised Policy Letter 24 and did not conduct any assessments. In 2012, we conducted four assessments, and in 2013, we plan on conducting five.

Sites are selected for assessment by Ford's Sustainability and Environmental Policy, Global Labor Affairs and Supply Chain Sustainability functions based on the sites' impact on our supply chain, emerging issues, and the views of thought leaders, nongovernmental organization representatives and human rights activists.

The process for assessing Ford facilities includes a questionnaire completed by facility management and a detailed review of documents related to the full range of working conditions issues (e.g., collective bargaining agreements, grievance procedure logs, employee hotline records, and health and safety audit reports).

The findings of the questionnaire and document review serve as the basis for interviews with facility management. Where procedures and/or documentation are lacking, or where we feel it would otherwise be valuable, the assessments also include facility visits.

The findings of the assessments are initially shared with human rights organizations with which Ford works and are then published on our website. We have sought the opinions of neutral third parties who have visited plants and/or reviewed the assessment process, and they have agreed that the process is robust and has integrity.

The findings of the past assessments confirmed that Ford's wholly and majority-owned facilities are operating in compliance with Policy Letter 24.

We continue to receive positive feedback from external stakeholders about the policies and systems in place at Ford facilities. While we and our stakeholders have confidence in our systems, we nonetheless believe it is important to continue conducting the assessments given that conditions can change and new issues emerge.

For information on working conditions in our supply chain, see the section on Human Rights in the Supply Chain: Ford's Global Working Conditions Program.

Ethical Business Practices

Our Corporate Compliance Office has a comprehensive program in place to guide compliance with Ford Policy Letters and Directives as well as key legal requirements. The Corporate Compliance Office is part of Ford's Office of the General Counsel. Our compliance program is overseen by a senior management compliance committee and the Audit Committee of the Board of Directors.

The compliance program raises awareness of the Company's commitment to ethical practices, defines corporate practices through Policy Letters and Directives, ensures an infrastructure that allows for the reporting of Policy violations or business-related legal violations through a number of avenues worldwide, oversees the investigation of such reports, conducts risk assessments, and provides training and education on key legal and ethical risk areas. In 2012, we hired an external law firm to assess our entire compliance program.

Our Policy Letters and Directives formally establish expectations for our employees and others working on behalf of the Company, and our Code of Conduct Handbook is the fundamental tool for communicating these expectations. The Code of Conduct Handbook, our chief ethical guidance document, is a compilation of the most important and relevant Policy Letters, Directives and standards for Ford employees. It is available in 14 languages. The online version, available to Company personnel, includes active links to the original source documents, thus providing a single source for the relevant information.

The Handbook outlines requirements for our employees and those working on behalf of the Company and provides background resources for a wide range of business-related situations, including:

- The workplace environment
- Gifts, favors and conflicts of interest
- Use of Company assets and data safeguarding
- Integrity of financial records
- Product quality, safety and environmental matters
- Intellectual property
- Working with governments (political activities)
- Competition and antitrust laws
- International business practices

All nonmanufacturing employees and most contract personnel around the world are required to certify that they have reviewed the Handbook.

To reinforce information contained in the Code of Conduct Handbook, we introduce new mandatory online training courses on a regular basis for our global nonmanufacturing employees and other targeted personnel. The courses focus on ethics, conflicts of interest, gifts and favors – topics on which we have long provided employee training – as well as touching on additional issues that have global applicability, such as bribery. Recent courses have also covered the topic of protecting personal and Company information. A new Code of Conduct online training course was introduced in December 2012. As of April 5, 2013, more than 84,000 individuals, or approximately 84 percent of those invited, had completed the course.

Another component of our compliance program is an infrastructure that encourages and allows for the reporting of any potential violations of our Policy Letters and Directives, and any violations of laws related to the business. Our nonmanufacturing workforce and contract personnel are regularly reminded of their responsibility to report any known or suspected violation of the law or Company policies. There are many ways for individuals to report such violations, including direct communications to a member of one of the control groups – such as the General Auditors' Office, Human Resources, or the Office of the General Counsel – as well as telephone tip lines and email. All of our plants have posters describing how our manufacturing workforce can centrally report. In

addition, nonmanufacturing employees must either report potential conflicts of interest, or attest (annually) that they do not have any conflicts of interest to report.

We assess compliance with our ethical standards through regular legal audits that cover a range of topics relating to legal requirements and internal policies.

Anti-Bribery/Anti-Corruption

Part of Ford's philosophy as a company is to manufacture products close to where our consumers are located. We have 67 plants worldwide[1], and all of the countries in which these plants are located have their own business-related laws, with varying levels of enforcement and differing cultural norms. It's essential to us that we conduct our business according to the highest ethical standards in every location in which we operate, and that we not acquiesce to local norms where those norms do not meet our high standards. We have clear policies in place relating to bribery and corruption, as well as procedures for reporting any breaches of those policies.

In 2012, we took steps to ensure that our anti-corruption program was as strong as possible. For instance, we have increased our global training on bribery. We also worked more closely with some of our joint ventures – which we do not directly control – to be sure they have appropriate compliance programs in place. And, we strengthened the anti-bribery/anti-corruption portions of our Global Terms and Conditions – i.e., our contracts with suppliers – to help ensure that they are doing business ethically. We are undertaking additional enhancements to our anti-corruption program in 2013.

1. This figure includes our consolidated joint ventures.

Reporting and Transparency

External reporting is a fundamental element of accountability. Sustainability reporting not only demonstrates transparency but, in our view, is the basis of organizational learning, demonstrates our values, and both reflects and drives outstanding economic, environmental and social performance. The following are central elements of our reporting strategy.

Materiality

Over the last several years, Ford has sought to increase the materiality and responsiveness to stakeholders of our sustainability reporting. A key part of our reporting strategy has been a materiality analysis, which has been a critical tool in helping shape the content of this report. The analysis is updated every other year, most recently in early 2013. We use the analysis to focus our reporting on those issues determined to be most material to the Company over a three- to ten-year time horizon. This report discusses in detail the issues identified as most material, while also covering other sustainability issues of importance to Ford and our stakeholders.

Assurance

Please see the Assurance section for discussion of our approach to third-party review of this report and data assurance.

External Guidelines

This report is aligned with the Global Reporting Initiative (GRI) G3 Guidelines at the self-declared A application level. Ford has supported and participated in the development of the GRI Guidelines since their inception.

This report also serves to disclose how we are implementing the United Nations Global Compact (UNGC). An index cross-referencing the Compact and relevant sections of this report can be found on the UNGC Index page.

Targeted Reporting

Linked with our efforts to increase the materiality of our reporting, Ford has also taken steps to produce more targeted audience-, location- and subject-specific sustainability communications. For example, we produce an eight-page executive summary (pdf, 1.75Mb), which is provided to employees as a pull-out in the regularly published internal magazine, *Ford World*.

And, beginning with our 2011/12 Sustainability Report, we have increased our coverage of regional issues with regional reports for Asia Pacific and Africa, Europe and South America.

Benchmarking and External Feedback

Ford seeks formal and informal feedback on our Sustainability Report from a number of organizations with expertise in reporting, in addition to the Ceres Stakeholder Review Committee. Other feedback we received can be found in Downloads.

Over the years, our Sustainability Reporting has been recognized for its quality. Ford's 2009/10 Sustainability Report was a finalist in the 2010 Ceres/Association of Chartered Certified Accountants (ACCA) North American Awards for Sustainability Reporting. Our 2008/9 report took second place in this award in 2009, and our 2007/8 report was the co-winner in 2008. Our 2004/5 report placed in the top five. Ceres chose not to host the awards in 2012.

Sustainability Governance and Integration

Like our ONE Ford plan, our overall and sustainability governance remains unchanged despite several significant changes in our senior management team in 2012. Most notably, Mark Fields was promoted from chief of Ford's Americas division to fill the new position of Chief Operating Officer of the Company; Joe Hinrichs moved from head of our Asia Pacific Africa operations to take Fields' place as head of the Americas business; Dave Schoch was tapped to replace Hinrichs as head of our Asia Pacific operations; and Stephen Odell, chief of Ford's European operations, was given additional oversight of Ford's Africa and Middle East business.

Working together with our new senior management team, the entire leadership team and our Board of Directors, we will continue our progress in delivering great products, building a strong business and contributing to a better world by implementing our ONE Ford plan, which is unchanged.

Our goal is to fully integrate sustainability issues into our core business structures and processes, rather than manage them separately. As we build capacity in this area and move toward that goal, however, we recognize that it is also important to establish some sustainability-specific structures and processes.

Structures for Managing Sustainability

The following are the primary structures we use to manage and embed accountability for sustainability within Ford.

- Board and Executive-Level Responsibility: Ford's governance of sustainability issues builds on a strong foundation of Board of Director and senior management accountability for the Company's environmental, social and economic performance. At the Board level, the Sustainability Committee has primary responsibility for reviewing strategic sustainability issues, though some of those issues are also addressed in other committees and by the Board as a whole. Within management, the Vice President of Sustainability, Environment and Safety Engineering has primary responsibility for sustainability issues and oversees the Sustainability & Vehicle Environmental Matters group, the Environmental Quality Office, the Vehicle Homologation & Compliance group and the Automotive Safety Office, as well as having dotted-line oversight over the Sustainable Mobility Technology group (which is formally part of the Product Development function).

- Dedicated Sustainability Function: Ford's Sustainability & Vehicle Environmental Matters group coordinates corporate-wide sustainability strategy and activities, including leading the Company's corporate-level sustainability reporting and stakeholder engagement and integrating sustainability throughout the Company.

- Integration into Core Functions: Numerous functions within the Company have responsibility for some or multiple aspects of sustainability. For example, the Workplace Health and Safety Office, the Environmental Quality Office and the Human Resources Department each manage specific issues that fall under the umbrella of sustainability. As Ford works to embed sustainability more deeply across all functions, groups such as Product Development, Purchasing, Manufacturing & Labor Affairs and Ford Land are taking on an increasing role in the Company's sustainability efforts. For example, Product Development is taking the lead on the Company's sustainable mobility efforts; Global Purchasing is managing sustainability issues in the supply chain, including assessment and training programs associated with our Code of Human Rights, Basic Working Conditions and Corporate Responsibility; and Ford Land and Manufacturing & Labor Affairs personnel are implementing energy efficiency and water reduction efforts in our buildings and plant facilities. In addition, our Marketing function is involved via the "Go Green" Dealership Sustainability Program; our Information Technology group is implementing a PC power management program to help us decrease energy consumption; and our Communications department helped us transition to the use of office

paper with post-consumer recycled content.

- Issue-Specific Structures: Ford has also developed structures to address specific global sustainability issues facing the Company. For example, we have established a Sustainable Mobility Governance Forum – a senior-level team led by the Vice President of Sustainability, Environment and Safety Engineering – responsible for defining our climate change strategy and delivering our sustainability strategy in the marketplace. The Group's strategic direction is provided by a senior executive forum, including Vice President and executive stakeholders, which guides the development of the vision, policy and business goals.

Key Processes for Integrating Sustainability

We believe that integrating sustainability considerations into our existing systems and processes – rather than creating new systems and processes – is the most effective way to embed sustainability into our business. The following are some examples of how we are doing this.

- Business Plan Development and Compensation: In 2012, we continued to align elements of performance and compensation to support our ONE Ford plan. As part of the annual business planning process, Ford's business units develop scorecards to track their performance. Metrics from these scorecards are part of the performance assessment of managers at various levels of the Company and affect their compensation. Executive compensation is affected by the Company's performance in a range of areas, including sustainability. Compensation is awarded based on two basic processes. First is the achievement of individual goals and performance evaluation. Significant elements of an individual's evaluation are based on achievement of performance targets – some with significant sustainability implications, depending on the individual's role. Second, depending on individual performance, employees may be awarded bonuses and other compensation based on Company-wide performance against annually established targets. Sustainability targets are integral to Company-wide achievements and translate primarily into product and financial performance metrics.

- Business Plan Review: Sustainability issues are a formal part of Ford's weekly Business Plan Review (BPR) meetings, one of the key management processes used within the Company. At these regular, frequent meetings, convened by Ford's CEO (and now by Ford's COO), members of the Company's top leadership team review sales, financial, manufacturing and other information to manage global operations and identify issues that are critical to the future of the Company. Each unit also provides an update on performance relative to their individual scorecards. To manage corporate-wide sustainability metrics, Ford has developed a sustainability scorecard, which is reviewed alongside other units' scorecards at the BPR meetings. Also, functions including Manufacturing, Product Development and Purchasing have integral sustainability-specific indicators in their overall performance scorecards.

- Special Attention Review and Automotive Strategy Meetings: Ford's CEO and COO also convene regular Special Attention Review and Automotive Strategy meetings to look in depth at issues identified as potential concerns on any unit's scorecard.

- Corporate Policy Letters and Directives: Ford maintains a comprehensive set of Policy Letters, Directives and other corporate standards that govern all Company activities. Several of these relate to aspects of sustainability, including, for example, Policy Letter 24, the Code of Human Rights, Basic Working Conditions and Corporate Responsibility.

- Management Systems: Ford uses a variety of systems and processes to manage the different aspects of our business, several of which govern or incorporate sustainability issues. For example, all Ford manufacturing facilities and our Product Development function are certified to ISO 14001, the leading global system standard for managing environmental issues. We also require our preferred "Q1" suppliers of production parts to certify their facilities to ISO 14001. In another example, Ford's Purchasing function has integrated assessments of working conditions into its broader process for evaluating suppliers on issues such as quality, cost and delivery (see our Supply Chain section for more).

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Sustainability Management

This section describes our systems for managing sustainability within two of our major business functions – Product Development and Manufacturing – and on the key sustainability issues of environmental and climate change management. (Our systems for supply chain management are discussed in the Supply Chain section.)

IN THIS SECTION

Product Development

The development of our new products starts with an understanding of the consumer: who they are, how they live and what they want in a vehicle. Next comes the identification of advanced technologies and breakthrough ideas by our Research Labs and our Advanced Product Strategy, Advanced Marketing and Advanced Design groups. These and other groups work within an annual planning process to assess the latest developments in technologies and consumer trends to identify the best new technologies and anticipate the needs and desires of the marketplace. Our product cycle plan defines timing for new or updated vehicles and the associated technology applications. Product development engineers, designers and product marketing teams work together to finalize a vehicle concept. Once the business case is approved, our vehicle programs are brought to market using our Global Product Development System, or GPDS.

The GPDS, launched in 2005, merges the best product-creation methods from all of Ford Motor Company's global operations and is refreshed continually with the latest lessons learned as we develop new products. The GPDS provides a common set of milestones and metrics for the development of all vehicle programs across our regional business groups, which increases efficiency and quality.

As a part of this system, and as part of our ONE Ford global integration process, we require all vehicles to meet specific competitive and performance targets at every milestone along the product's development path. These targets consider a wide range of environmental performance criteria, such as fuel economy, recycled materials and substances of concern. For example, our product carbon dioxide emission-reduction goal, coupled with a commitment to class-leading fuel economy, has been translated into fuel economy targets for each new vehicle. Our targets aim to make our vehicles either leaders or among the leaders compared to competitor vehicles in the same segments. We develop these competitive vehicle attribute targets for every vehicle program, to deliver on key customer demands and Ford strategies, by using a range of consumer data, internal brand data and competitor vehicle data. Based on this process, we have committed that every all-new or redesigned vehicle we introduce will be the best in class or among the best in class for fuel economy in its segment. We are following through on this commitment with vehicles introduced in both the U.S. and Europe, and we will continue to do so in future product launches. For examples of 2012 and 2013 vehicles that meet this commitment, please see Vehicle.

In addition, we have identified global leaders and attribute teams within Ford who coordinate the development of the global product attribute targets in key areas such as sustainable materials, recycling, materials of concern, vehicle interior air quality and vehicle lifecycle issues. These leaders coordinate the global implementation of our corporate sustainability strategies and support our ONE Ford strategy to harmonize product development across regions.

We use a Design for Sustainability (DfS) approach to maximize the environmental, social and economic performance of our vehicles early on in the product conception and development process. Our Product Sustainability Index is our primary tool for incorporating DfS principles into our vehicles. For more information on this process please see Design for Lifecycle Sustainability: Product Sustainability Index.

Manufacturing

The Ford Production System (FPS) is a continuously improving, lean, flexible and disciplined common global production system that encompasses a set of principles and processes to drive a lean manufacturing environment. Key elements of the system include effective work groups, zero waste/zero defects, aligning global capacity with global market demand, optimizing production throughput, and using total cost to drive performance.

Each principle has a set of guidelines, or “measurables,” that help us to meet or exceed objectives. The measurables are deployed and tracked for every manufacturing location using the SQDCPME Scorecard, which keeps focus on the vital components of a sustainable business: Safety, Quality, Delivery, Cost, People, Maintenance and Environment. An example of the Scorecard is illustrated below.

Many processes have been put into place to support the FPS and the Scorecard, including SQDCPME metrics, internal process confirmations and FPS Best Practices. The Scorecard is reviewed regularly by management, and progress against SQDCPME targets is a factor in the performance reviews of all managers in the manufacturing chain of command, from site-level managers to Ford’s CEO. Each Manufacturing employee has an annual performance review that is based on objectives that are derived from the Scorecard. Manufacturing’s Scorecard objectives are cascaded through each organization down to the plant-floor-level employee at the beginning of each year, to create alignment on objectives and measures of performance throughout the Manufacturing organization.

Manufacturing is integrated with Product Development in the Global Product Development System (GPDS). Beginning early in a program, the GPDS includes deliverables for Manufacturing that drive a consistent and reliable process through the implementation of such requirements as efficient die construction practices, standard and current bill of process, manufacturing design specifications, modularity and complexity. The standard bill of process allows us to confirm that our operations include all of our global best practices, as well as effective failure mode avoidance and successful process quality control. Manufacturing Engineering utilizes computer-aided, or “virtual,” design for manufacturing, which is aligned with the GPDS milestones, to improve the efficiency and quality of vehicle assembly.

Manufacturing works within the Global Quality Operating System (QOS) to develop, measure and continuously improve robust processes. This work starts early in the product development cycle to ensure that our manufacturing facilities are able to achieve the metrics outlined on the Scorecard. By following the disciplined processes and deliverables of the GPDS, the FPS and the QOS, we are able to continue defect prevention and reduce “things gone wrong” and warranty spending using global design rules and the manufacturing standard bill of process.

Environmental Management

Ford has an environmental Policy and environmental Directives that apply to our operations globally (see our Code of Conduct Handbook (pdf, 0.99Mb)). All Ford manufacturing facilities and product development functions are certified to ISO 14001, the leading global standard for managing environmental issues. In addition, we require our preferred "Q1" suppliers of production parts to certify their facilities. These commitments place our most significant potential environmental impacts under one comprehensive environmental management system.

Ford's manufacturing management team sets environmental targets annually for all of our facilities. We develop these targets through a comprehensive process that considers past performance, future regulation trends, environmental technology advances, financial conditions and other relevant factors. Global targets are translated into regional- and facility-level targets, which differ depending on the relevant regulations and financial and production constraints in each region. Progress against these targets is reviewed regularly by all levels of management.

Ford's Vehicle Operations (VO) and Powertrain Operations (PTO) functions are implementing systems to track and enhance the sustainability of new vehicle and powertrain programs. We are also implementing corporate design specifications for the development of new plants, to make them more sustainable. These specifications require that new manufacturing facilities be designed and constructed using the best practices Ford has developed at plants all over the world. These standards will act to replicate best practices across our global operations and create efficient and sustainable plants.

In 2010, Ford completed the full global implementation of an Environmental Operating System (EOS). As a counterpart to our Quality Operating System, the EOS provides a standardized, streamlined approach to maintaining compliance with all legal, third-party and Ford internal requirements, including government regulations, ISO 14001 and Ford's own environmental policies and business plan objectives and targets. The EOS drives compliance responsibility to the operations level by assigning compliance-related tasks to the appropriate personnel and tracking the completion of those tasks. The system also standardizes tracking and reporting systems, which simplifies compliance, reporting and analysis at all levels of the Company. This system allows us to manage an ever-increasing range of external regulations and internal performance objectives more effectively and with fewer resources. For example, the average plant has to comply with approximately 90 corporate requirements, 100 to 400 national regulations and 200 plant-specific requirements. The EOS consolidates all of these requirements into easy-to-follow tracking and reporting systems organized by recurring tasks, nonrecurring tasks and critical tasks. The EOS is fully aligned with the Ford Production System.

Ford has moved to a single group ISO 14001 certification for its plants in North America. All plants and Ford Customer Service Division facilities in North America share this group certification. Likewise, South American plants share a single group certification, as do European plants. Group certification saves time and money, with no degradation in plant environmental performance.

Ford continues to use the Global Emissions Manager (GEM) database, which provides a globally consistent approach for measuring and monitoring environmental data. This system helps us track our efforts to reduce water consumption, energy use, carbon dioxide emissions and the amount of waste sent to landfill. The data that GEM provides and the level of analysis it allows also helps us set more effective environmental management targets and develop more specific strategies for improving environmental performance. We are continuing to add metrics and tracking systems to GEM to further enhance our environmental management objectives.

For more information on our new plant development standards please see Green Buildings. For more information on our plans to develop new plants in Asia, please see Focus on Asia.

Climate Change Governance

The climate change issue is managed through governance systems at all levels of the Company. The Sustainability Committee of our Board of Directors regularly reviews Ford's actions related to climate change.

Our plans for addressing climate change – whether relating to our products, facilities or policies – are highlighted and agreed to at the highest levels of Ford's executive management through the Business Plan Review process. Related emerging issues are reviewed as needed in Special Attention Review meetings.

In addition, strategic product direction related to climate change goals is provided by a senior executive committee, made up of vice president and executive stakeholders, who guide the development of the vision, policy and business goals. (See Governance and Management Structures.)

Related executive planning teams are responsible for developing detailed and specific policy, product and technical analyses to meet objectives. These teams base their plans on scientific data and promote actions that will help achieve the Company's environmental ambitions, recognizing the need to use a holistic approach to effectively protect the environment. Metrics have been established and are reviewed regularly to ensure satisfactory progress. We have also developed strategic principles to guide our approach.

Public Policy

Every day, government officials around the world make decisions that impact Ford. As a global automotive company, it is important that we have a voice in policies that affect our business in the countries in which we operate, and that Ford be recognized as a credible, leading source of information as those policies are formulated. Across a range of issues – including manufacturing, climate change, energy security, human rights, trade, education and vehicle safety, among others – we strive to shape policies that are economically, environmentally and socially sustainable for Ford and for the world. Informed policy makes for better policy, whether at the international, national, regional, state or local level. The Ford policies discussed in this section are outlined in our Code of Conduct Handbook (pdf, 0.99Mb), which applies to Ford globally.

Participation in the Policy-Making Process

Ford seeks to be an active participant in the political process in a manner that is transparent and supports our business interests. On issues of highest priority for us, we stay in regular contact with legislators and regulatory officials in our major markets, to share with them our interests and perspectives and offer expert input into the policy-making process. Our Government Affairs office oversees these lobbying activities.

Membership in Coalitions and Associations

Ford belongs to a broad range of partnerships and coalitions, as well as industry and trade associations (such as the Alliance of Automobile Manufacturers), that lobby in the legislative and regulatory realms on behalf of their members. Working with others in these types of organizations enables Ford to better leverage our resources on issues of importance to us and to develop and promote policies that have potentially far-reaching benefits for industry and society.

Of course, we do not always agree with every position taken by these organizations. In cases where we don't agree, we have to determine if, on balance, we agree with enough of the organization's positions that we should continue to engage with them. And, we always reserve the right to speak with our own voice and make our own positions clear, even when they may not align with the positions of associations to which we belong.

Ford Policy on Political Contributions

Ford Motor Company does not make contributions to political candidates or political organizations, nor otherwise employ Company resources for the purpose of helping elect candidates to public office, even when permitted by law. Nor do we take positions for partisan political purposes – that is, specifically for the purpose of advancing the interest of a political party or candidate for public office. These policies remain unchanged, notwithstanding the U.S. Supreme Court's January 2010 decision that loosened restrictions on corporate independent expenditures.

With proper executive approval, Ford may contribute to support or oppose a U.S. state or local ballot proposal, if such contributions are permitted by law and if the issue is of significant interest or importance to the Company. Information with respect to contributions made in connection with ballot questions and referenda is publicly available through the appropriate local or state reporting authorities.

We do encourage employees to participate in political and governmental affairs and recognize that Company efforts and programs to encourage employee participation must respect fully the right of employees to use personal time as they choose, and decide the extent and direction of their political activities. The Ford Motor Company Civic Action Fund (the "Ford PAC"), which is supported by voluntary donations from Ford employees, gives campaign contributions to national, state and local political candidates from both major political parties in the U.S. The Company pays the solicitation and administrative expenses of the Fund, which are minimal, as permitted by law.

All contributions made to the Ford PAC and all distributions from the Ford PAC are in compliance with Federal Election Commission (FEC) and applicable state regulations. A list of the Ford PAC's contributions made during 2012 can be found at the FEC website.

Decisions about political contributions by the Ford PAC are made by Ford's Governmental Affairs office, in accordance with business objectives that support our competitiveness in the global automotive industry. Ford PAC contributions are used to support issues directly related to manufacturing and Ford business objectives. All Ford PAC candidate contributions in excess of $3,000 must be approved by the Ford PAC Political Contributions Committee, an eight-member, cross-functional group of Ford employees representing a range of organizational levels.

Ford complies fully with all laws and rules governing our employees' interactions with officials at all levels of government (federal, state and local). Furthermore, all of our contact and dealings with

government officials must not only comply with all applicable laws, but also with our global corporate Policies and Code of Conduct. Note that under federal law, foreign nationals are prohibited from making contributions in connection with any U.S. election and are thus not eligible to join the Ford PAC.

Public Policy Positions

This section summarizes Ford's positions on key public policy issues currently under discussion in the U.S. Two important topics are not addressed here: Climate change policy is discussed in the Climate Change Policy and Partnerships section, and policy regarding sustainable raw materials is discussed in the Sustainable Raw Materials section.

ON THIS PAGE

Non-CO_2 Tailpipe Emissions

In the U.S., the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate smog-forming tailpipe emissions, including hydrocarbons, nitrogen oxides, carbon monoxide and particulate matter. California finalized Low Emission Vehicle III standards in 2012, and the EPA is expected to issue Tier 3 emissions and fuels standards in 2013.

We will continue to work with the agencies through their regulatory processes to help develop rules that are both effective and feasible. In setting tailpipe emission regulations, consideration of other vehicle rules such as fuel economy and greenhouse gas standards and safety standards must be taken into account to ensure that the total package of requirements is workable.

Ford continues to oppose technology mandates that seek to impose quotas or limits on the production or sale of vehicles with specified powertrain technologies. Regulatory efforts to dictate market outcomes, or to pick technology "winners" and "losers," have never produced a successful outcome. Manufacturers need the flexibility to build the kinds of vehicles that the marketplace demands based on consumer preferences and other external factors. Emissions standards should be performance-based and should be designed to enable manufacturers to introduce vehicles with an array of different, affordable technologies.

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Undesirable Chemicals

The European Union's REACH program (Registration, Evaluation, Authorization and restriction of CHemical substances) regulates and seeks to phase out chemicals of concern. More and more countries are adopting similar regulations. Turkey and Romania adopted their own versions of REACH in 2009; China adopted a version in October 2010. In 2011, Japan also adopted REACH-like regulations to manage their chemicals. South Korea will adopt REACH regulations in 2013 and will begin implementation in 2015.

In the U.S., the Senate and House both proposed bills in 2010 to overhaul the Toxic Substances Control Act, which was first enacted in 1976. The state of California is in the process of finalizing a "Safer Consumer Product (green chemistry)" law, scheduled to take effect in 2013, which will

require manufacturers of selected products sold in California to identify safer alternatives to a potential range of 1,200 chemicals known to be harmful to public health and the environment. The California law will also phase in a requirement that manufacturers whose products contain listed chemicals of concern must conduct an alternative material assessment and replace the chemicals of concern with safer alternatives, or explain to state regulators why the chemicals of concern are needed and warn consumers or undertake steps to mitigate the public's exposure to those substances.

In January 2009, the United Nations implemented regulations requiring a globally harmonized system (GHS) of classification and labeling of chemicals. In the U.S., implementation of the GHS requirements starts with employee training, which must be completed by the end of 2013. By June 1, 2016, employers must be in full compliance with the revised Hazard Communication Standard (HCS), including complete training of employees on new hazards and/or revisions to workplace hazard communication programs.

We believe that regulatory requirements for the phase-out of undesirable chemicals need to be prioritized and implemented in a workable manner. Government and industry resource constraints mean that not all chemicals of concern can be addressed at once. Moreover, manufacturers and suppliers need adequate lead-time to identify replacement substances that are more environmentally friendly than the ones they replace, and also to design and engineer components that incorporate these new substances. Ford will continue to work with regulatory agencies to help develop rules that target the highest-priority chemicals first, and that drive steady progress toward the elimination of chemicals of concern in an effective and efficient manner.

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Manufacturing Policy

Manufacturing is essential to local, regional and national economies. Manufacturing provides jobs and tax revenue, creates new products and technologies and promotes overall prosperity. About 70 percent of all the research and development investment in the U.S. comes from the manufacturing sector. We believe that a strong manufacturing base – with its attendant focus on engineering, science and technology innovations – is important not only for national prosperity but for energy independence, energy security, national defense and sustainability.

Government is a key stakeholder in helping shape the competitive climate on which the auto industry depends. U.S. policy makers can work together to support manufacturing by shaping a climate for economic growth, regulatory certainty and a strong foundation for U.S. exports. Integrated elements of a competitive U.S. manufacturing agenda include the following:

- Corporate tax reform: The U.S. has the highest corporate tax rate among developed countries. A lower rate frees up capital that can be reinvested in new products, technologies and manufacturing innovation.

- Regulatory efficiency and certainty: We need a performance-based, data-driven approach to regulation – especially as we develop emerging technologies such as vehicle-to-vehicle communications and driver assist features. We need efficiency in the regulatory process that provides certainty and avoids a patchwork of state regulations that can undermine efficiency – often with no societal or environmental benefit. When multiple regulators exist, we need to work together to ensure that we ultimately develop standards that are achievable and consistent with one another so that compliance costs are minimized.

- Trade: Ford has supported every free-trade agreement approved by the U.S., and Ford is the leading vehicle exporter in the U.S. We support strong free trade policies – enabling market access and prohibiting currency manipulation. In addition, trade agreements also can help shape and harmonize regulations. A U.S.–E.U. trade agreement that pursues regulatory harmonization and mutual recognition of standards would enhance both regions' competitiveness in today's global marketplace.

- Training and education: We need to continue training our workforce and encourage education in math, science and engineering if the U.S. is to remain competitive and innovative. In our hourly workforce, continued "up-skilling" is critical to maintaining our competitive performance. Existing federal training programs should be flexible, work closely with states, and prioritize incumbent worker training.

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Vehicle Safety

At Ford, safety is one of the key principles that inform and guide our every design and engineering effort. We are committed to continuous improvement in vehicle safety; we are also actively involved in driver education and efforts to promote safer roadways. Ford will continue working with governments and the public to help further reduce auto accident and fatality rates, which reached historic lows in 2011. (Early estimates from the U.S. National Highway Traffic Safety Administration project that traffic fatalities in 2012 increased as the U.S. economy continued to recover.)

At Ford, we take our commitment to safe driving seriously and recognize that driver distraction is a very important safety issue. Extensive research shows that manually operating electronic devices that are not integrated into the vehicle can divert a driver's eyes from the road and cause drivers to take their hands off the steering wheel, increasing the risk of a crash substantially. That is why Ford pioneered the use of hands-free, voice-activated technology to help drivers keep their hands on the wheel and eyes on the road. It is also why Ford was the first automaker to support a national ban on the use of hand-held devices while driving; we also support graduated driver license programs that restrict cell phone use and text messaging by new drivers, as discussed below. We go further by educating young drivers across the country on the serious dangers of distracted driving. And we try to lead by example; Ford has a corporate policy prohibiting the use of hand-held mobile devices while driving Company-owned vehicles.

Ford is rapidly expanding its research on connected vehicles that can wirelessly talk to each other, when appropriate, to warn of potential dangers, to enhance safety and identify impending traffic congestion for more efficient driving. Ford participates in field tests in the U.S. and Europe to aid in the development of these next-generation vehicle-to-vehicle and vehicle-to-infrastructure communication technologies. We are also working closely with governments, standards organizations and other automakers globally to develop harmonized standards around the world to help deliver these technologies as quickly and affordably as possible.

Ford strongly supports Graduated Driver Licensing (GDL) programs in the U.S. as a means of helping to reduce crashes, injuries and fatalities involving novice teen drivers. The most effective GDL programs require a minimum learner permit age of 16, an intermediate license until age 17, and at least 65 hours of supervised training, in addition to prohibiting night-time driving after 8pm and banning all teenage passengers for intermediate drivers. Although all U.S. states have adopted some level of GDL requirements, some have adopted all elements of GDL while others have chosen to adopt only selected portions. Ford encourages all states and the District of Columbia to adopt maximum GDL program requirements, including information on safety belt use and the dangers of impaired and distracted driving.

See the Vehicle Safety and Driver Assist Technologies section for more on our vehicle safety technologies and activities.

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Human Rights

Ford is committed to respecting human rights everywhere we operate, because it is the right thing to do and it strengthens our business in the long run. We are a leader in addressing human rights and working conditions in the auto industry.

In 2008, Ford joined the United Nations Global Compact, a framework for businesses committed to aligning their operations and strategies with 10 universally accepted principles in the areas of human rights, labor, the environment and anti-corruption.

And for several years, Ford has worked with leaders of the U.S. Department of State's human rights programs and the U.S. Department of Labor to explore how to encourage multinational companies to act as a positive force in protecting human rights in global trade, both through work in their own supply chains and through advocacy. We have also consulted with these agencies on how the U.S. government can encourage the protection of human rights through its purchasing practices.

Several states have passed local legislation to prevent human trafficking, and we are watching for a federal regulation. Ford supports the underlying goals of human rights legislation, and where appropriate, Ford is participating in sector-specific initiatives and with international organizations to systematically evaluate supply chains to determine the most effective measures to combat human rights violations.

For more on our commitment to human rights, see Human Rights in the Supply Chain.

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International Trade

As a global automaker, Ford has a strong interest in issues relating to international trade. With manufacturing facilities in the Americas, Europe, Asia Pacific and Africa, sales in all key global markets and a global supply chain that moves parts worldwide, we are a strong supporter of trade liberalization. In fact, free trade is foundational to our business model.

Ford has supported every free-trade agreement (FTA) ratified by the U.S. government since the U.S. first began free-trade negotiations in the mid-1960s. In fact, the auto sector is the largest exporter of goods in the U.S., and Ford is the largest exporter within the sector.

To further increase U.S. exports and support American jobs, we believe a new approach to trade is required that puts U.S. manufacturing at the forefront. Given the importance of manufacturing to the U.S. economy, Ford supports a manufacturing-driven trade strategy that:

- Drives innovation and delivers economic opportunity to its citizenry by maintaining a vibrant manufacturing sector as its cornerstone
- Enables U.S. manufacturing to compete on a level playing field against the best competition from around the globe

Finally, we believe the elimination of trade-distorting policies such as currency intervention and manipulation must be considered a key pillar of any trade initiative. Currency manipulation provides foreign automakers with an export subsidy of several thousand dollars per vehicle, while at the same time acting as the ultimate nontariff barrier, protecting their market from imports. Ford believes the market should set currency exchange rates – not governments.

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Education

Ford understands that global competitiveness depends on the ability of our K-12 educational systems and post-secondary institutions to prepare a 21st century workforce. With baby boomers beginning to retire in large numbers, and many high-skilled jobs going unfilled, improving the quality and performance of our schools has become an urgent issue facing communities large and small across the country. Within these communities, too many students are disconnected and unsuccessful in schools that struggle to be as engaging and relevant as they need to be. Add to that the considerable anxiety being generated by an economy in transition – from industrial- to knowledge-based – and education emerges as a critical factor in securing financial health and prosperity for individuals, communities and the nation.

Ford recognizes the importance of these issues and supports public policies and initiatives that are designed to mobilize educators, employers and community leaders to bring communities together to transform the entire educational system. These programs provide students with real-world learning opportunities that help them:

- Develop essential higher-order skills, such as critical thinking, problem solving, communication, innovation and creativity
- Make connections between the academic subjects taught in the classroom and their application in the real world
- Make meaningful connections to higher education
- Build more sustainable communities by involving local business and community organizations to create service-based academic projects that make learning more applicable to real-world situations and positively impact the community

By helping communities address this most critical challenge, Ford continues its long tradition of leading and supporting educational initiatives that empower students, strengthen communities and benefit the U.S. economy. See the Investing in Communities section for more information on the programs we support.

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Electrification

As advanced technology vehicles – such as hybrids, plug-in hybrids and all-electric vehicles – emerge onto our highways and roads, manufacturers must work together, and with governments as appropriate, to set standards for certain technical aspects of these new vehicles, to enable the market for them to proceed forward smoothly.

Consider, for example: When we go to a gas station, we take for granted that the pump nozzle is a size that will work with our vehicle. Early on, a standard size and configuration had to be developed and agreed to across all automobile and gasoline pump manufacturers, so that drivers could have a hassle-free experience when they went to fill up. As demand for and availability of plug-in electric vehicles continues to rise, it is similarly important that consistent standards be put in place regarding the technical aspects of these vehicles.

In North America, the Society of Automotive Engineers (SAE), with Ford's participation, successfully aligned all original equipment manufacturers (OEMs) on a standard charge connector and communication protocol that enables all plug-in vehicles to use common charge points. This allows all public charge stations to be compatible with all vehicle manufacturers' products. For Ford, it enables our plug-in vehicles to charge a fully depleted battery in 2.5 to 3.5 hours. The same approach is under consideration in Europe and China. For faster charging, the SAE (again with Ford's participation) also approved a standard plug and interface to enable future equipped vehicles to charge their battery in 15 minutes or less. In Europe, the standards organizations adopted this same "fast-charge" framework, called the DC Combo System. Ford is now participating in standards work to harmonize wireless charging globally. In addition, Ford is working with other OEMs and suppliers to provide a common database of charge point locations for display within vehicles' navigation systems. In addition, Ford and the industry are working collaboratively with the Obama administration and the U.S. Congress to address the challenges associated with the deployment and commercialization of electric-drive vehicles and infrastructure.

We have also taken a standards approach in the design of the Ford/Leviton charge station. We co-designed a single version of the 240V charge station that not only meets the standards referenced above, but works with all of our plug-in products (i.e., plug-in electric vehicles and battery electric vehicles) and can be used in indoor, outdoor, residential and commercial use throughout U.S. and Canada. In Europe, a similar relationship has been established with Schneider Electric consistent with our European deployment of electrified vehicles.

See Electrification: A Closer Look for more information about our collaborative approach to encouraging the development of electric vehicles.

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Stakeholder Engagement

We have sustained, interdependent relationships with several distinct categories of stakeholders: employees, customers, dealers, suppliers, investors and communities. Also important is our relationship to "society," which includes government agencies, nongovernmental organizations (NGOs) and academia. We identified these categories of stakeholders through internal analysis and discussion during the early phases of developing our sustainability programs. This section describes who our primary stakeholders are and how we engage with them. See the People section for further discussion of our stakeholders.

Employees | Customers | Dealers | Suppliers | Investors | Communities

Employees

171,000
Employees

As of year-end 2012, we employed approximately 171,000 individuals at 67 plants, 40 distribution centers/warehouses, 58 engineering research/development facilities and 113 sales offices worldwide. (These figures include our consolidated joint ventures.) Substantially all of the hourly employees in our Automotive operations in the U.S. are represented by unions and covered by collective bargaining agreements. Most hourly employees and many nonmanagement salaried employees of our subsidiaries outside the U.S. are also represented by unions. These unions are key partners with Ford in providing a safe, productive and respectful workplace.

Ford faces workplace health and safety challenges similar to those of many multinational manufacturing companies. These challenges include, for example, establishing and reinforcing high, common expectations for the safety of our employees worldwide. Most of our manufacturing facilities have joint union/management safety committees that guide the development and implementation of safety programs in their operations.

Customers

5.7 million
Vehicles

Ford's customers make us who we are. In 2012, we sold more than 5.7 million vehicles to our customers worldwide.

We serve three primary types of customers: individual retail consumers, small business customers and large commercial fleet customers. We will continue to expand our products and services for these existing customers while working simultaneously to gain new customers in emerging markets. In North America, we continue to focus on offering a wide variety of fuel-efficient vehicles. In all of our markets, our customers' mobility needs and desires are changing faster than ever.

11,619
Dealers

Dealers

Our dealers are the face of Ford to our customers and communities. They are key employers and contributors to local economies. Ford and Lincoln dealers in the U.S. alone employed 189,000 individuals at the end of 2012, with an annual payroll of approximately $7 billion. Worldwide, we had 11,619 Ford and Lincoln dealerships at the end of 2012.

Over
$90 billion
Annual Buy

Suppliers

Suppliers are an integral part of our business, and our success is interdependent with theirs. We rely on 1,200+ global production suppliers to provide many of the parts that are assembled into Ford vehicles. Another 11,500 supplier companies provide a wide range of nonproduction goods and services, from industrial materials to computers to advertising.

Our supply base is increasingly global. We are expanding production in several regions to serve the sales growth that is expected to occur in emerging markets. We are also expanding our sourcing in these lower-cost emerging markets, as a way to serve both local markets and the global supply chain. These changes, and our efforts to ensure good working conditions in our supply chain, are discussed in detail in the Supply Chain section of this report.

151,240
Stockholders

Investors

Our success as a company directly affects our approximately 151,000 investors, and we have been focused on improving Ford's financial health. More information on our investors is available in the Financial Health section of this report.

We continue to maintain open communication with the investment community. We regularly host conference calls and participate in key automotive conferences during the year. In addition, our Investor Relations website is a good source of information for investors. It contains various Company reports, a schedule of events and investment information.

278
Facilities Worldwide

Communities

Our Company impacts the communities in which we operate in numerous ways, from the employment we provide and the taxes we pay, to the environmental and safety performance of our operations, to the ways in which we support and participate in civic life. Responsibly managing these impacts is not just about being a good neighbor; it is fundamental to the success of our business.

The communities in which we operate are composed of a diverse range of individuals and groups. They include our customers, our employees, our business partners and their employees, government regulators, members of civil society and community organizations, and those individuals who live and work around our facilities, among others. Developing and maintaining positive relationships with these varied groups is an important factor in our reputation and operational efficiency.

Engaging with These Stakeholders

Stakeholder engagement takes place in countless formal and informal ways every day across our Company, from meetings with local community groups to market research with customers to gatherings of Ford dealers and suppliers.

At the corporate level, we use a variety of mechanisms to engage with stakeholders on sustainability issues to help us better understand the broader societal issues that our Company addresses. Some of these mechanisms are informal and ad hoc. In fact, simply picking up the telephone to discuss an issue with any of the numerous sustainability-related organizations or individuals with whom Ford has a relationship is a part of our standard protocol.

Indeed, the very process of engaging with stakeholders on our Sustainability Report has led to expanded and enhanced information in the report in a number of areas, including our positions on key public policy and other issues.

Some of our more formal engagement mechanisms include the following:

- The creation of forums to gather stakeholder input on our activities, challenges and performance. We work with stakeholder committees to help shape and provide feedback on our Sustainability Reports. For example, working with a Ceres Stakeholder Committee is one of the important ways we get input from stakeholders – including environmental groups, engaged shareholder groups and investors – to inform and shape our reporting approach and our materiality analysis. We have also organized meetings with individuals and groups of stakeholders to solicit input on the key sustainability challenges and opportunities facing Ford. These and other engagements have provided valuable feedback on our sustainability strategy.

- Outreach on emerging and ongoing issues of particular importance to Ford or our stakeholders. We believe we have taken a thoughtful approach to our stakeholders as we work through challenging issues. For example, stakeholder input has been critical to the development and testing of our approach to human rights over the past several years. Several organizations, notably the Interfaith Center on Corporate Responsibility (ICCR), have been key partners with Ford, providing information, input and feedback at every step of the process, especially during conversations around shareholder resolutions. Our engagement with the ICCR and others helped us formulate our public commitment to product carbon dioxide reductions. We have also done outreach to the United Nations Global Compact, particularly as we developed our strategy to be a global leader in human rights, and have worked with stakeholders to address specific issues in the automotive industry supply chain. (See the Human Rights section for more detail.)

- Engagement with local stakeholders in the communities in which we operate as part of our Code of Human Rights, Basic Working Conditions and Corporate Responsibility assessment process. Read more about our community engagement in our Communities section.

- Consultation with organizations that have implemented campaigns targeting Ford. We are not currently being targeted by organizations implementing campaigns. However, in the past we have benefited from the alternative perspectives presented during these consultations.

- Engagement with rating and ranking organizations in the investment community. This has provided insight into external perspectives on some important issues and our relative performance in addressing them.

- Offering new product test-drive opportunities to our employees, who, in turn, communicate about our vehicles to their friends and families. Read more about our employee engagement efforts in the People section.

Stakeholder	Communications Forums
Communities/Society 278 plants, distribution centers/warehouses, and engineering, research/development and sales facilities worldwide* *We have announced plans to close three plants in Europe: two in 2013 and one in 2014.	• Community Relations Committees • Interactions with governments • Membership in associations • NGO dialogues
Investors 151,240 stockholders* *Common stockholders as of February 1, 2013.	• Investment community forums • Quarterly earnings communications • Annual shareholders' meeting • Annual report • Proxy statement • SEC filings (e.g., 10-K, 10-Q, 8-K)
Customers 5.7 million vehicles	• Consumer Insight process • Customer care programs • Dealer interactions
Suppliers ~1,200+ production suppliers 11,500+ nonproduction suppliers Over $90 billion annual buy	• Top supplier meetings • Aligned Business Framework supplier dialogue sessions • Supplier quality roundtables • Supplier Diversity Development Networking • External supplier organizations, such as the Automotive Industry Action Group and the Original Equipment Suppliers Association
Dealers* Ford: 10,537 Ford–Lincoln (combined): 876 Lincoln: 206 Total: 11,619 *Worldwide dealerships, as of December 31, 2012.	• Intranet communications • Brand sales and service representatives • Brand Dealer Councils • Dealer roundtables • President's Circle • Salute to Dealers • Advertising and public service announcements
Employees Approximately 171,000 employees* *As of December 31, 2012	• Town hall meetings • Labor/management committees • Pulse survey • Union representation • Intranet surveys and chats • Executive Diversity Council • Local Diversity Councils • Employee Resource Groups

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It was July 1903, and Henry Ford was in trouble. His fledgling Ford Motor Company was barely one month old, yet his cash balance stood at less than $250 – a trifling amount on which to run a business, even a century ago. Salvation came in the form of $1,320 in payments from three customers eager to own his two-cylinder Model A. That cash infusion, which included one full payment and two deposits, kept Mr. Ford and his company afloat.

Fast forward 109 years to December 2012, when Henry Ford's great-grandson brought one of those original three vehicles home. The cherry red 1903 Model A Rear Entry Tonneau, purchased at auction for $264,000 by Ford Executive Chairman Bill Ford, is believed to be the oldest surviving Ford vehicle and has earned pride of place in our lobby at our Michigan world headquarters, a symbol of just how far we have come.

This Model A kept our Company going during the first of many difficult times, allowing Henry Ford to pursue his vision of putting the world on wheels. Today, we're continuing Mr. Ford's journey – in times both good and bad – as we develop new technologies that are leading in quality, fuel efficiency, safety, smart design and value.

2012 was our third year in a row with

$8 billion

or more in pre-tax profits.

Blue Oval

If there's one recent event that symbolizes our renewed financial strength, it's the return of the iconic Ford Blue Oval.

Mobility Solutions

Our Blueprint for Mobility highlights our thinking about what transportation will look like in 2025 and beyond.

This Model A from 1903 is believed to be the oldest surviving Ford vehicle.

Since that very first production of three cars, we have gone on to build more than 300 million vehicles. Over the years, we have weathered many tough economic periods. Yet we have continued to focus on delivering the world's best cars, utilities and trucks, including today's lineup of vehicles that are more sustainable than ever, both in how we make them and how they operate.

Our efforts in 2012 highlight yet again our Company's recent success in pulling through one of the most challenging periods in our history. We continued to adhere to our vital strategy that has emphasized decisive (and often painful) actions alongside steady, longer-range planning for future profitability. This approach, which we call our ONE Ford plan, is working, with 2012 concluding as one of our most profitable years ever in North America. Driven by strong results from Ford North America, we reported total Company full-year, pre-tax profit of $8 billion – our third year in a row of $8 billion or more in pre-tax profits.[1] In 2012, we also had our highest total Company fourth-quarter pre-tax profit in more than a decade. Moreover, we were the best-selling brand in the U.S., and the Ford Focus was the No. 1-selling vehicle nameplate in the world.[2]

Despite these successes, we faced a number of challenges in 2012 – such as the ongoing economic crisis in Europe and quality concerns in North America – that required us to adapt and continue to take decisive actions. Technology and economies around the world are changing so fast that the automotive industry of the future will look very little like the automotive industry of the past.

In 2012, our Company launched 25 vehicles and 31 powertrains globally, earned back our iconic Ford Blue Oval, developed a comprehensive plan for restoring profitability in Europe, invested for further growth in Asia Pacific and Africa, began the reinvention of Lincoln, pushed forward on our vision of sustainable mobility, and continued solid profitability at Ford Credit.

Today, we are in a much stronger financial position than we were five years ago, and we have transformed ourselves from the inside out. As our financial security strengthens, we are investing in future products, our people and our communities. In other words, the financial health of our Company has a ripple effect that goes well beyond our business itself as we work for profitable growth for all.

Snapshot: Financial Health

500,000+
Fuel-efficient EcoBoost® engines produced

25 vehicles and 31 powertrains
launched in 2012 globally

8
Ford vehicles available rated at EPA-estimated 40 (or more) miles per gallon

2,168,015
Ford brand vehicles sold in the U.S. – the only brand to top 2 million

8,100
Combined hourly and salaried jobs Ford added in the U.S. in 2012

2,470
Combined hourly and salaried jobs Ford added in Asia Pacific and Africa in 2012

2,200
Salaried positions to be filled in the U.S. in 2013

$8 billion
Full-year pre-tax profit

1. Pre-tax profits exclude special items. For additional information, see Ford Motor Company's Annual Report on Form 10-K for the year ended December 31, 2012, on our website at www.corporate.ford.com.
2. According to R L Polk 2012 Top 10 global registrations.

"Going Further"

In early 2012, we introduced a new global brand promise that exemplifies our Company's culture and identifies what makes Ford different from our competitors. "Go Further" is much more than a tagline. It's the pledge that we make to our colleagues, to our customers and to our communities that we are committed to innovating and delivering great products that build a stronger business and a better world.

To put this into perspective, ONE Ford is our roadmap and plan; Go Further is the promise behind our efforts. Go Further is also a way to express three characteristics that link back to our Company's heritage: people serving people; ingenuity; and attainability. At Ford, we strive to Go Further through our interactions with our local communities, our dealers, our employees, and, of course, our customers. We're also going further by making innovations, such as affordable fuel technologies, available to everyone – not only to a select few who can afford to pay premium prices.

Over the past year, we continued to embed Go Further into the culture of our Company, allowing us to make an even deeper emotional connection with our customers and our employees while conveying our mission in a simple and effective manner. To help create understanding and awareness within the Company, we created a new section on our Company intranet to highlight Go Further and allow employees to tell their own stories about how they Go Further every day. We included information about Go Further in our quarterly global newsletters to all employees and conducted a series of interviews with executive leaders discussing how Go Further applies to their work.

A global brand promise makes sense for a company whose products are now truly global in scope. For many decades, we acted as a regional company, with products tied to specific markets. Today, our globalized platforms, and vehicles such as the Ford Fiesta, Focus, Escape/Kuga, Fusion and C-MAX, have created a clear and consistent identity for Ford in the world marketplace, allowing us to speak to consumers in a single voice and communicate a single promise.

As we discuss in the Blueprint for Sustainability section, our ONE Ford plan, coupled with our global brand, enables us to advance our sustainability strategy while revitalizing the financial health of our Company as a whole. Our sustainability strategy and our overall ONE Ford business strategy are fundamentally linked.

Defining "Go Further"

We asked some of our people what Go Further means to them. The following are some of the responses.

"I define it for myself as always putting in the extra effort, whether it's for our team members, our customers, our dealers or the communities in which we live and work. For me, it's an affirmation and a way to articulate what I feel about working for Ford my whole career. And these days, when I say I work for Ford, I get a positive reaction. For me, that's further motivation to know as a company we go further and people recognize that."

Mark Fields, Chief Operating Officer

"To me, going further means always doing better and going the extra mile. It's a mindset of appreciating where we are but not being satisfied with it. We should never, ever think that we're 'there,' if you will. We can always do better – in everything that we do."

Robert Shanks, Executive Vice President and Chief Financial Officer

It boils down to who we are and what we do and what makes Ford unique as a company. It's a commitment to each other, to our dealers, to our customers, and to our suppliers. It's in our DNA and it's something that's automatic."

Cyndi Selke, Executive Director Human Resources, Americas and Corporate Staffs

Current Financial Health

If there's one recent event that symbolizes our renewed financial strength, it is this: the return of the iconic Ford Blue Oval. In the spring of 2012, we earned back our investment-grade rating from the second of three major ratings agencies. This significant milestone allowed us not only to lower our borrowing costs, but also to reclaim the Ford Blue Oval, which we had put up as collateral for the original $18.5 billion secured loan we took out in 2006 to save our Company. When we leveraged the Oval as part of that loan package, we were not just pledging an asset; we were pledging our heritage.

Regaining the Ford Blue Oval, one of the most recognized brand symbols in the world, was a great source of pride for our Company and a testament to the years of hard work and steadfast progress since we stood alone as the sole major U.S. automaker to avoid filing for bankruptcy at the height of the economic crisis. But reclaiming the Ford Blue Oval is just the start, and it serves as a huge motivator for our Company to push ourselves even further and faster.

We pulled ourselves out of "junk" investment status by radically overhauling our production strateg,transforming ourselves into a fully globalized business while continuing to invest in new vehicles and technology. Through a difficult process of layoffs and plant closures, we focused on minimizing overcapacity and reducing inefficiencies to become a leaner – and stronger – Ford Motor Company. Couple that with a more flexible manufacturing operation that is saving us money while enabling faster product development and more efficient delivery of new technologies in our core markets. Our performance in North America, along with our valuable Ford Credit business, is powering our investment in global products for South America, our restructuring in Europe, and our significant investments in new capacity that will allow us to participate fully in fast-growing markets in Asia Pacific and Africa.

As part of our transformation, we have reduced the number of global vehicle nameplates, dropping from 97 in 2006 to 32 in 2012.

We recently reclaimed the iconic Ford Blue Oval, which we had put up as collateral in 2006.

For the second year in a row, the Ford brand surpassed the

2 million

mark for U.S. vehicle sales, making it the best-selling brand in America.

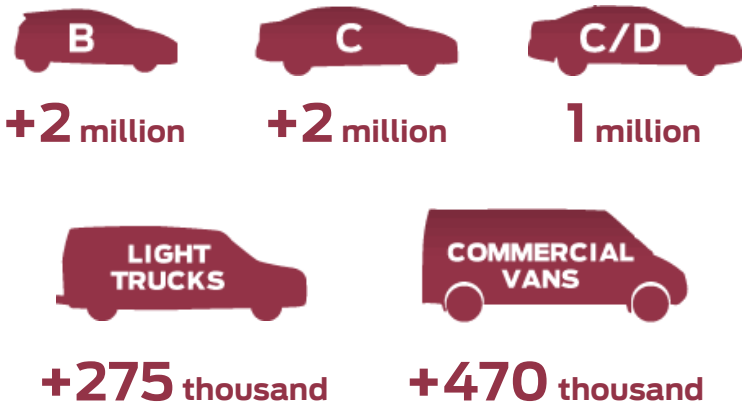
Related links

This Report

- Employees
- Sustainability
- Greening Our Products

Sales Volume Opportunities

Ford sees five key global platforms with sales volume opportunities as depicted here.



For the second year in a row, the Ford brand surpassed the 2 million mark for U.S. vehicle sales, making it the best-selling brand in America. In 2007 – before the recession – 2 million sales was a fairly commonplace achievement for many of the larger brands. Ford is the only brand to make it back up above the 2 million mark.

Our U.S. sales grew across the board in 2012, with cars up 5 percent, utilities up 7 percent and trucks up 2 percent for the year. Our sales of small cars were up a strong 29 percent for 2012, with Focus sales gaining an impressive 40 percent. In California, which is the biggest market in the U.S. for small cars, Focus retail sales were up 83 percent in 2012 versus 2011.

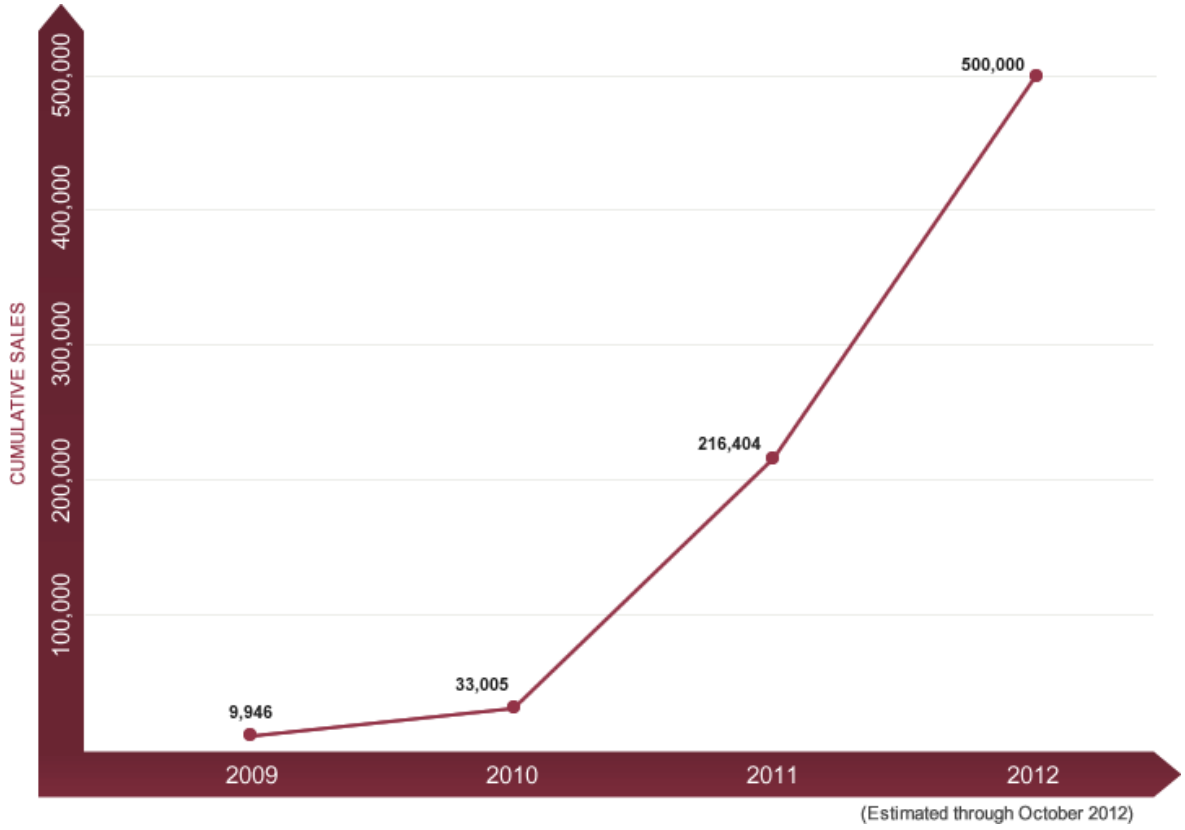
For the full year, North American pre-tax profit and operating margin were both records since 2000 when we began reflecting the region as a separate business unit, and volume and revenue were also higher. Other regions, however, did not fare as well. Europe continued to be negatively impacted by the challenging economic conditions in that region. (Read more on our European transformation plan.) In South America, pre-tax profits were substantially lower than a year ago, in part due to higher costs and unfavorable exchange in Brazil. In Asia Pacific and Africa, we posted a full-year loss as we continued to invest heavily for future growth. We are beginning to see the results of our investments, however, as we sold more than 1 million vehicles in the region in 2012 for the first time and recorded $10 billion in revenue – also a record.

We continue to sell the world's top-selling truck – the F-Series, which has seen significant improvements in fuel efficiency. In early 2013, we unveiled our new Ford Atlas Concept to showcase the design capability, fuel efficiency and smart technologies that will define future pickup trucks. The Ford Atlas Concept features a next-generation EcoBoost® powertrain, which introduces truck-enhanced Auto Start-Stop engine-shutoff technology. Auto Start-Stop shuts off the engine when stopped in traffic to save fuel – and smartly suspends the feature when the truck knows it is towing.

Importantly, we are equally as well known today for our competitive products in all segments of the market, including small and midsize cars as well as sport utility vehicles and our top-selling pickup trucks. Case in point: According to R L Polk data,[1] the Focus was the No. 1- selling vehicle nameplate in the world in 2012, thanks to its continued strength in Europe and a rapidly expanding Asian market. In Canada, our sales performance in the market earned Ford Canada the sales leadership title for the third year in a row.

We offer customers products with best-in-class fuel economy. Equally important, we're offering customers choices of the fuel-efficient systems that work best for them – from EcoBoost®-powered gasoline vehicles to hybrids to electrified vehicles. By year-end 2013, more than 90 percent of Ford's North American lineup will be available with an EcoBoost engine. At the end of 2012, Ford offered EcoBoost engines in 11 North American nameplates, with four more expected in 2013. We are planning to triple our electrified vehicle production by 2013, compared to 2011.

EcoBoost® Cumulative Sales



2009	2010	2011	2012*
9,946	33,005	216,404	500,000

* Estimated through October 2012

Financial Progress

In another sign of our financial progress, we announced in early 2013 that we would double our quarterly stock dividend to 10 cents per share. We had reinstated the dividend – at 5 cents – a year earlier, having suspended it in September 2006 when we were in significant economic difficulty. Our ability to double the dividend within one year is a testament to our ONE Ford plan, which has enabled us to maintain a solid balance sheet while growing our business to provide our shareholders with more return on their investments.

Our dividend yield, which measures how much a company pays out in dividends relative to its share price, increased to 3.2 percent[2] – higher than the average 2.2 percent among companies in the S&P 500 Index. The dividend is an important component of our vision of profitable growth for all – customers, suppliers, employees, dealers and investors.

As a result of our 2012 financial performance, employees across the Company were recognized for their contributions through various reward and recognition actions according to local plans and practices, as applicable. In the U.S., for example, profit-sharing payments were made to approximately 46,000 eligible U.S. hourly employees. In accordance with the UAW[3]-Ford collective bargaining agreement, Ford North America pre-tax profits of $8.3 billion generated approximately $8,300 per eligible employee, which we paid in March 2013. Individual profit-sharing payments were higher or lower based on actual employee-compensated hours.

In addition, in 2012 we made cash contributions to our funded pension plans of $3.4 billion globally, including $2 billion of discretionary contributions to our U.S. plans. In 2013, cash contributions to funded plans are expected to be about $5 billion globally, including discretionary contributions to our U.S. plans of about $3.4 billion.

Adding Jobs

Signs of our improved financial health were also evident in our hiring in the U.S. In early 2013, we announced plans to hire 2,200 engineers, computer programmers and other product-development

specialists – the largest increase in salaried workers in more than a decade. The new positions are in addition to the more than 8,100 combined hourly and salaried U.S. jobs that we added in 2012. Approximately 1,000 of those positions were hourly jobs brought back to Ford plants in the U.S. from other locations.

In late February 2013, we also pledged to add 450 new jobs at our Cleveland (Ohio) Engine Plant, where we plan to invest nearly $200 million to increase production of our 2.0-liter EcoBoost engine. This hiring brings us more than halfway to the 12,000 new U.S. jobs we forecasted to deliver by 2015 during 2011 contract discussions with the UAW.

As we expand our product lineup of fuel-efficient vehicles, we need more people in critical areas, such as engineering, vehicle production, computer software and other information technology functions. The hiring will also help support our global product momentum and our commitment to serve customers in all markets with a full family of vehicles offering best-in-class quality, fuel efficiency, safety, smart design and value. To attract new team members, we are expanding our use of social media to reach new, technology-savvy workers, and we're stepping up our efforts to reach military veterans. See the People section for more on employment at Ford.

Globally, we're continuing to add new jobs in Asia Pacific and Africa, where we completed construction of two new plants, announced significant expansions of existing facilities, and currently are building seven additional plants (five in China and two in India) to keep pace with product demand. However, depressed sales in Europe have forced us to make the difficult decision to shutter plants, affecting approximately 6,200 positions in the region.

Plant Investments

A critical component of our recent business strategy has been our focus on realigning production with demand. This has meant retooling some facilities as flexible manufacturing sites, allowing for multiple types of products to be built on the same line. In some cases, this has also meant retooling facilities that previously built large trucks and SUVs to instead manufacture smaller and/or more energy-efficient vehicles. To these ends, and in conjunction with our 2011 bargaining agreement with the UAW, we estimate we will invest $6.2 billion in U.S. plants by 2015.

For example, we invested $550 million to overhaul our Michigan Assembly Plant (MAP), which formerly built two full-size sport utility vehicles. Today, it is the only manufacturing site in the world to build vehicles with five different fuel-efficient powertrains on the same line, and the only one to build four vehicles that deliver an EPA-estimated 40 mpg. The plant is setting a new global standard for flexible manufacturing. More than 80 percent of the tooling in the plant's body shop can be programmed to produce a variety of body styles, allowing us to quickly adjust the mix between models as customer preferences change.

According to a recent analysis from the Center for Automotive Research (CAR), the plant supports 24,000 jobs in Michigan and pumps an annual $1.8 billion into the state's economy. CAR said MAP sets "the new global standard for flexible manufacturing."

Michigan Assembly Plant (MAP)

The Michigan Assembly Plant (MAP) uses a flexible manufacturing system that produces five vehicles from one platform. It is the only plant in the world to build gasoline-powered, electric, hybrid and plug-in hybrid vehicles on the same production line.

History

1957 — Plant opened

1965 — Produced first F–100 truck

1997 — Began producing the Ford Expedition and Lincoln Navigator

2009 — $550 million invested to transform MAP into a lean, flexible manufacturing plant

Facts

5 million square feet

3 mile assembly line

4,943 hourly workers

227 salaried workers

More than **$140,000** donated to local charities from Ford and UAW annually

Three-Wet paint process saves **$3 million** in production costs, including significant savings of electricity and natural gas

Outputs

Focus | **Focus ST** | **Focus Electric** | **C-MAX Hybrid** | **C-MAX Energi**

We are spending more than $773 million on new equipment and capacity expansions across six manufacturing facilities in southeast Michigan. These investments will create 2,350 new hourly jobs and allow us to retain an additional 3,240 hourly jobs. The 2,350 new positions are part of the 12,000 hourly jobs that we forecasted to add across the U.S. by 2015.

At our Kansas City (Missouri) Assembly Plant, we are investing $1.1 billion in a new body shop, a new tooling area, an upgraded paint shop and an all-new integrated stamping plant. These investments support the 2013 North American product debut of the full-size Ford Transit van family, which will achieve gas mileage that's an average 25 percent better than the E-Series cargo and passenger vans that Transit will replace when it starts production in 2014.

We're committed to growth in other parts of the world, too. To meet increasing demand in the Asia Pacific and Africa region, for example, we are building seven new plants – five in China and two in India. We also recently opened a new plant in Chongqing, China, and another in Rayong, Thailand, to produce the global Focus.

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1. According to R L Polk 2012 Top 10 global registrations.
2. As of Feb. 28, 2013
3. “UAW” originally stood for United Auto Workers; the full name now is the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America.

Focus on Europe

Europe is the second-largest automotive region for industry sales volumes in the world, behind Asia Pacific and Africa, and it is home to such growing markets as Russia and Turkey.[1] Europe is critically important to our ONE Ford plan, representing slightly more than a quarter of our Automotive revenue and vehicle sales volume. It is also an important center of engineering, research and development, supporting all regions of the Company.

Despite overall Company financial progress in 2012, Europe remained a particular challenge, with regional industry sales volume hitting a nearly 20-year low. Ford Europe pre-tax losses for the year exceeded $1.7 billion. Although current economic conditions in the region have certainly played a role, we view the situation there as more structural than cyclical in nature, requiring decisive action.

In October 2012, we outlined our European Transformation Plan, including actions to increase cost efficiencies, address manufacturing overcapacity, accelerate product development and strengthen our brand. We plan to close two U.K. facilities in 2013 – our assembly plant in Southampton and our stamping and tooling operations in Dagenham – and we plan to end production at a major assembly plant in Genk, Belgium, at the end of 2014. The decision to close the plant in Genk is subject to an "information and consultation" process with employee representatives.

The planned actions will reduce vehicle assembly capacity (excluding Russia) by 18 percent, or 355,000 units. The related gross annual savings will range between $450 million and $500 million.

We recognize the impact our actions will have on many employees and their families, and we are working together with all stakeholders as we make these difficult changes to our business in Europe.

In all, the actions will affect 6,200 positions, or about 13 percent of Ford's European workforce. That includes 4,300 positions in Genk and 1,400 positions in the U.K. Our goal is to achieve employee reductions through enhanced employee separation programs and, with regard to our U.K. facilities, redeployment to other Ford locations. The layoffs also include a previously announced initiative to reduce approximately 500 salaried and agency positions across Europe, with the Ford salaried reductions achieved voluntarily.

Our transformation plan builds upon our earlier announcement that we are launching an unprecedented array of new products – 15 global vehicles, including large cars, sport utilities and commercial vehicles – in Europe over five years. We believe the European market holds potential for profitable growth if we accelerate product development and move decisively to address our costs and overcapacity.

Also in 2012, we took a number of other actions across our European operations in response to the economic downturn. These include reducing line speed and using short-time working days and lay-off days. We also reduced temporary employment in several plants.

In addition, we're making a strategic shift to reduce vehicle inventory at our European dealerships. Recent improvements in vehicle logistics and information technology systems have sped order-to-delivery time, enabling this change. Reducing inventory will have a long-term, positive effect on profits for both Ford and dealers, while customers will benefit from fresher vehicle inventories, quicker delivery and improved resale values.

Ford is projecting profitability in Europe by mid-decade, driven by higher industry volumes and market share, growth in emerging markets, a richer product mix and improved contribution margin, as well as a more efficient manufacturing footprint. A partial offset will be higher structural costs as we reconfigure and grow the business.

Related links

This Report

» Ford of Europe

1. Although not included among our traditional 19 European markets, Turkey and Russia do contribute to our Ford Europe segment results.

The Lincoln Motor Company

Aston Martin. Jaguar. Land Rover. Volvo. At one time, these made up Ford's portfolio of luxury brands. As part of our ONE Ford plan, we sold these brands because they didn't fit into our long-range goals. But we held on to one stalwart: Lincoln.

In late 2012, we reintroduced "The Lincoln Motor Company" as part of a campaign to revitalize the brand and woo new customers. We see a tremendous opportunity in Lincoln, which will deliver four new models over four years. Buyers of luxury cars slowed their spending during the economic recession, and many today are looking for what we call "affordable premium."

The Lincoln MKC concept crossover vehicle, which debuted at the North American International Auto Show in early January, aims to compete in the small luxury sport utility category. The Lincoln MKZ, meanwhile, is our latest premium midsize sedan, starting at just under $36,000 – slightly less than our closest competitor. We're also planning to begin selling Lincoln in China in 2014 – our second market for vehicles outside of North America. Introducing Lincoln into China marks the next step in our expansion in Asia and highlights our commitment to serving customers in the luxury market.

Lincoln is focusing on the largest and fastest-growing segments of the luxury market, with the intention of having all-new entries competing in 90 percent of the premium industry by 2015. The global premium industry overall is projected to grow by 39 percent by 2017, with China playing a key role. By 2017, the U.S. and China will represent 50 percent of the global premium industry.

Our globalized platform approach allows us to use Ford models as starting points for the revamped Lincoln.

To build enthusiasm and excitement, we launched an edgy new advertising campaign, including print and television ads. The first print ad began with the provocative question: "Does the World Need Another Luxury Car?" The answer: "Not really." The ad campaign captures the founding principles of the Company and makes them relevant for a new generation of luxury buyers.

Lincoln was originally called the Lincoln Motor Company in 1922, when Edsel Ford purchased the Company from its founder, Henry Leland. During its early years, Edsel worked with numerous custom-body suppliers to make Lincoln one of the most distinctive luxury brands in the industry, with motorcars that were considered urbane, sleek and elegant. The revitalization of the Lincoln brand marries this heritage with our most modern technologies to meet the needs of savvy consumers who have many choices.

Product Competitiveness

Our financial turnaround has been based largely on our ability to deliver high-quality, innovative and desirable products everywhere we operate, in both mature and rapidly growing markets. To further our progress, we are continually improving quality and customer satisfaction and anticipating and responding to changes in customer demand. We have aligned our product development, manufacturing and marketing organizations worldwide to deliver the right products to the right markets as efficiently as possible.

We see ourselves as much as a technology company as a car company, and our cars, utilities and trucks are more technologically connected than ever. Everything we do is based on technology innovation, whether it is quality, fuel efficiency, safety, smart design or value – the hallmarks of our ONE Ford plan.

We're leveraging technology to change the way people think about midsize cars. We started this journey in 2006 with an all-new Ford Fusion that was designed to win market share from popular Japanese midsize sedans. In the years since, we have continued to improve the Fusion, adding hybrid and plug-in hybrid models that are bringing more new buyers to the brand than any other Ford vehicle.

The global Ford lineup is now one of the most extensive in the industry and includes a full spectrum of offerings from innovative small cars (B-platform products), such as the Fiesta or Focus, to large, commercial trucks sold around the world.

We have realigned our capabilities to deliver better products faster than ever before. We are continuing our investment in flexible manufacturing, which reduces costs for each new product and lets us shift production at an individual plant from model to model to address changes in customer demand quickly.

We are making swift progress on our commitment to platform consolidation. In 2007, we utilized 27 different vehicle platforms. By 2014, we will have 14 total platforms, and we are on track to meet our target of nine core platforms globally. By 2013, more than 87 percent of our global volume will be produced across just nine core platforms. One of these platforms – our global C-platform, which underpins a number of vehicles including the best-selling Focus – will produce more platform volume than any other automaker, which is evidence that small cars are a clear global priority. Our new B-sized Fiesta and C-sized Focus are now among the best-selling nameplates in the world. Over the past few years, we have been reinventing our global portfolio of vehicles – small, medium, and large; cars, utilities, and trucks – and have a mid-decade target of selling approximately 8 million vehicles around the world.

Giving Customers a Choice

Ford offers customers a range of electrified vehicles to meet customer needs. We leverage our global platforms to achieve engineering efficiencies. Coupled with our commitment to standardized flexible production facilities, this provides Ford with the advantage of producing vehicles to meet unique customer preferences or changes across markets as they occur in real time. More important, our commitment to provide economy leadership with every all-new or significantly refreshed product is unwavering.

The new C-platform is a good example. The 2013 Focus SFE, with 2.0-liter gasoline-engine technology, is among the fuel-economy leaders in the U.S., delivering an EPA-rated 40 mpg on the highway. In Europe, the same Focus with a 1.6-liter diesel engine enjoys fuel economy/CO_2 leadership in the most competitive diesel market in the world. The Focus is also available in North America as Ford's first full battery-electric vehicle offering and is among the leaders in charge rate and range. The Focus Electric has been certified by the U.S. Environmental Protection Agency to offer 110 MPGe in the city. (MPGe is a mile-per-gallon equivalency metric for electrified vehicles.) (Read more on our electrification approach.)

Related links

This Report

- Greening Our Products
- Greening Our Operations

In addition, the 2013 C-MAX Hybrid and C-MAX Energi plug-in hybrid sold in North America are built on the same C-platform and deliver leadership against competitive vehicles. Lastly, our first global C-size sports car, the Focus ST, delivers more than 250 horsepower from an advanced 2.0-liter EcoBoost® engine. All of these vehicles, from the Focus Electric and C-MAX Energi to the high-performance Focus ST, are built for North America at the same plant – Michigan Assembly Plant – running on the same line, resulting in lower overall costs.

EcoBoost® Production

To meet rising consumer demand for the 2.0-liter EcoBoost engine, we're investing nearly $200 million and adding 450 new jobs at our Cleveland (Ohio) Engine Plant. The plant was the first to produce EcoBoost engines and will continue to be a cornerstone of our strategy to deliver affordable fuel economy for millions.

Production of the 2.0-liter EcoBoost for North America is currently based in Valencia, Spain. The investment in Cleveland will shift North American production to Ohio, while Ford's Valencia Engine Plant will remain the exclusive production location for the 2.0-liter EcoBoost for vehicles built in Ford Europe. Valencia will continue to produce and ship parts for these engines to North America. Production will begin in North America in late 2014. Cleveland Engine Plant currently builds the 3.5-liter EcoBoost engine and 3.7-liter V6.

In 2013, we will expand EcoBoost production to 1.6 million engines – nearly 100,000 above the previous target. We expect to sell more than 500,000 EcoBoost-equipped vehicles in the U.S. in 2013 – a sizeable increase over the 334,364 sold in 2012.

Our Sustainable Technologies and Alternative Fuels Plan, which highlights how we will meet our product carbon-dioxide reduction goal, has positioned us to lead in our industry and will help us meet new regulatory emissions standards. In the U.S., government regulations will require approximately 35.5 mpg (fleet average) by the 2016 model year – a 30 percent improvement from the 27 mpg required for 2011 models.

As consumer demand for smaller vehicles increases, we need to provide the vehicles people want, and provide them profitably, in order to remain a sustainable business.

Customer-Driven Innovation

Our customers are looking for ever more ways to personalize their vehicles and driving experiences. What better way to meet that need than engage them in developing the technologies they want? We're looking for customers to design driver-friendly apps that will enhance their driving experiences. In early 2013, we became the first automaker in the world to launch an open developer program that enables software developers to directly interface with the vehicle and create their own apps.

The Ford Developer Program marks a dramatic shift in how we will innovate new features and add value to our vehicles. Opening the car to developers gives consumers a direct voice and hand in the creation of apps that can help our products remain relevant, up to date and valuable to our customers.

According to a recent Nielsen survey, more than half of all American mobile subscribers now use smartphones of some kind, and two-thirds of newly activated phones can run apps. Globally, there are now more than 1 billion smartphone users, a population that is expected to double by 2015. More than 55 billion apps have been downloaded from the leading digital markets, and American users have an average of 67 apps on their devices.

When we first introduced SYNC in 2007, there was a need for an appropriate way to connect and control cellphones and digital music players in the car due to the massive consumer adoption trend. Offering voice control so drivers can keep their hands on the wheel and eyes on the road has proved to be popular with our customers. Now, with an even faster adoption rate of smartphones, there is a need for a renewed focus on voice control for the unique capabilities of these devices, especially for the use of apps.

Engaging innovators outside of the Company is a key part of our strategy to be consumer-driven in all aspects of our business, helping us not only satisfy what's going on today, but setting us up for innovative solutions to the challenges coming in the future.

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2012 Sales and Highlights

Business Unit	2012 Wholesales (in thousands)	Percent change from 2011	2012 Highlights
Ford North America	2,784	3.6%	• Ford was the No. 1-selling brand of utility in America for the second straight year; the Ford Escape had record sales with more than 260,000 vehicles sold – its best sales since it launched in 2000. • The F-Series pickup was America's best-selling pickup for the 36th straight year, and America's best-selling vehicle for the 31st straight year.
Ford Europe	1,353	-15.5%	• Ford was the second best-selling car brand in our traditional 19 markets – a position we have maintained for the past five years. • Ford remained the market share leader in Britain.
Ford South America	498	-1.6%	• Ford introduced new global products in South America, including the Ford Ranger pickup and EcoSport small utility.
Ford Asia Pacific and Africa	1,033	14.6%	• Ford gained market share in Asia Pacific and Africa for the 3rd year in a row, increasing to 2.8% in 2012 compared to 2.7% in 2011 and 2.4% in 2009. • We also completed construction of two new plants in the region in the last year, announced significant expansions of existing facilities, and currently are building seven additional plants in the region – five in China and two in India – all as part of our plan to reach production capacity of 2.7 million vehicles by mid-decade.

Customer Satisfaction and Quality

Quality is one of the four pillars in our approach to great products: quality, safe, smart and green. Quality and customer satisfaction together are a central mission of all of our employees. They are also central to our sales and service operations, affecting customers' willingness to consider our vehicles as well as their loyalty to our brands. High-quality vehicles also have lower warranty repair costs, which helps our bottom line.

Ford has worked tirelessly to improve quality over the past decade, and we have made great strides in overall quality. We use an extensive Global Quality Operating System at every stage of vehicle development and manufacture to make sure that our vehicles have world-class quality and performance. We begin designing for quality from the very earliest stages of every vehicle program. Years before a new model rolls off the assembly line, we are already identifying and addressing potential quality problems through virtual manufacturing technology. We undertake extensive testing of actual vehicle prototypes for both manufacturing and performance quality. We continue to evaluate and fix any quality problems that arise after our vehicles are sold. We evaluate every manufacturing-related warranty claim and develop and implement effective solutions in the assembly plants. We also gather feedback from our customers using survey tools, to ensure that we understand customers' perspectives on our vehicles, including problems that arise and their opinions of vehicle designs and features. Thanks to our intense focus on quality, the overall quality of our vehicles has improved substantially over the past decade.

Despite these efforts, we had some significant quality issues in 2012. In the past several years, we have been dramatically increasing the innovative technologies in our vehicles, the number of new models we introduce, and the speed with which we release them. In addition we are raising production in the U.S. and other regions to match growing demand for our vehicles. All of these trends increase the pressure on both our own and our suppliers' design, production and quality systems. Overall, we had 24 recalls in 2012. We have been working hard to rectify these problems and deliver on our promises to consumers. In November, for example, we recalled about 20,000, 2013 model year Fusions for low-beam headlamps that may develop reduced brightness. We initiated the recall quickly and voluntarily as soon as the problem arose. In less than two months from receiving the first reports of the issue, we were able to identify the root cause and provide a fix for the potential headlamp dimming. Our fast response has been well received by customers. Sales of the Fusion have remained robust despite the recall.

We know we need to do more to get our quality performance back on an improving trend. We are increasing our efforts to improve quality, even as we introduce new technologies and new vehicles at an ever increasing rate. We have worked hard to create a culture of cooperation and focus on solving the problem, not passing blame or pointing fingers, so that when quality issues arise, we can solve them quickly and effectively. We strive to ensure that we learn from every quality issue so that our overall performance continues to improve. For example, although we know that introducing new products quickly is critical, we also have to take the time to make sure everything about new vehicles is just right before they launch. Learning from the Escape and Fusion launches, we have delayed the launch of our new Lincoln MKZ to put the vehicles through an even more rigorous final quality-inspection process.

We track our progress on quality through a combination of internal and external measurements that assess how we are doing and where we can improve. The Global Quality Research System (GQRS), which tracks "things gone wrong," is our primary quality survey[1]. It is implemented for us by the RDA Group, a market research and consulting firm based in Bloomfield Hills, Michigan. We also subscribe to J.D. Power and Associates' Initial Quality Survey and APEAL study. And, we track warranty claims and costs internally. Global and regional quality improvements are detailed in this section.

Related links

This Report

- Customers
- Data: Product, Quality and Service
- Data: Market Share and Sales

1. The GQRS study is conducted quarterly, with scores assessed from survey responses collected from vehicle owners by the RDA Group, a consulting firm.

Global and Regional Quality Improvements

The following are key measures of our vehicle quality:

Global Warranty Spending

- Global warranty spending per unit declined 19 percent in 2012, compared to 2011.
- Global warranty costs decreased by $27 million over the last four years (from year-end 2008 to year-end 2012). Warranty costs are expected to increase by 7.5 percent by 2017.

GQRS Initial Quality (Three Months in Service) Report 2012

- In 2012, global full-year "things gone wrong" (TGW) improved to 1,373 per 1,000 vehicles from 1,447 in 2011. Global full-year customer satisfaction also improved to 72 percent in 2012, up from 68 percent in 2011.
- In the U.S., the following models led their respective segments in the Global Quality Research System (GQRS) quality survey:
  - Ford Mustang – TGW Leader, Sports Car
  - Ford Taurus – TGW Leader, D/E Car
  - Ford E-Series Van – TGW and Satisfaction Leader, Full-Size Bus/Van
  - Ford Super Duty – Satisfaction Leader, Heavy-Duty Pickup

In North America in 2012:

- Overall customer satisfaction in 2012 was 79 percent.
- The number of Ford Motor Company safety recalls increased from 13 in 2011 to 24 in 2012; however, the number of affected units decreased from 3.3 million to 1.4 million. Three of the 2012 calendar-year safety recalls were reported by the U.S. National Highway Traffic Safety Administration (NHTSA) in January 2012, although they were approved by the Company in December 2011. Additionally, three other 2012 calendar-year safety recalls were supplements to safety recalls that were originally approved by the Company in 2010 and 2011.
- Warranty spending decreased by 20 percent in 2012, compared to 2011.
- Ford's customer satisfaction with dealership sales experiences improved 2 points in 2012 compared to 2011 and 6 points since 2006. Customer satisfaction with vehicle service experiences improved by 3 points from 2011 to 2012 and has increased 8 points since 2006.

In Europe in 2012:

- Full-year TGW improved by 10 percent compared to 2011.
- Overall customer satisfaction increased 6 percentage points compared to 2011.
- Sales satisfaction with dealer or retailer increased by 4.5 points compared to 2011. Service satisfaction with dealer or retailer increased by 7.5 points during the same period.[1]
- Warranty spending decreased by 8 percent compared to 2011.

In Asia Pacific and Africa in 2012:

- Full-year TGW improved by 21 percent compared to 2011.
- Full-year customer satisfaction increased by 8 percentage points compared to 2011.
- Sales satisfaction with dealer or retailer improved by 3 points from 2011 to 2012. Service satisfaction with dealer or retailer improved by 7 points from 2011 to 2012.
- Warranty spending decreased by 15 percent compared to 2011.

In South America in 2012:

- Full-year TGW improved by 6 percent compared to 2011.
- Full-year customer satisfaction decreased 1 percentage point in 2012 to 65 percent.

- Warranty spending increased by 9 percent compared to 2011.

Owner Loyalty

Owner loyalty is a measure of customers disposing of one Ford product and buying a new Ford product. In the U.S., owner loyalty decreased slightly in 2011 to 47.7 percent compared to 48.6 percent in 2011. In Europe, Ford owner loyalty increased to 52 percent in 2012 from 51 percent in 2011.

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1. European sales and service satisfaction with dealers and retailers are net promoter scores based on 23 European markets, including Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

Ford Future Competitiveness

It's a truism that the world is always changing. But now the pace of global change isn't just changing – it's accelerating. To remain relevant and competitive in the long run, we need to prepare for a future that looks significantly different from the present. As we think about the forces that will shape global markets in the years to come, we look at many factors, including consumer trends, business risks (pdf, 6.56Mb) and other inputs into and outcomes of our materiality analysis. This analysis has reinforced our belief that profound shifts are underway that will fundamentally reshape both the markets for our products and services and the constraints under which auto manufacturers will operate in the future. One obvious driver of change is population growth: The United Nations predicts that the global population will reach 9 billion by 2050 and increase to 10.1 billion by 2100. Another is the shift in the locus of rapid economic growth from more mature markets to evolving economies in China, India, Brazil and other countries. (See Focus on Asia for insight into our growth in that region.)

These trends, along with advances in conventional and renewable energy technologies, are leading to significant shifts in energy supply and demand, several of which are highlighted in the *World Energy Outlook 2012*, a publication of the International Energy Agency (IEA):

- Despite widespread efforts to use energy more efficiently, energy demand is projected to grow by one third by 2035 with China, India and the Middle East accounting for 60 percent of that growth. These regions will also account for most of the increase in demand for oil for transportation.
- The number of passenger cars on the road is expected to double to 1.7 billion by 2035 (up from 800 million in 2011). Truck fleets will also continue to grow: Demand for fuel for freight trucks represents 40 percent of the projected increase in demand in transport fuel by 2035.
- Due to increased production of natural gas and shale oil, the United States is projected to be the largest global oil producer by around 2020 and be energy-independent and a net oil exporter by about 2030.

These changes indicate a shift in the growth of energy use and corresponding greenhouse gas emissions – also from mature markets to rapidly growing ones – as well as changes in which countries and regions are importing and exporting fuel.

The IEA report also calls out some sobering predictions:

- One billion people will still lack access to energy by 2030.
- Water issues related to energy extraction will continue to grow as more water is needed to produce new energy supplies.
- Limiting the warming of the climate to only two degrees centigrade (aligned with a concentration of 450 ppm of carbon dioxide in the atmosphere) is becoming more difficult and more costly with each year that passes.

These findings reinforce the "water-food-energy nexus" – the idea that changes to conditions affecting one of these basic human needs inevitably affects the others. (For more on this, see this year's Water perspective.) For example, the use of fuel for transport in one region of the world can have consequences for food costs and availability in another. We are also watching related trends like urbanization, congestion and gridlock.

Related links

This Report

- Customers
- Sustainable Technologies and Alternative Fuels Plan

We believe we have taken a responsible course to plan our products based on doing our part to achieve climate stabilization. We are also developing a comprehensive water strategy that takes into account water-related risks and opportunities across our value chain. However, our reading of the IEA report and other information suggests that responsible actions related to our current products and those in the pipeline may not be sufficient to maintain future competitiveness. The trends discussed here paint a picture of future markets that are dramatically different from those of today, offering different opportunities and posing new challenges. To meet the needs of our customers and contribute to addressing the global sustainability issues of the future, we are applying our core competencies, including innovation and partnership-building, to develop solutions for future mobility that reflect the realities of a changing world.

Focus on Asia

Snapshot: Ford in Asia

$6.7 billion
Total Asia Pacific and Africa investment by 2015[1]

5
New plants under construction in China

2
New plants under construction in India

50
New Ford vehicles and powertrains to region by mid-decade

3,000
New salaried jobs to region by 2015

50 million
Anticipated annual vehicle sales in the Asia Pacific and Africa region by 2020

Related links

This Report

» Ford Asia Pacific and Africa

Asia offers tremendous opportunities for our Company. The fastest-growing markets for automobiles are in rapidly developing countries, especially China and India. China will remain the largest car market in the world for the foreseeable future, and India is projected to be the third-largest market in the world for the coming decade. By 2020, annual vehicle sales in the Asia Pacific and Africa region will likely reach nearly 50 million vehicles, with some 30 million of them in China.[2]

We estimate that 60 to 70 percent of Ford's growth in the next 10 years will come from this part of the world. Today, one in every five vehicles we sell globally is in Asia Pacific and Africa. By 2020, it will be one in three.

To keep pace with this enormous growth, we are building new plants and expanding existing ones, hiring workers, growing our dealer networks, and further developing our supply chain across China, India and Thailand.

Ford has been operating in China through two joint ventures: Changan Ford Automobile (CAF)[3] and Jiangling Motors Corporation, Ltd. (JMC), which assembles Ford and JMC vehicles for distribution in China.

In 2012, Ford China set an annual sales record, selling 626,616 wholesale vehicles, up 21 percent from 519,390 wholesale the previous year. For several consecutive months, the Ford Focus was named the best-selling nameplate in China. The Chinese market's enthusiasm for our vehicles validates our aggressive $4.9 billion investment to introduce 15 new vehicles, double production capacity, and double our China dealership network by 2015. Read more in the Chongqing case study.

In India, meanwhile, Ford sold 87,492 domestic wholesale units in 2012. We continue to increase our presence in India, where we operate a vehicle and engine manufacturing facility in Chennai. We are investing $1 billion for our second integrated manufacturing facility, which includes an assembly plant and an engine plant, in Sanand, and are committed to bringing the best of global products and services to the country. In India, we will more than double the number of dealerships from 119 in 2010 to 300 in 2015.

We are investing more than $6.7 billion[4] in Asia Pacific and currently employ some 22,000 people in our wholly owned and consolidated joint ventures in the region. Our operations include the

following:

Joint Venture Facilities

- Our joint venture CAF already operates two passenger car vehicle assembly plants in Chongqing. CAF has two more assembly plants under construction – Chongqing 3 and Hangzhou – and two powertrain plants under construction, including an engine and transmission plant.
- Our commercial vehicle joint venture, Jiangling Motors Corp., is investing $300 million for an assembly plant in Nanchang, China, for Ford and JMC branded vehicles.

Ford-Owned Facilities

- We broke ground in 2011 on a $1 billion integrated manufacturing facility in Sanand, Gujarat, India. The new facility, which includes an assembly plant and an engine plant, will create 5,000 jobs and will be able to initially produce 240,000 vehicles and 270,000 engines per year, starting in 2015.
- In Thailand, we have invested $450 million in a new plant in Rayong province that builds the Focus for Thailand and other Asian markets.
- In early 2012, we announced we will be investing $142 million to build a new compact SUV – the EcoSport – at our plant in Chennai, India. We expect to roll out the first EcoSports in mid-2013 for Indian consumers.
- We have invested $72 million to increase production capacity at our Chennai engine plant.

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1. In U.S. dollars for the time period of 1995 through 2015.
2. IHS Automotive
3. Our Chinese joint venture was formerly known as CMFA and recently restructured as Changan Ford Automobile Corporation, Ltd. (CAF) to increase our ownership percentage.
4. In U.S. dollars for the time period of 1995 through 2015.

Ford Motor Credit Company

Established in 1959, Ford Motor Credit Company is a wholly owned subsidiary of Ford Motor Company that offers automotive financial services to dealerships and customers around the world. Ford Credit's focus is on supporting the sale of Ford and Lincoln vehicles, providing financial services to 5,200 Ford and Lincoln dealers and more than 3.6 million retail customers as of year-end 2012. Ford Credit's profits and distributions help support Ford's business, including vehicle development.

Before, during and since the global economic crisis, Ford Credit has provided focused support of Ford Motor Company sales, including dealer financing, and has maintained consistent consumer underwriting standards and credit availability.

Ford Credit's strong business practices enable it to finance customers across the credit spectrum, as well as successfully work with investors to fund the business. These practices and strong servicing also drive loyalty. Independent U.S. studies show that Ford Credit customers are more loyal to Ford, Lincoln and the brands' dealers than customers who utilize other financing.

In North America, Ford Credit does business in every state in the U.S. and all provinces in Canada. FCE Bank in Europe is Ford Credit's largest operation outside North America. The biggest share of FCE's business is in the U.K. and Germany, with smaller operations in most other European countries. Ford Credit also operates in select markets in Asia, Africa and Latin America.

Ford Credit offers a wide variety of automotive financing, insurance and related products to and through dealers, classifying finance receivables and leases in two segments:

- Consumer: finance receivables and leases related to products offered to individuals and businesses that finance the acquisition of vehicles from dealers for personal and commercial use.
- Non-Consumer: primarily products offered to automotive dealers, including loans to finance the purchase of vehicle inventory (wholesale financing), improvements to dealership facilities, working capital and the purchase of dealership real estate.

Ford Credit also works on issues of interest to its stakeholders, including the following:

- Credit Availability: Ford Credit provides financing for qualified dealers and consumers, utilizing responsible financing and servicing practices. Ford Credit provides financing for customers across the credit spectrum and is committed to providing best-in-class customer service.
- Credit Approvals: Ford Credit has used consistent and prudent credit standards and practices for many years to support Ford Motor Company dealers and customers. The company's proprietary credit originations and collections systems enable it to finance a broader range of customers than if it used credit scores alone.
- Compliance: Ford Credit uses responsible, consistent and transparent practices globally. The company has a culture of compliance and is committed to following both the letter and the spirit of the law. Ford Credit believes it maintains all material licenses and permits required for current operations. Ford Credit monitors proposed changes to relevant legal and regulatory requirements in order to maintain its compliance. Through governmental relations efforts, Ford Credit also attempts to participate in the legislative and administrative rulemaking process on regulatory initiatives that affect finance companies.
- Consumer Education and Focus: Ford Credit is a longstanding supporter of, and participant in, financial education through organizations such as AWARE (Americans Well-Informed on Automobile Retailing Economics), of which Ford Credit is a founding member, and Junior Achievement, as well as in community and educational forums globally. Ford Credit also

Related links

This Report

- Customers
- Dealers

is involved in the Jump$tart Coalition, which is dedicated to building financial literacy starting at a very young age, and it participates in the Detroit Branch of the Federal Reserve Money Smart program. Ford Credit's financial literacy workshop, "The 10 Ways to Achieve Financial Success," is presented more than 50 times each year by company volunteers to community groups, school groups, trade shows, conventions and other events. Ford Credit developed a module that invites students to set personal financial goals, evaluate strategies for meeting those goals, and use algebra and data analysis to make short- and long-term financial decisions as part of the Ford Partnership for Advanced Studies (Ford PAS) program. Ford PAS is an academically rigorous standards-based curriculum used around the U.S. that works to ensure that students graduate high school with the skills they need for college or a career. Ford Credit's website includes information in English and Spanish to help consumers make informed decisions about vehicle financing.

- Customer Privacy: Ford Credit has a policy regarding customer information and privacy and uses systems and procedures to maintain the accuracy of customer information and to protect it from loss, misuse or alteration. Ford Credit provides training and communications to educate personnel about privacy requirements. Beyond protecting customer privacy, Ford Credit continuously uses and works to develop strong processes to produce a superior service experience.

- Identity Theft: Ford Credit is a founding member of the Identity Theft Assistance Center, a nonprofit industry association in which member institutions collaborate to protect their customers from fraud and help them recover if they become victims of ID theft.

- Technology and Process Improvements: Ford Credit continuously improves processes and uses technologies that drive efficiency and sustainability. These processes and technologies include: improved and online customer services that facilitate online credit applications, electronic contract signing, paperless invoices, electronic payments and online account management; electronic document storage; and software tools and telephony technologies to enhance responsiveness and increase satisfaction for dealers and customers.

- Community: Ford Credit has a longstanding commitment to the communities in which it does business. This includes providing structured work experience programs for young people. Ford Credit employees also participate in numerous community activities globally. Examples include personal finance training in schools and community organizations; environmental projects such as river cleanup, park and school beautification and recycling; JDRF walks to benefit diabetes research; the Susan G. Komen Race for the Cure and other activities benefiting medical research or assistance organizations; and drives to collect items such as supplies for schools, food for the hungry, clothing for the needy and necessities for soldiers stationed far from home.

Mobility Solutions

Ford's Definition of Mobility

Accessibility for people, goods and services to go where they need or want safely, efficiently and affordably – providing a simplified and fun customer experience. Our goal is to make mobility affordable in every sense of the word – economically, environmentally and socially.

We call it our "Blueprint for Mobility." Similar in concept to our overall Blueprint for Sustainability, it sets near-, mid- and long-term goals for solutions to the challenges facing mobility systems now and in the future as the world becomes more populated and urbanized. When we announced it in early 2012, the Blueprint for Mobility highlighted our thinking about what transportation will look like in 2025 and beyond, and identified the types of technologies, business models, products and partnerships needed to get us there.

To address the future of mobility, we need new technologies and new ways of looking at a world whose global population is expected to reach 9 billion by 2050 – up from 7 billion today. With more people, and greater prosperity, the number of vehicles could increase from 1 billion today to an astonishing 2-plus billion by mid-century. While that sounds like good news for an automaker, we recognize that a business model built on private ownership of vehicles comes with inherent challenges.

In the decades to come, 75 percent of the world's population is expected to live in cities. And by 2025, 37 of those cities will have more than 10 million residents.[1] All of this raises the possibility of global gridlock – a never-ending traffic jam that wastes time, energy and resources. Even if every new vehicle we make has zero emissions and draws from renewable energy sources, we're still talking about billions of cars on the road.

The challenge goes well beyond inconvenience. If we look at the numbers, and look at the state of our global transportation infrastructure, it is not difficult to see a future in which the flow of commerce – and even the flow of health care and food delivery – are compromised. At Ford, we see global gridlock as not just an issue of business and economics, but as a problem that could have a significant impact on the quality of human life.

Global Gridlock

Congestion is a huge problem in many regions of the world. Consider the following:

- In Sao Paulo, Brazil, traffic jams regularly exceed 100 miles, and the average commute lasts between two and three hours a day. Despite this, car purchases are growing at a rate of 7.5 percent annually.
- A recent study from the Texas A&M Transportation Institute found that Americans wasted $121 billion in time and fuel sitting in traffic in 2011.
- In China, the world's longest period of gridlock was registered at 11 days during 2010.
- In England, it is estimated that the cost of congestion to the economy due to lost time will rise to about $35 billion annually by 2025.

Our vision, which aims for a holistic approach, blends smart transportation with intelligent vehicles and transport systems that are interconnected through a global technology network. We see a

> "The automobile has given individuals the freedom of mobility. Prior to the Model T, the average person didn't travel more than 25 miles from home in his or her entire lifetime. The Model T allowed people to decide where to live, work and play. As the car's popularity has grown, that individual freedom has become threatened. Now we have an opportunity to turn this challenge into a solution."
>
> Bill Ford, Ford Motor Company Executive Chairman

Related links

This Report

- Our Blueprint for Mobility
- Our Blueprint for Sustainability

radically different transportation landscape in which pedestrian, bicycle, private car, commercial and public transportation are woven into a connected network that saves time, conserves resources, lowers emissions and improves safety. We know we must view the automobile as one element of a broader transportation ecosystem, and look for new ways to optimize the entire system.

Although we announced our Blueprint for Mobility in 2012, we have been working on these issues for a number of years with a focus on three primary concepts: pollution, congestion and safety. We are already developing new business models and partnerships toward this future in a way that is shifting the paradigm of what it means to be an automaker. But no one company or industry will be able to solve the mobility issue alone. It is a huge challenge that will only be successful if governments, infrastructure developers and industry come together to collaborate on a global scale. The speed at which solutions take hold will be determined largely by customer acceptance of new technologies, as well as how quickly cities develop the enabling systems and infrastructure.

A truly sustainable, long-term solution will require a global transportation network that includes vehicle, infrastructure and mobile communications. We need cars that can communicate with each other, and with the world around them, to make driving safer and more efficient. This smart, connected system will tie all modes of travel into a single network linking public and personal transportation together.

The last few years have seen technological breakthroughs, such as vehicle-to-vehicle communications, that we didn't think possible a few decades ago. Increasingly, Ford is becoming a technology company that makes cars and trucks, and we will continue to explore ways to leverage these technological innovations so we can tackle mobility challenges.

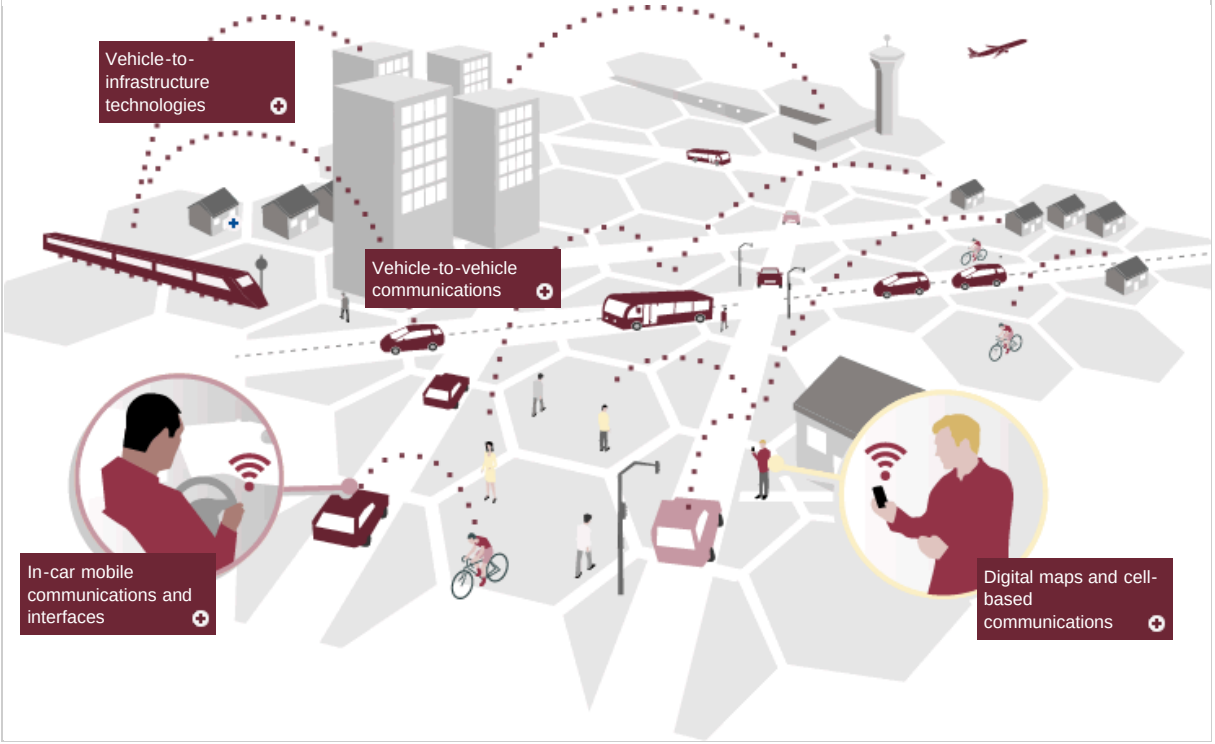
Addressing Mobility in Rural India

Mobility is a basic human need. Developed and emerging economies alike require transportation systems to get goods to market and people to the places where they work, shop, dine and gather. At Ford, we're focusing not just on issues of mobility in increasingly crowded cities. We're also looking at the mobility challenges of rural communities. Read the Saving Lives in Rural India case study to learn how our work in the remote hills of rural India is helping pregnant women give birth to healthy babies.

1. United Nations, Department of Economic and Social Affairs/Population Division. "World Urbanization Prospects: The 2011 Revision."

Our Blueprint for Mobility

By 2050 we will have a true network of mobility solutions, and automobiles will likely look very different from how they look today.



Vehicle-to-infrastructure technologies

Vehicle-to-infrastructure technologies will enable improved safety while allowing more vehicles to share the road.

Digital maps and cell-based communications

The proliferation of digital maps and cell-based communications will provide better driver information and entertainment features.

In-car mobile communications and interfaces

In-car mobile communications and driver interfaces will become more intuitive. These systems will be able to proactively alert drivers to traffic jams and accidents.

Vehicle-to-vehicle communications

Vehicles will "talk" to one another, and the mountains of data they generate will no longer be self-contained.

At Ford, we believe that mobility challenges – in urban as well as in rural settings – require the same level of attention and determination that we have put toward developing solutions for the environmental challenges faced by our industry. Where environmental sustainability is concerned, we have been

making great strides with new vehicle technologies, alternative fuels and vastly cleaner solutions.

Ford was founded on providing personal mobility for everyone. And our Blueprint for Mobility, which builds upon our approach to our Blueprint for Sustainability, is based on an analysis of population growth, urbanization and other key societal and economic trends. Our goal is to make mobility affordable in every sense of the word – economically, environmentally and socially.

The Blueprint for Mobility is guiding our work and the necessary development of future sustainable, smart transportation systems and the steps required to get there. A key component will be partnership with the mobile telecommunications industry to create the infrastructure and technology needed to allow cars to "talk" to each other and to their surroundings.

In the near term (roughly the next five to seven years), technologies – including some that are already in vehicles – will continue to improve. The proliferation of digital maps and cell-based communications will provide better driver information and entertainment features, while in-car mobile communications and driver interfaces will become more intuitive. These systems will be able to proactively alert drivers to traffic jams and accidents. Increasingly, our vehicles will talk to one another, and the mountains of data they generate will no longer be self-contained.

In the mid-term period (to about 2025), the amount of data that will flow to, from and through cars will continue to increase. Vehicle-to-vehicle and vehicle-to-infrastructure technologies will enable improved safety while allowing more vehicles to share the road. New technologies, such as our Traffic Jam Assist technology, will provide more sophisticated systems of semi-automated driving.

Meanwhile, the first efforts to integrate various pieces of the transportation network will begin, allowing cars to plug into public databases that recommend alternative transportation options such as trains, buses and carpools. Early versions of these advances are already being designed and tested.

In the long term, the urban transportation landscape will be radically different from what we know today. By 2050, we will have a true network of mobility solutions, and automobiles will likely look very different from how they look today.

Everything that is outlined in our Blueprint is technologically feasible. The key challenges are making things affordable and attainable to all customers, and finding ways for all stakeholders – the auto industry, governments, technology companies and more – to make the adaptations needed to the transportation infrastructure.

The bullets below provide more detail on the element of the Blueprint in the near, mid and long terms. The near term focuses primarily on technology that Ford is already developing. The mid and long term, meanwhile, set up a vision of what we think future mobility will look like and how Ford, the industry and society as a whole will need to evolve.

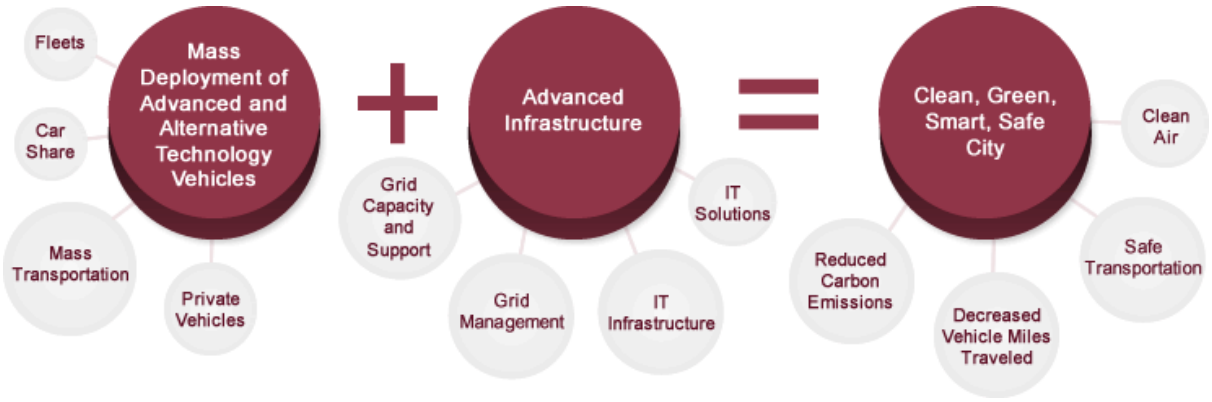
5–7 years	2017–2025	2025+
Near Term	Mid Term	Long Term
• Ford Motor Company to be at the forefront of developing increasingly intuitive in-car mobile communication options and driver interfaces that proactively alert drivers to traffic jams and accidents. • Developmental projects such as the vehicle-to-vehicle warning systems currently being explored at Ford's European Research and Advanced Engineering Centre in Aachen, Germany, and intelligent speed-control features, to grow in capability. • The delivery of a better connected, safer and more efficient driving experience with limited automated functions for parking and driving in slow-moving traffic, building on existing Ford features including Active Park Assist, Adaptive Cruise Control and Active City Stop. • Further development and defining of new vehicle ownership models, as already demonstrated through Ford's collaboration with Zipcar, the world's largest car-sharing and car club service, and our new car-sharing program in	• The introduction of semi-automated driving technologies, including driver-initiated automated capabilities and vehicle platooning in limited situations, to provide improved accident avoidance and driver assistance features that always allow the driver to be in the loop and aware of the situation in case he or she needs to take control. • Significantly more interaction between individual cars on the road through the utilization of ever-increasing computing power and numbers of sensors in vehicles, potentially helping to reduce the number of accidents at intersections and enabling limited semi-automated and automated highway lane changing and exiting. • The arrival of vehicle-to-cloud and vehicle-to-infrastructure communications that contribute to greater time and energy efficiency by enabling vehicles to recommend alternative transport options when congestion is unavoidable and to pre-reserve parking at destinations. • The emergence of an integrated	• A radically different transportation landscape in which pedestrian, bicycle, private car, commercial and public transportation traffic will be woven into a single connected network to save time, conserve resources, lower emissions and improve safety. • The arrival of smart vehicles capable of fully automated navigation, with increased automated operating duration, plus the arrival of automated valet functions, delivering effortless vehicle parking and storage. • The development of a true network of mobility solutions, with personal vehicle ownership complemented by greater use of connected and efficient shared services, and completely new business models contributing to improved personal mobility.

Germany.	transport network, featuring cars plugged into public databases. • New city vehicle options, as more and more one-, two-, and three-passenger vehicles are introduced to help maneuver on city streets.	

New Models of Mobility

We are investing significant research and development dollars in new models of transportation, and helping to advance thinking about it. We are doing this through partnerships and pilot projects at several global locations. Some of these projects have focused on exploring how to deploy electric vehicles as part of integrated mobility solutions aimed at creating "clean, green, smart and safe" cities (see figure below). We believe that creative collaboration and innovative technologies and services can yield new solutions, and that these solutions can harness the benefits of mobility while reducing its environmental and social impacts.

In 2012, for example, we opened a dedicated research lab in California's Silicon Valley as part of our commitment to make technology affordable for millions. The new Ford lab serves as a hub for independent technology projects and the identification of new research investments with partners located along the U.S. West Coast. The lab helps to ensure that Ford keeps pace with consumer trends and aggressively prepares for the future by developing mobility solutions to harness technology.



An Innovative Approach to Car Sharing in Germany

Many people around the world want the benefits of personal mobility but don't necessarily want to own a car. Car sharing offers an approach that can provide those benefits while reducing congestion and the environmental impacts of the private automobile.

According to a recent Ford Motor Company-sponsored poll,[1] more than half of Europeans – 56 percent – would consider car sharing, either through a formal program or through private arrangements. Drivers increasingly see car-sharing programs as viable options, especially in dense urban areas where parking can be problematic and where public transportation fails to meet all mobility needs. Ready and affordable access to a pool of available vehicles can provide on-demand transportation flexibility.

A widely cited 2010 study from the University of California-Berkeley[2] estimated that one car-share vehicle replaces anywhere from nine to 13 vehicles on the road. That includes four to six direct replacements; the rest are avoided purchases.[3]

In early 2013, we announced the launch of FORD2GO, a collaboration between Ford of Germany and our network of 527 Ford dealers, 257 affiliated branches and 1,083 Ford-authorized repair shops, all of which are eligible to take part in the program. The program, to be rolled out during 2013 across Germany, calls for participating Ford dealers around the country to offer car sharing to their customers.

Dealers will purchase one or two Ford vehicles for the program and will be responsible for installing keyless entry systems that will allow users to access the vehicles for rental use. Under the program, the dealer will receive 80 percent of the usage fee. A portion will also go to Ford Motor Company and to the technology company, DB Rent, which developed the Web- and smartphone-based booking system for car-share participants.

For Ford, the program also offers the chance for potential customers to experience Ford vehicles.

As a company, we are committed to a collaborative and integrated approach to future mobility. FORD2GO is one step in exploring what that future might look like.

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1. Survey carried out by The Futures Company between July and August 2012; 6,028 people were questioned across six European countries – Denmark, France, Germany, Italy, Spain and the U.K.
2. E. Martin, S. Shaheen, J. Lidicker, “The Impact of Carsharing on Household Vehicle Holdings: Results from a North American Shared-Use Vehicle Survey.” Transportation Research Record, 2010.
3. The range of estimates on car sharing varies widely, and experience to date may not scale up proportionally if car sharing becomes more widespread.

Mobility Challenges and Opportunities

Mobility is a basic human need. Developed and emerging economies alike require transportation systems to get goods to market and people to the places where they work, shop, dine and gather.

Automobiles have provided personal mobility for more than 100 years. There are currently 1 billion vehicles in the world, and that number is increasing rapidly as individuals in developing markets reach new levels of prosperity. It could reach 2-plus billion vehicles by the middle of this century.

We recognize that a business model built on private ownership of automobiles comes with inherent challenges, which are related directly to the following current and emerging mega-trends. Taken together, the trends point to increasingly diverse and fragmented markets for traditional automobile sales. They also point to significant opportunities for companies that are able to respond to mobility needs creatively.

- Urbanization: By 2025, it is projected that at least 37 mega-cities will have a population of more than 10 million.[1] The migration of rural populations to urban areas often outpaces infrastructure development, leading to overcrowded, substandard living conditions and inconvenient, congested transportation systems.
- Built and Digital Infrastructure: More congestion means greater impacts on roadways and other infrastructure, which will require different products and solutions from a coalition of stakeholders. As transportation and utilities become more interdependent, collaboration must occur among manufacturers, energy/utility companies, and communications and information technology companies.
- Congestion: Each year, traffic congestion is estimated to cost the U.S. $67.6 billion, and the average metropolitan driver endures 27 hours of traffic delays. In many places, especially developing countries, traffic delays are considerably worse, and are increasing at an alarming pace (see Global Gridlock [link]). As more vehicles crowd limited road networks, congestion increases. This, in turn, creates pollution, reduces fuel efficiency and wastes travelers' time. We're working on advancing vehicle-to-vehicle and vehicle-to-infrastructure communication systems that will connect cars, allowing them to "talk" to each other and send real-time updates about traffic congestion, road works and other matters that can delay transportation.
- Climate Change: Climate change and associated regulation is leading to new vehicle standards and increased costs. However, the benefits of more stringent vehicle fuel economy and greenhouse gas standards are eroded as vehicles spend more and more time idling in gridlock conditions.
- Population: Different regions of the world are experiencing opposing population trends. Among the more developed countries, only the U.S. is growing in population; Europe, Russia and Japan are all shrinking. Regions of Africa and Asia are growing in population and will have large numbers of young people. But by the middle of this century, most of the world will be much older on average. With most people living in urban areas, more and different forms of mobility will be needed to support independent living for seniors, the disabled and young people.
- Social Inequality: The gap between rich and poor creates enormous needs for innovative, affordable mobility solutions that meet human needs and help people build a better way of life. Unequal access to transportation often limits the opportunities available to those most in need. Better mobility is part of the solution to unemployment and income disparities.

Related links

This Report

» Climate Change

1. United Nations, Department of Economic and Social Affairs/Population Division. "World Urbanization Prospects: The 2011 Revision."

Key Partners

Mobility issues are complex and rapidly changing – too big for one company to solve on its own. Developing solutions to mobility challenges requires innovative, systems thinking, across a wide range of stakeholder groups. We partner with organizations that can give us access to the latest research, insights and integrative ability.

For example, Ford has been working with the University of Michigan's Sustainable Mobility and Accessibility Research and Transformation (SMART) project since April 2005. SMART takes a collaborative, systems approach to developing innovative, sustainable and connected mobility and accessibility solutions in urban regions around the globe. Building on the seminal work of Moving the Economy in Toronto, SMART has pioneered new thinking, new partnerships and pilot projects related to emerging markets and industry development.

SMART has provided the empirical research and inspiration for Ford's mobility projects. The insights of the SMART leadership team have served as a foundation for our innovative approach to business opportunities related to New Mobility and for our work with other key sectors, including manufacturing, information technology, logistics, tourism, real estate, design and more. In addition to developing New Mobility business opportunities and markets, SMART and Ford are seeking to improve quality of life, employment and other community benefits in cities all over the world over the long term. We are convinced that our partnership with SMART will produce a new systems approach for addressing the increasingly complex challenges to achieving sustainable mobility and accessibility globally, while at the same time transforming the transportation industry into a more sustainable and equitable industry.

As part of our partnership, SMART has established technology transfer collaborations in selected cities worldwide, including locations in India, South Africa, Brazil, the Philippines, Europe, China, Canada and the U.S. Research projects and educational programs are designed to accelerate New Mobility implementation and industry mobilization in these regions and beyond. They focus on three primary areas: "Connecting the Dots" (taking a systems approach); "Moving Money" (advancing innovation and New Mobility industry, jobs and economic development); and "Moving Minds" (attitudes and behaviors of people and decision makers related to New Mobility).

For more information, visit the SMART website.

Also, see the Electrification section for a discussion of a partnership with Whirlpool and others focused on improving the energy efficiency of cars, homes and the electric grid as a system.

Mega-Cities: The Icon of Personal Mobility Challenges

Mega-cities are urban areas with more than 10 million residents. In 2011, 23 urban areas qualified as megacities: 13 in Asia, four in Latin America, and two each in Africa, Europe and North America. By 2025, when the number of mega-cities is expected to reach 27, Asia will have gained another nine, Latin America two, and one each in Africa, Europe and North America.[1] Mega-cities experience a wide range of social and environmental problems, many of them related to mobility.

All of the mega-trends we have identified, as well as other challenges to sustainable mobility, are at their worst in mega-cities, and engender paralyzing traffic congestion, air pollution, vehicle-related injuries and fatalities, and health problems. Furthermore, social inequality and the dislocation of families and communities are increasing as people move from rural areas to mega-cities seeking economic opportunities. To develop mega-city mobility strategies will require addressing the mobility needs of rural as well as urban residents, as many mega-city problems could be improved by developing new approaches to the transportation of people and goods between rural and urban areas, and by reducing the need for rural–urban migration.

New mobility solutions depend on collaboration and partnership. Technology can "connect the dots," but only humans can get the varied institutions and interests involved in urban and rural mobility to work toward a common end. Projects like those described in this section require extensive stakeholder engagement and establishment of trust between the many partners with a role to play.

1. United Nations, Department of Economic and Social Affairs/Population Division. "World Urbanization Prospects: The 2011 Revision."

Case Study:

Saving Lives in Rural India

Henry Ford believed vehicles like his Model T would improve lives through greater mobility. A century later, and half a world away, a young Indian mother named Mageswari and her baby boy are living proof of Mr. Ford's vision.

Mageswari is one of 41 pregnant women who delivered healthy babies thanks in part to an innovative pilot project Ford Motor Company sponsored in the remote hills of Tamil Nadu, India. The nine-month initiative helped pregnant women overcome geographical and technological barriers that are roadblocks to adequate healthcare.

Called Sustainable Urban Mobility with Uncompromised Rural Reach (SUMURR), the program made use of a Ford Endeavor that was designed to handle difficult terrain and traverse areas previously unreachable by four-wheeled vehicles. Medical professionals traveled in the Endeavor to reach their patients and to transport their patients to clinics. The health care teams also could use their laptops and cell phones to connect – via a wireless connection in the vehicle – to doctors and medical records.

"If not for Ford Endeavor, I might have tried to reach the hospital in a two-wheeler," said Mageswari, 19. "I do not know what might have happened."

In the hilly villages of Kallakurichi, maternal and infant mortality is an all-too-common tragedy, with half of all pregnant women and their newborns at high risk of death, disease or disability resulting from inadequate care. Deliveries frequently occur in homes and are rarely attended by trained health professionals. Some of the villages are so remote that government-sponsored nurses have difficulty accessing them. Many pregnant women go for months – if not for their entire pregnancies – without any medical care.

We began the pilot project in June 2012, partnering with the Tamil Nadu Directorate of Public Health, the Indian Institute of Technology Madras (IIT Madras), the U.S. Department of State, George Washington University, and Hand in Hand India, a nonprofit focused on the empowerment of women. Between June and February 2013, the SUMURR program enabled some 1,600 women and children to receive health care, including immunizations and screenings for basic illnesses, at 27 pediatric and gynecology camps set up in remote villages. Many of these locations had never seen physicians before.

SUMURR ultimately reached another 3,100 people as our partners traveled to 54 villages to build community awareness on issues of maternal and child health. Originally, the project partners planned to work in 29 villages. But local nurses in other remote villages saw the benefits and asked to be included, explained K.S. Sudhakar, a project director for Hand in Hand.

Thanks to the success of the pilot, we're exploring similar programs in other parts of rural India and in other countries, such as China and Brazil, where we have manufacturing operations. Ford invested about $250,000 directly in the project, plus significantly more in terms of the time and expertise of our staff.

"Ford Motor Company is not in the business of telemedicine," said David Berdish, Ford's manager of social sustainability and one of the champions of the project. "But between the vehicle and the technology we provide, we can make it better."

SUMURR showcases how Ford's OpenXC technology can enhance accessibility in developing economies. In the isolated hills of India, for example, cellular phone signals are extremely weak or nonexistent. By using a technology "cloud" within the Ford vehicle, health care providers could access and store medical information about their patients.

SUMURR isn't just altruism – there's a business rationale behind it, too. The SUMURR project offers one model of how Ford can leverage our expertise in fleet vehicles, data and financing to meet social needs and develop new markets.

"SUMURR exemplifies how Ford is using its global reach to address regional issues and causes around the world, and at the same time identify local social and technology entrepreneurs that we can partner with to further develop the kind of solutions that will shape our future," said K. Venkatesh Prasad, Ford's senior technical leader for open innovation, who oversaw the SUMURR technology development. "The fundamental aspects of what we did in rural India could very much wind up in the driveways of Detroit."

Data

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- Worldwide Taxes Paid

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Market Share and Sales

- Ford Motor Company Market Share – United States
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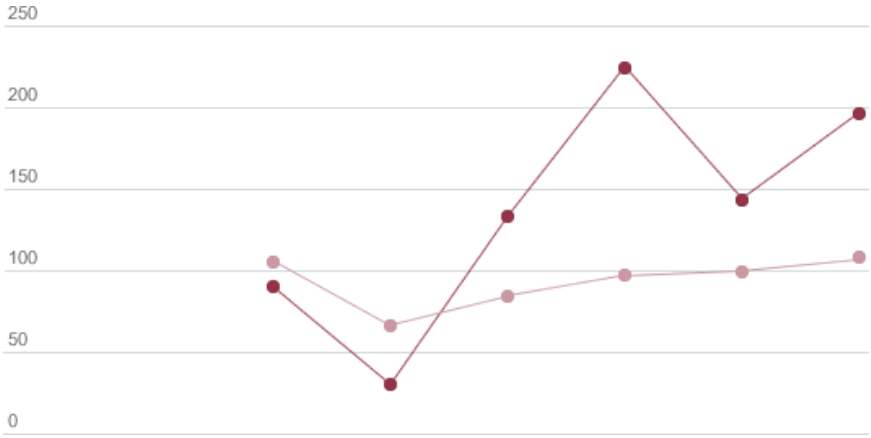
A. Cumulative Shareholder Return



	Base 2007	2008	2009	2010	2011	2012
S&P 500	105	66	84	97	99	109
Ford	90	30	133	224	143	196

Provided by third party: Bowne & Co., Inc.

Notes to Data

Updated data to reflect 2007 base.

Analysis

For more information, please see Ford's Annual Report.

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- Financial Health

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B. Selected Financial Performance Indicators

	2007	2008	2009	2010	2011	2012
Sales and revenue ($ billion)†	172.5	146.3	116.3	129	136	134.3
Income/(loss) from continuing operations ($ billion)†	(2.8)	(14.7)	2.7	6.6	20.2	5.7
Net income/(loss) ($ billion)†	(2.7)	(14.7)	2.7	6.6	20.2	5.7
Stock price range (per share) ($)	6.65–9.7	1.01–8.79	1.50–10.37	9.75–17.42	9.05–18.97	8.82–13.08
Diluted per share amount of income/(loss) from continuing operations ($)†	(1.4)	(6.46)	0.86	1.66	4.94	1.42
Diluted per share amount of net income/(loss) ($)	(1.38)	(6.46)	0.86	1.66	4.94	1.42
Cash dividends per share ($)†	0	0	0	0	0.05	0.15
Automotive gross cash ($ billion)[1]	34.6	13.4	24.9	20.5	22.9	24.3
Shareholder return (percent)‡	(10.4)	(66)	337	67.9	(36)	23

† Audited for disclosure in the Ford Annual Report on Form 10-K

‡ Provided by third party: Bowne & Co., Inc.

Notes to Data

1. Automotive gross cash includes cash and cash equivalents, net marketable and loaned securities and assets contained in a short-term Voluntary Employee Beneficiary Association (VEBA) trust.

Analysis

For more information, please see Ford's 10-K and 8-K and Annual Report.

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C. Profile of Ford Investors

Percent

	2007	2008	2009	2010	2011	2012
Institutional Investors:	69	57	47	57	48	51
Top 15	38	33	28	29	23	25
Others	31	24	19	28	25	26
Employees and Management	13	12	9	7	7	7
Individuals[1]	18	31	44	36	45	42

Provided by third party

Notes to Data

1. The ownership by individuals includes shares owned by the Ford family and by Ford employees and management outside of the Company savings plans.

Analysis

For more information, please see Ford's Annual Report.

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D. Worldwide Taxes Paid

$ million

	2007	2008	2009	2010	2011	2012
U.S. (Federal, State and Local)	1,299	780	674	617	567	713
Non U.S.	4,420	4,016	2,314	2,313	2,712	2,508
Total	5,719	4,796	2,988	2,930	3,279	3,221

Analysis

For more information, please see Ford's 10-K and 8-K and Annual Report.

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Data:

Product, Quality and Service

DATA ON THIS PAGE

A. GQRS "Things Gone Wrong" (TGW) (3 months in service)

Total "things gone wrong" per 1,000 vehicles

2007	2008	2009	2010	2011	2012
1,405	1,287	1,206	1,140	1,447	1,373

Third party rating

Notes to Data

Lower numbers show improvement. For the 2011 model year, we changed the GQRS survey to include additional questions on vehicle entertainment and information systems. Therefore, 2011 results are not comparable to previous years. The Global Quality Research System (GQRS) is a Ford-sponsored competitive research survey. The GQRS is a good indicator of other quality results.

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B. GQRS Customer Satisfaction (3 months in service)

Percent satisfied

2007	2008	2009	2010	2011	2012
76	77	80	82	68	72

Third party rating

Notes to Data

The Global Quality Research System (GQRS) is a Ford-sponsored competitive research survey. The GQRS is a good indicator of other quality results.

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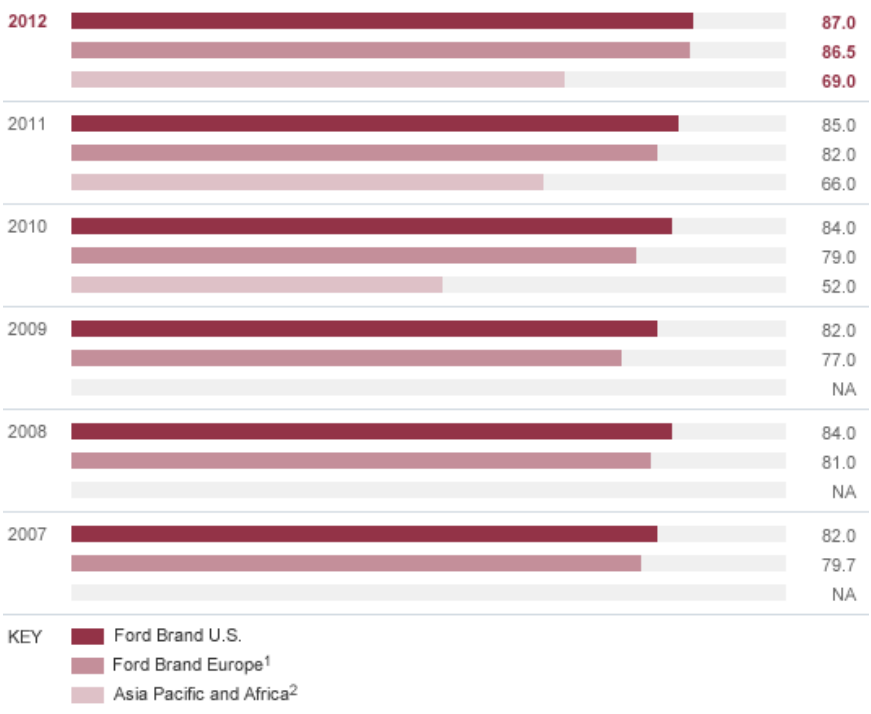
C. Sales Satisfaction with Dealer/Retailer

Net promoter score



	2007	2008	2009	2010	2011	2012
Ford Brand U.S.	82.0	84.0	82.0	84.0	85.0	87.0
Ford Brand Europe (UK, Germany, Italy, France, Spain)[1]	79.7	81.0	77.0	79.0	82.0	86.5
Asia Pacific and Africa[2]				52	66	69

Notes to Data

1. European sales and service satisfaction with dealers and retailers are based on 23 European markets including Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. In past years, the data was mis-labeled as reflecting only UK, Germany, Italy, France, and Spain.
2. We initiated the sales satisfaction with dealer/retailer in our Asia Pacific and Africa region in 2010.

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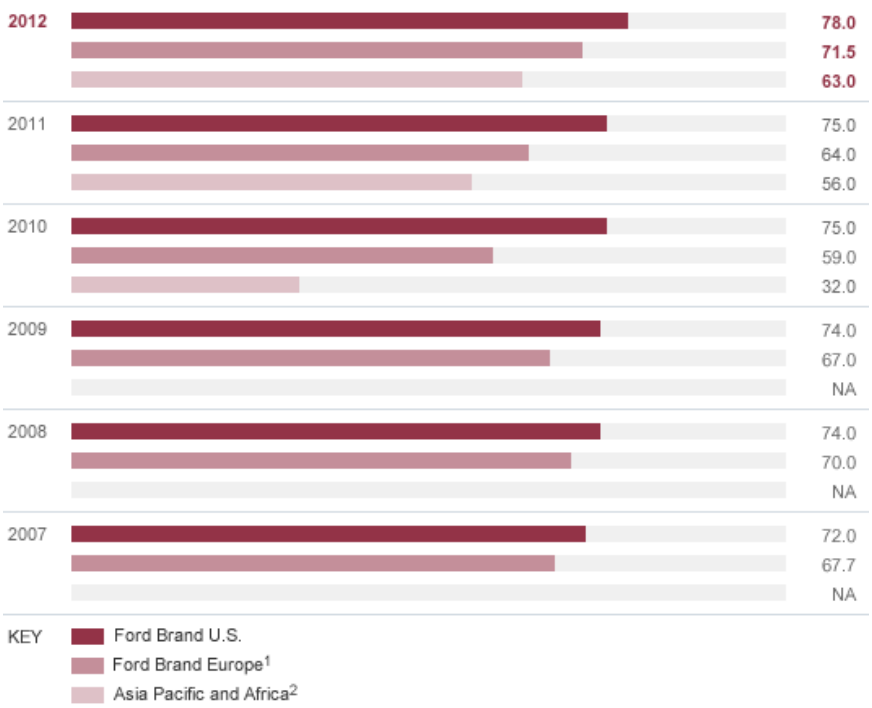
D. Service Satisfaction with Dealer/Retailer

Net promoter score



	2007	2008	2009	2010	2011	2012
Ford Brand U.S.	72.0	74.0	74.0	75.0	75.0	78.0
Ford Brand Europe (UK, Germany, Italy, France, Spain)[1]	67.7	70.0	67.0	59.0	64.0	71.5
Asia Pacific and Africa[2]				32.0	56.0	63.0

Notes to Data

Prior to 2008, only warranty repair visits were measured. Starting in 2009, customer-paid repair and maintenance visits are also included. These additions have had a small negative impact on the 2009 score.

1. European sales and service satisfaction with dealers and retailers are based on 23 European markets including Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. In past years, the data was mis-labeled as reflecting only UK, Germany, Italy, France, and Spain.
2. We initiated the service satisfaction with dealer/retailer in our Asia Pacific and Africa region in 2010.

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Market Share and Sales

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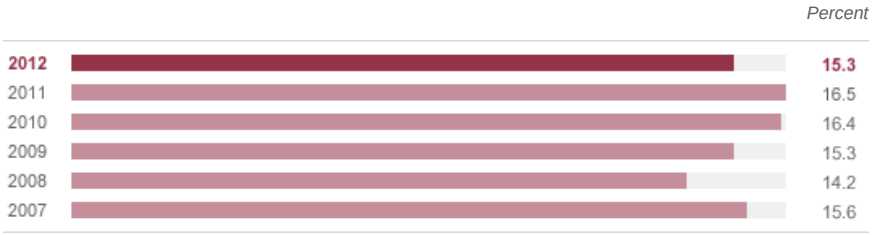
A. Ford Motor Company Market Share – United States



2007	2008	2009	2010	2011	2012
15.6	14.2	15.3	16.4	16.5	15.3

Reported to regulatory authorities

Notes to Data

For 2012, Ford's total U.S. market share was down 1.3 percentage points, while Ford's U.S. retail share of the retail industry declined seven tenths of a percentage point. The declines largely came from the discontinuation of the Crown Victoria and Ranger, capacity constraints, and reduced availability associated with our Fusion and Escape changeovers

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B. Ford Motor Company Market Share – Europe

Percent

2007	2008	2009	2010	2011	2012
10.9	10.0	9.1	8.4	8.3	7.9

Reported to regulatory authorities

Notes to Data

Ford remained Europe's No. 2 best-selling car brand for the fifth consecutive year in 2012, boosted by strong performance in the U.K. and growth in Russia. Ford's market share in its traditional 19 markets was 7.9% for the year, down 0.4 percentage points on 2011.

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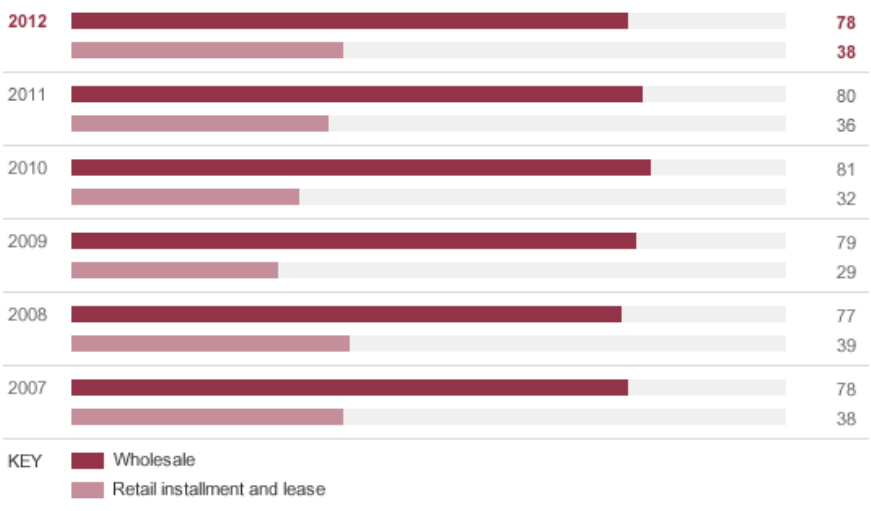
C. Ford Credit Financing Market Share – United States

Percent



	2007	2008	2009	2010	2011	2012
Wholesale	78	77	79	81	80	78
Retail installment and lease	38	39	29	32	36	38

Reported to regulatory authorities

These data include Ford, Lincoln and Mercury brands only.

Analysis

For more information on Ford Credit, please visit www.fordcredit.com. For more information on Ford Credit financial information, visit the Ford Credit investor center.

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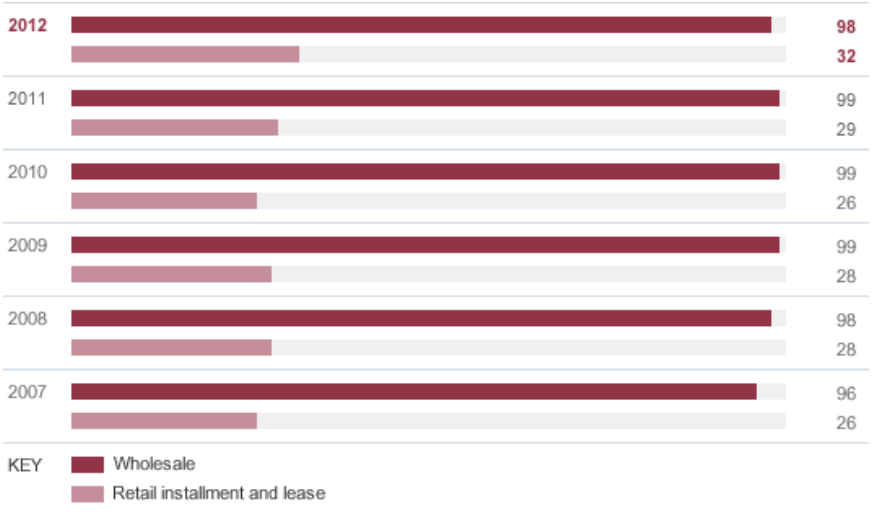
D. Ford Credit Financing Market Share – Europe

Percent



	2007	2008	2009	2010	2011	2012
Wholesale	96	98	99	99	99	98
Retail installment and lease	26	28	28	26	29	32

Reported to regulatory authorities

Notes to Data

These data include Ford brand only.

Analysis

For more information on Ford Credit, please visit www.fordcredit.com. For more information on Ford Credit financial information, visit the Ford Credit investor center.

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E. Summary of Vehicle Unit Sales

Thousands

2007	2008	2009	2010	2011	2012
6,553	5,407	4,817	5,524	5,695	5,668

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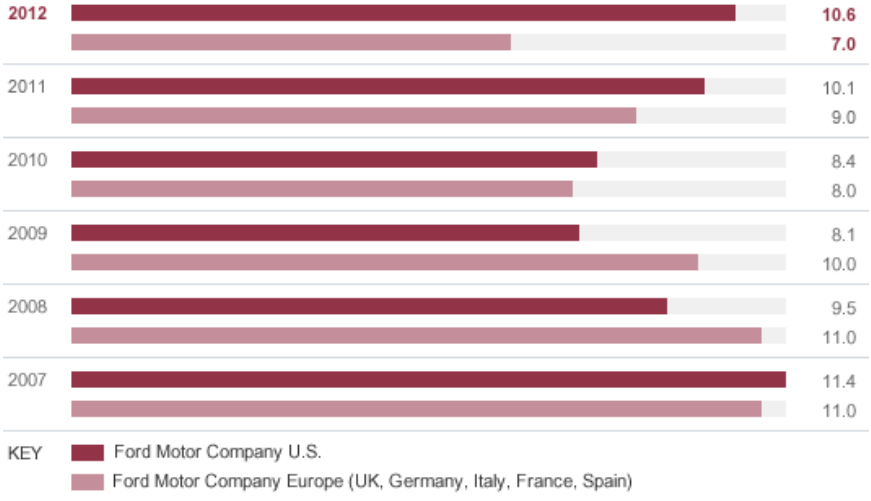
F. First-time Ford Buyers (Owners who Acquired a New Vehicle for the First Time)

Percent of first-time buyers



	2007	2008	2009	2010	2011	2012
Ford Motor Company U.S.	11.4	9.5	8.1	8.4	10.1	10.6
Ford Motor Company Europe (UK, Germany, Italy, France, Spain)	11.0	11.0	10.0	8.0	9.0	7.0

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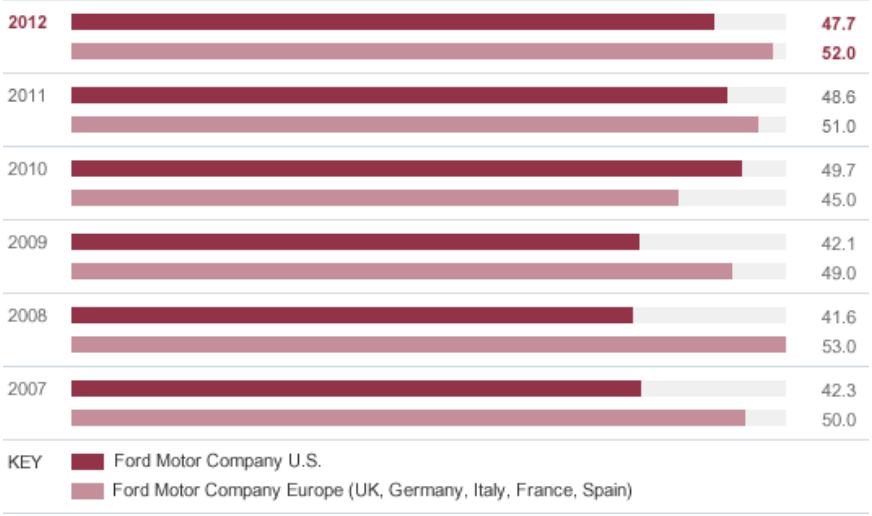
G. Owner Loyalty (Customers Disposing of a Ford Motor Company Product and Acquiring Another)

Percent loyal to corporation



	2007	2008	2009	2010	2011	2012
Ford Motor Company U.S.	42.3	41.6	42.1	49.7	48.6	47.7
Ford Motor Company Europe (UK, Germany, Italy, France, Spain)	50.0	53.0	49.0	45.0	51.0	52.0

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Innovation

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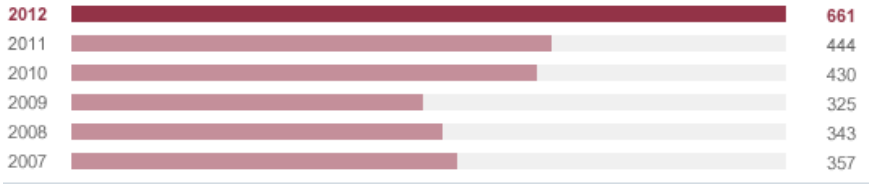
A. U.S. Utility Patents Issues to Ford and Subsidiaries

Number of patents issued



2007	2008	2009	2010	2011	2012
357	343	325	430	444	661

Notes to Data

Utility patents are patents that cover the useful features of an invention, and these are measures of technological innovation. We have generated a large number of patents related to the operation of our business and expect this portfolio to continue to grow as we actively pursue additional technological innovation. The average age for patents in our active patent portfolio is five years.

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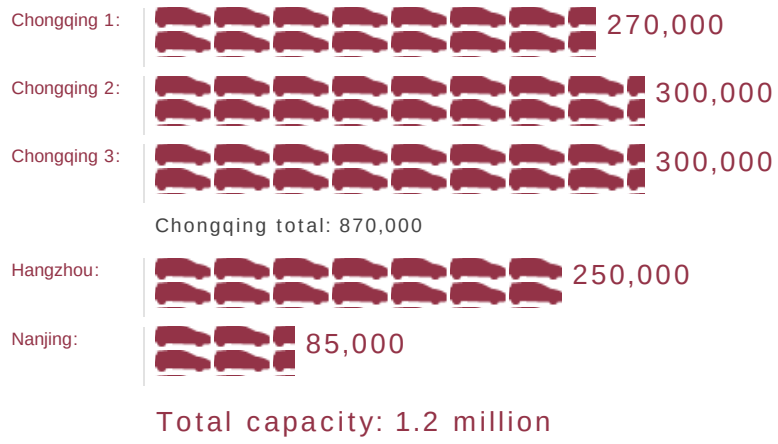
Case Study:

Joint Venture Expansion in Chongqing

Annual passenger vehicle capacity by 2015*



* Totals for Chongqing and Hangzhou are with our joint venture Changan Ford Automobile (CAF). The Nanchang plant is operated by Changan Mazda Automobile Corporation, Ltd. (CAM), a joint venture between Mazda and the Chongqing Changan Automobile Co., Ltd. The Nanchang plant provides contract manufacturing for Ford Motor Company.

Southeast Michigan is Ford's largest global manufacturing region. Halfway around the world, in the southwest Chinese city of Chongqing, sits our second largest, where we are undergoing our most rapid expansion in a half century, bringing together our best technology and manufacturing know-how to serve one of the world's fastest-growing markets for automobiles.

Our joint venture CAF already operates two passenger-car assembly plants in Chongqing. CAF has two more assembly plants under construction – Chongqing 3 and Hangzhou – and two powertrain plants under construction, including an engine and transmission plant.

CAF is investing approximately $600 million to build the Chongqing 3 assembly plant as we ramp up production capacity to meet demand in the world's largest auto market. Chongqing 3 will be able to produce 300,000 vehicles annually – the first of which is expected to roll off the line in 2014. Once Chongqing 3 comes online, the Chongqing region will be able to produce a total of 870,000 Ford vehicles each year.

China represents a huge opportunity for our Company. We plan to introduce 15 new vehicles and 20 new engines and transmissions in China by 2015 as part of our plan to broaden our product portfolio and powertrain offerings. The first of these 15 new products is the all-new Ford Focus, which is produced at the Chongqing 2 facility.

Using what we've learned about the benefits of flexible manufacturing at our full range of assembly plants, the production line at Chongqing 2, which opened in February 2012, is designed for maximum adaptability, enabling it to produce six different types of vehicles. This allows Ford to bring new vehicles to market faster and to test out the assembly of new vehicles while maintaining full production speed for existing vehicles. Chongqing 3, meanwhile, will have the flexibility to build up to seven different vehicle models.

As part of our growing sport utility, or crossover, vehicle lineup in China, Chongqing will produce the all-new EcoSport and all-new Kuga, both of which were showcased at auto shows in China in

Related links

This Report

» Ford Asia Pacific and Africa

2012. We also recently brought the Ford Explorer to China. These three SUVs (plus the popular Ford Edge, which is already available in China) appeal to Chinese consumers by offering versatility and practicality. Together with the Fiesta, Focus, Mondeo and S-MAX, these SUVs offer a complete range of Ford's high-quality, fuel-efficient and safe passenger vehicles with smart technologies and driving dynamics that Chinese consumers want and value.

The Chongqing plants use advanced and environmentally friendly technologies that dramatically cut water, chemical and electricity usage, and significantly reduce carbon emissions. (Ford was the first automaker in China to voluntarily disclose plant-level greenhouse gas emissions.) The plants incorporate best practices to ensure that high-quality vehicles are produced efficiently and with reduced environmental impact.

In Chongqing 2, for example, state-of-the-art technologies are reaping big rewards. By implementing energy-saving equipment throughout the plant, we're able to save 58 million kilowatt hours a year. That's enough to power almost 20,000 households in a major Chinese city for a year. A variety of more-efficient water technologies allows the plant to recycle 61,000 cubic meters of water a year – enough to fill 24 Olympic-sized swimming pools.

The plants in Chongqing also incorporate Ford's global manufacturing operating system, designed to improve efficiencies, increase capacity utilization and make our Company an industry leader in lowest total cost production.

As we bring on new facilities, such as Chongqing 3, we are expanding the use of common manufacturing processes and standard systems for tracking material, delivery, maintenance and environmental management so that new and existing plants are aligned in how they operate. We are also making broader use of virtual tools that reduce the cost of new plants and improve the efficiencies of new model changeovers.

Chongqing isn't our only focus in China. Also in 2012, Ford and our joint venture broke ground on a new passenger vehicle assembly plant in Hangzhou. The joint venture is investing $760 million in the new plant, bringing Ford's total investment in China to approximately $4.9 billion since 1995. Total annual vehicle capacity for CAF will be more than 1.2 million units in 2015.

Robert Shanks

Executive Vice President and Chief Financial Officer
Ford Motor Company

Ford Motor Company is in a much better financial position today than it was several years ago, with 2012 marking the third consecutive year of $8 billion or more in annual operating profits. Despite this strong bottom-line performance, however, some observers see us as a "tale of two companies." On the one hand, we are very profitable and generating superb operating margins in Ford's North American business, while continuing to deliver solid results at the Ford Motor Credit Company as well. On the other hand, we are incurring substantial losses in Europe, saw South American profits decline significantly from 2011, and are continuing to operate around the breakeven point in Asia Pacific and Africa, despite heavy investments for growth in that region.

So how should we think about our 2012 performance and its variability by region in the context of sustainability?

Financial sustainability in our industry can be thought of as the ability to maintain an investment credit rating throughout an economic cycle; to maintain profitability in all years of the cycle; and to provide shareholders with competitive returns on their investment in Ford over the cycle. Two keys to accomplishing this are, first, to have a strong balance sheet that can withstand the stresses of a downturn and, second, to ensure the business is profitable across all regions of the world and across all vehicle segments in which we participate. Obviously, we have more work ahead of us in both of these areas, but we're clearly much closer to accomplishing both objectives than we ever have been.

It started with us returning to investment grade last year. In the spring of 2012, the second of two major rating agencies brought us back to investment grade level. This was a tremendous validation of the work and sacrifices of so many people. The immediate effect of the upgrade was that it gave us greater flexibility in funding our business, and we already have seen the benefits with lower-cost financing options available to us and to Ford Motor Credit Company. Now, we need to progress even further into investment grade, because eventually there will be another economic downturn, and we don't want to run the risk of slipping back.

The second opportunity for financial sustainability is to improve the balance of where we generate our profits. In terms of the source of our profitability, the fact remains that, in 2012, we were still largely dependent on the North American market and larger vehicles and trucks.

Certainly, we should celebrate our progress and ensure that we sustain – and strengthen – the position we have built over the years in North America and in larger vehicles and trucks. Our present reliance on this market and these vehicle segments, however, leaves us exposed to changes in the North American economy and to consumer shifts away from larger vehicles and trucks. We experienced the negative consequences of such exposure during the economic recession in the U.S. several years ago, which was exacerbated by American consumers shifting away from larger vehicles.

Our ONE Ford plan will better balance our strength in North America and in the larger vehicle segments by enabling us to deliver substantially greater levels of profitability outside North America

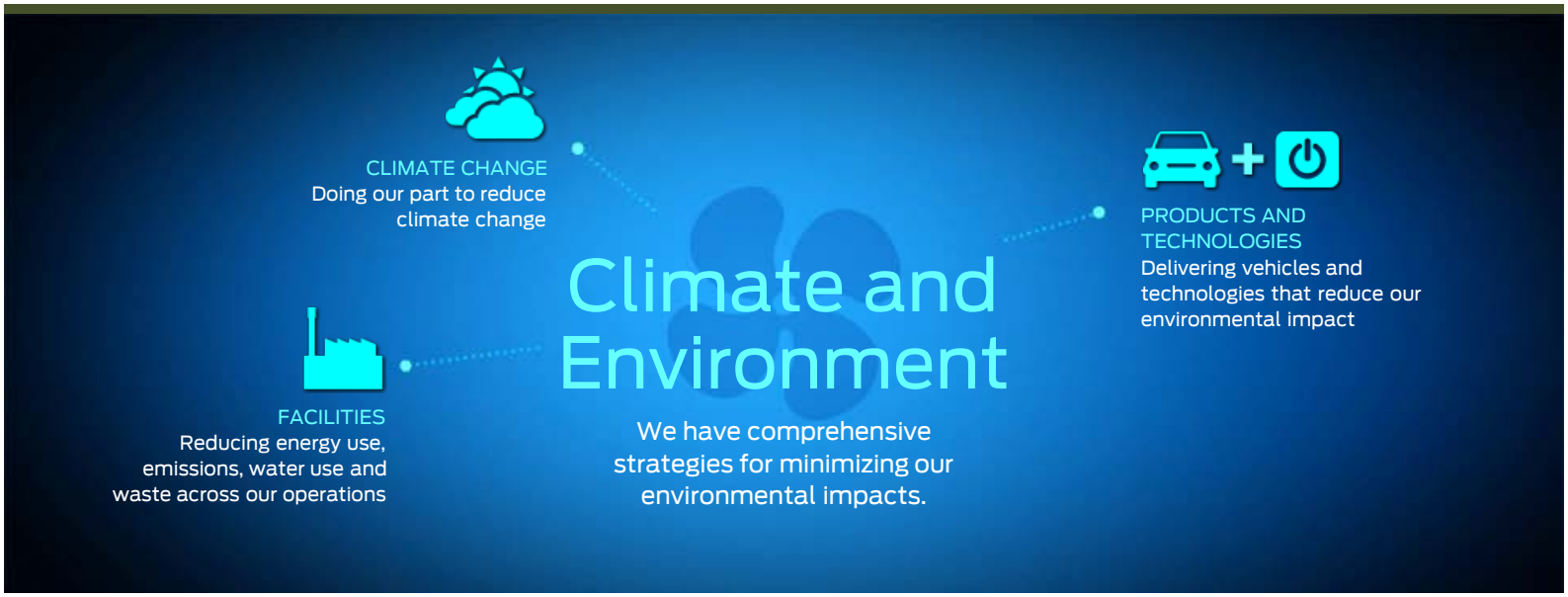
and in the small and medium vehicle segments. The plan also gives us the opportunity to grow profitably by participating more fully in the markets and vehicle segments that are expected to be the drivers of growth in our industry over the next decade.

To fully realize a better balanced footprint of profitability, we must strengthen our business in South America by transitioning our product lineup from legacy products to global ONE Ford products, while responding to trade and currency policy changes from major governments in the region. In Europe, we must implement our transformation plan to return to profitability by mid-decade, while closely monitoring the external environment to ensure no further action is required. And in our Asia Pacific and Africa region, our opportunity is to continue to carry out our growth strategy for the largest and fastest-growing region in our industry, with meaningful financial results flowing through to our bottom line.

I've been with Ford for 36 years, and the Company has changed enormously over that time. It used to be that the balance sheet was something only the CFO and the CEO cared about. Today, the ONE Ford plan has changed the level of transparency so that everyone on the senior leadership team understands their role in making sure we've got a strong Company. We're also much more proactive in understanding the importance of sustainability in the broadest sense – not only in relation to our products, but also in the quality of the financial results that we derive from them.

The global economy is changing so quickly that it's impossible to imagine what the auto market of the future will look like. As disposable incomes increase in Brazil, Russia, India, China and other emerging economies, auto sales will continue to boom – and that will have an impact on urban areas that already are congested. Ford is exploring what our role will be in that transformation. This may create new growth opportunities that we don't understand today in terms of transportation solutions. But whatever those solutions may be, we want to be part of the answer.

I'm not a soothsayer, but looking ahead 20 years, I think you'll see a very different Ford Motor Company – one that truly is a reflection of the whole world in which we live and operate.



At Ford, we have been working for many years to minimize the environmental impacts of our vehicles and operations.

For example, we are doing our part to prevent or reduce the potential for environmental, economic and social harm due to climate change. We have a science-based strategy to reduce greenhouse gas (GHG) emissions from our products and operations that focuses on doing our share to stabilize carbon dioxide (CO_2) concentrations in the atmosphere. We are on track to meet the central elements of our strategy: Each of our new vehicles is a leader, or among the leaders, in fuel economy, and we are reducing GHG emissions across our global product portfolio. We have also set a goal to reduce our facility CO_2 emissions per vehicle by 30 percent by 2025 compared to a 2010 baseline, building on our reduction of 31 percent from 2000 to 2010.

We are committed to reducing other elements of the environmental footprint of our vehicles and operations as well. For example, we continue to increase the use of sustainable materials in our vehicles. And, we reduced waste to landfill by 17 percent per vehicle from 2011 to 2012 and announced a new plan to reduce waste sent to landfill by 40 percent on a per-vehicle basis between 2011 and 2016 globally. We are also continuing to reduce emissions of volatile organic compounds from our operations through the use of innovative technologies.

In this section we discuss our approach to the issue of climate change and the ways we are working to reduce the environmental footprint of our products and operations.

We plan to reduce waste sent to landfill per vehicle by

40 percent

between 2011 and 2016 globally.

Electrifying Choices

We're continuing to expand our range of affordable, fuel-efficient and advanced technology vehicles, including six electrified vehicle options and eight vehicles that get 40 mpg or better.

Reducing Energy Use

In 2012, we improved global energy efficiency by 6.4 percent against a 2011 year baseline normalized for weather and production levels.

Design for Lifecycle Sustainability

We use a lifecycle approach to assess and minimize the total adverse impacts of our vehicles from a sustainability perspective – from raw materials extraction through manufacturing and use to end of life. This approach considers and works to minimize negative impacts upfront in product design decisions. Called Design for Sustainability (DfS), the approach is integrated and holistic, to ensure that we achieve a balance between environmental, social and economic aspects in our product development process.

We are continuing to advance how we apply DfS principles. For example, we developed a Product Sustainability Index (PSI) tool, which has been used in our European product development operations since 2002. This tool helps us to assess and find opportunities to reduce the impacts of our products over their entire lifecycle – including environmental impacts such as global warming from greenhouse gas emissions, societal questions such as pedestrian protection and economic issues such as cost of ownership. The PSI is used by the engineering teams that are responsible for product development decisions. We use other lifecycle assessment approaches in research and sustainability departments to address general strategic questions that are not necessarily linked to individual vehicle development programs.

We are working to improve the lifecycle sustainability of our products and operations across our value chain. Among our product sustainability efforts, we are increasing our use of sustainable materials and eliminating undesirable materials such as heavy metals and substances that are known to be common allergens. We are also working to reduce greenhouse gases and other emissions from our facilities and vehicles by developing cleaner and more energy-efficient production processes, improving the efficiency of our packaging and transportation logistics and introducing cleaner and more fuel-efficient vehicles. Downstream in our value chain, we are working with drivers to educate them on ways to increase fuel economy and reduce vehicle emissions – for example, through our EcoMode and Smart Gauge® with EcoGuide driver interface technologies and our eco-driving program. Upstream, we are working with our suppliers to increase the sustainability of our products throughout the supply chain.

Related links

This Report

- Product Sustainability Index
- Sustainable Materials
- Greening Our Operations
- Greening Our Products
- Supply Chain

Quantifying Our Environmental Impact

The first step in improving the lifecycle performance of our products is to understand the environmental aspects of our products and the potential environmental impacts associated with them.[1] We use lifecycle assessment to understand the impacts of our vehicles. Lifecycle assessment tracks emissions generated and materials and energy consumed for a product system over its entire lifecycle, from cradle to grave, including raw material acquisition, material production, product manufacture, product use, product maintenance and disposal at end of life. For vehicles, this includes the environmental burdens associated with mining ores, making materials (e.g., steel, aluminum, brass, copper, plastics, etc.), fabricating them into parts, assembling the parts into a vehicle, operating the vehicle over its entire lifetime, producing fuel for the vehicle, maintaining the vehicle and finally dismantling the vehicle at the end of its life, recycling and reusing materials as possible and disposing of materials as necessary. Lifecycle assessment is an essential tool for thinking about the environmental impacts of complex systems.

Estimates of vehicles' total lifecycle impacts vary depending upon the specifics of the vehicle analyzed and the vehicle's powertrain and fuel type. For example, assessments of the Ford Fiesta, Focus and Mondeo – conducted using our Product Sustainability Index (PSI) tool – found significant differences in lifecycle carbon dioxide (CO_2) emissions between the three vehicle models and between different engine and fuel types within a vehicle model. In all cases the "vehicle use" phase produces the largest portion of lifecycle CO_2 emissions (for example, 77 percent of the total for the Focus diesel and 83 percent for the Mondeo gasoline). Vehicles with better fuel economy do reduce the use phase's contribution to lifecycle CO_2 emissions; however, the use phase remains the dominant phase for most environmental impacts. See the table below for comparisons of lifecycle CO_2 emissions across these three vehicles.

Lifecycle CO_2 Emissions Comparison across Vehicle Models, Engines and Fuel Types

Vehicle Model	Engine	Fuel Type	Lifecycle CO_2 emissions
2011 Ford Fiesta	1.25 L	Gasoline	30 metric tons *
2011 Ford Fiesta	1.6 L	Diesel	21 metric tons
2011 Ford Focus	1.6 L	Gasoline	32 metric tons
2011 Ford Focus	1.6 L	Diesel	27 metric tons
2011 Ford Kuga	2.0 L	Diesel	36 metric tons
2011 Ford Mondeo	2.0 L	Gasoline	42 metric tons
2011 Ford Mondeo	2.0 L	Diesel	37 metric tons

* 1 metric ton = 1,000 kg = 0.98 U.K. tons = 1.1 U.S. tons

The PSI results also show that these vehicles made progress on multiple aspects of sustainability compared to the previous models. For more information on the PSI, please see the PSI section.

Assessing the Lifecycle Emissions of Electrified Vehicles

Assessing vehicles' lifecycle energy consumption and greenhouse gas emissions is becoming a more complicated task as we add alternative fuels and powertrains into our vehicle lineup. For conventional gasoline- and diesel-powered vehicles, most of the energy is consumed and most of the lifecycle CO_2 emissions are released when the vehicles are driven, rather than when they are

Related links

This Report
- Electrification: A Closer Look
- Product Sustainability Index

Vehicle Websites
- Focus Electric
- C-MAX Energi
- Fusion Energi
- Fusion Hybrid
- C-MAX Hybrid
- Lincoln MKZ Hybrid

manufactured, maintained or recycled at end of life. As vehicle fuel efficiency improves and lower-carbon fuels are made available, the relative contribution of CO_2 emissions from the in-use phase will decrease. For plug-in hybrid electric vehicles (PHEVs), battery electric vehicles (BEVs) and hydrogen-powered fuel cell vehicles (FCVs), most of the lifecycle CO_2 emissions are released during the production of the electricity or the hydrogen that provides the energy for the vehicle. A systems perspective that considers the full impacts of both the vehicle technology and fuel technology is thus required when considering the CO_2 emissions and energy use associated with alternative vehicle technologies. BEVs and FCVs are capable of achieving very low CO_2 emissions, particularly when powered by low-CO_2 electricity or low-CO_2 hydrogen. For all of our products, the emissions associated with the generation and delivery of their fuel has an impact on their lifecycle emissions.

In 2012, we launched our carbon emissions and fuel cost calculator to help our fleet sales teams in the U.S. and Canada work with customers to assess the emissions benefits of alternative-fuel vehicles. This calculator uses fleet customers' personalized input factors, such as vehicle type (e.g., hybrid, battery electric, diesel), electricity source by region (e.g., coal, nuclear, renewables, natural gas) and likely driving patterns (e.g., stop-and-go city traffic, highway driving or a mix). These key factors help determine the environmental benefits the customer might expect to achieve with each type of vehicle. For a customer deciding where to place an electric vehicle in their fleet, the calculator shows that the Focus Electric emits about 70 g CO_2/km using electricity from the low-carbon California grid but more than twice as much, about 150 g CO_2/km, in the more coal-intensive Southeast U.S. The calculator enables our fleet customers to both save money and protect the environment.

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1. *Environmental aspects* is a term used in the ISO 14001 framework to denote elements of an organization's activities, products and services that can interact with the environment. Potential environmental impacts include any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services. Local Ford facilities use corporate lists of environmental aspects and potential impacts to identify and amplify those aspects that apply to their operations.

Product Sustainability Index

Ford's European operations pioneered the development of the Product Sustainability Index (PSI), a holistic Design for Sustainability approach that incorporates societal and economic aspects as well as environmental aspects[1] into our lifecycle design approach.

Ford's PSI tracks eight product attributes identified as key sustainability elements of a vehicle: lifecycle global warming potential (mainly carbon dioxide emissions); lifecycle air-quality potential (other air emissions); the use of sustainable materials (recycled and renewable materials); vehicle interior air quality (including allergy certification from TÜV Rheinland, a product-testing organization); exterior noise impact (drive-by noise); safety, as measured by the European New Car Assessment Program (including for occupants and also pedestrians); mobility capability (seat and luggage capacity relative to vehicle size); and lifecycle ownership costs (full costs for the customer over the first three years).

Since 2002 we have been applying the PSI as a sustainability management tool in the development of all of our major new European vehicles. The PSI process was used to develop the 2006 Ford S-MAX and Galaxy, as well as the 2007 Mondeo, 2008 Kuga, 2009 Fiesta and 2011 Focus. The Focus is the first Ford vehicle developed using the PSI system that is being sold globally. And, the PSI assessment of the Focus was the first PSI study conducted jointly by Ford of Europe and Ford North America. As a result of using the PSI assessment system, all of these models have shown improvements in environmental, social and/or economic performance when compared to the previous models. The chart below shows specific performance and areas of improvement for each model. The PSI will be used on all future products developed by Ford of Europe. Detailed reports on the PSI analysis for these vehicles can be downloaded from Ford of Europe's website.

In 2012, we applied the PSI tool to various propulsion technologies for a Focus vehicle type. We learned that for a battery electric vehicle (BEV) variant, the carbon footprint of the battery is only about 10 percent of the overall lifecycle CO_2 emissions of a modern gasoline Focus. The carbon footprint of the electricity source used to charge the electric vehicle determines whether or not the Focus BEV is superior to a conventional Focus. In our study, we assumed the Focus BEV used electricity from sources below 400 g of lifecycle CO_2/kWh – such as the electricity currently used in California, Norway, Switzerland and France. Based on this study, we found that the most cost-efficient, low-CO_2 vehicles for customers are the Focus variants powered by the EcoBoost® engine or advanced diesel engines. In 2013, we will continue in this study by assessing plug-in hybrid vehicles.

PSI Assessed Model Performance[2]

Lifecycle Global Warming Potential[2]

Measurement Method

Emissions of CO_2 and other greenhouse gases from raw material extraction to material, part and vehicle production, driving period (150,000 km, incl. air conditioning) and final recycling/recovery (i.e., full vehicle lifecycle, cradle-to-cradle)

	Performance*	Better/Worse than Previous Model
2006 Ford S-MAX 2.0L TDCi with DPF	39 metric tons CO_2 equivalent	Similar
2006 Ford Galaxy 2.0L TDCi with DPF	40 metric tons CO_2 equivalent	Similar
2007 Ford Mondeo 2.0L TDCi Diesel with DPF	37 metric tons CO_2 equivalent	Better
2008 Ford Kuga	37 metric tons CO_2 equivalent	No previous model

2009 Ford Fiesta ECOnetic, Diesel	21 metric tons CO_2 equivalent	Better
2009 Ford Fiesta, Gasoline	30 metric tons CO_2 equivalent	Better
2011 Ford Focus, 1.6 L, Gasoline	32 metric tons CO_2 equivalent	Better
2011 Ford Focus, 1.6 L, Diesel	27 metric tons CO_2 equivalent	Better

*1 metric ton = 1,000 kg

Lifecycle Air Quality

Measurement Method

Summer smog-related emissions from raw material extraction to material, part and vehicle production, driving period (150,000 km, incl. air conditioning) and final recycling/recovery (i.e., full vehicle lifecycle, cradle-to-cradle)

	Performance	Better/Worse than Previous Model
2006 Ford S-MAX, 2.0L TDCi with DPF	37 kg ethene equivalent	Similar
2006 Ford Galaxy, 2.0L TDCi with DPF	37 kg ethene equivalent	Similar
2007 Ford Mondeo, 2.0-L TDCi Diesel with DPF	35 kg ethene equivalent	Better
2008 Ford Kuga	35 kg ethene equivalent	No previous model
2009 Ford Fiesta ECOnetic, Diesel	22 kg ethene equivalent	Better
2009 Ford Fiesta, Gasoline	32 kg ethene equivalent	Better
2011 Ford Focus, 1.6 L, Gasoline	30 kg ethene equivalent	Better
2011 Ford Focus, 1.6L Diesel	25 kg ethene equivalent	Better

Sustainable Materials

Measurement Method

Use of recycled and natural materials

	Performance	Better/Worse than Previous Model
2006 Ford S-MAX 2.0L TDCi with DPF	18 kg of non-metals	Better
2006 Ford Galaxy 2.0L TDCi with DPF	18 kg of non-metals	Better
2007 Ford Mondeo 2.0L TDCi Diesel with DPF	7.5% of non-metals	Better
2008 Ford Kuga	6% of non-metals	No previous model
2009 Ford Fiesta ECOnetic, Diesel	8.5% of non-metals	Better
2009 Ford Fiesta, Gasoline	9% of non-metals	Better

Substance Management

	Performance	Better/Worse than Previous Model
2006 Ford S-MAX, 2.0L TDCi with DPF	Substance management, TÜV-tested pollen filter efficiency and allergy-tested label	Better
2006 Ford Galaxy, 2.0L TDCi with DPF	Substance management, TÜV-tested pollen filter efficiency and allergy-tested label	Better
2007 Ford Mondeo, 2.0L TDCi Diesel with DPF	Substance management, TÜV-tested interior and pollen filter efficiency	Better
2008 Ford Kuga	Substance management, TÜV-tested interior and pollen filter efficiency	No previous model
2009 Ford Fiesta ECOnetic, Diesel	Substance management,	Better

	TÜV-tested interior and pollen filter efficiency	
2009 Ford Fiesta, Gasoline	Substance management, TÜV-tested interior and pollen filter efficiency	Better

Drive-by-Noise

Measurement Method

Decibel level weighted to human ear dB(A)

	Performance	Better/Worse than Previous Model
2006 Ford S-MAX, 2.0L TDCi with DPF	71 dB(A)	Better
2006 Ford Galaxy, 2.0L TDCi with DPF	71 dB(A)	Better
2007 Ford Mondeo 2.0L, TDCi Diesel with DPF	69 dB(A)	Similar
2008 Ford Kuga	72 dB(A)	No previous model
2009 Ford Fiesta ECOnetic, Diesel	69 dB(A)	Better
2009 Ford Fiesta, Gasoline	72 dB(A)	Similar
2011 Ford Focus, 1.6L Gasoline	66 dB(A)	Better
2011 Ford Focus, 1.6L Diesel	68 dB(A)	Better

Safety

Measurement Method

Complex method, structural stability, occupant safety, and pedestrian safety; active safety elements, etc., including European New Car Assessment Program (Euro NCAP) stars

	Performance	Better/Worse than Previous Model
2006 Ford S-MAX, 2.0L TDCi with DPF	Euro NCAP safety rating: 5 stars for adult occupant protection, 4 stars for child protection and 2 stars for pedestrian protection	Better
2006 Ford Galaxy, 2.0L TDCi with DPF	Euro NCAP safety rating: 5 stars for adult occupant protection, 4 stars for child protection and 2 stars for pedestrian protection	Better
2007 Ford Mondeo, 2.0L TDCi Diesel with DPF	Euro NCAP safety rating: 5 stars for adult occupant protection, 4 stars for child protection and 2 stars for pedestrian protection	Better
2008 Ford Kuga	Euro NCAP safety rating: 5 stars for adult occupant protection, 4 stars for child occupant protection and 3 stars for pedestrian protection	No previous model
2009 Ford Fiesta ECOnetic, Diesel	5-star Euro NCAP rating for adult occupant safety; electronic stability control available for all versions	Better
2009 Ford Fiesta, Gasoline	5-star Euro NCAP rating for adult occupant safety; electronic stability control available for all versions	Better
2011 Ford Focus, Gasoline and Diesel	5-star overall safety rating, plus 4 Euro NCAP Advanced rewards for Active City Stop, Lane Keeping Aid, Forward Alert and Driver Alert	Better

Mobility Capacity

Measurement Method

Mobility service (including seats, luggage) to vehicle size; measured as vehicle shadow in m^2 and luggage areas in liters

	Performance	Better/Worse than Previous Model
2006 Ford S-MAX, 2.0L TDCi with DPF	10.25 m^2 shadow area, 1,171 liter luggage, 5 seats	Better
2006 Ford Galaxy, 2.0L TDCi with DPF	10.4 m^2 shadow area, 435 liter luggage, 7 seats	Similar
2007 Ford Mondeo, 2.0L TDCi Diesel with DPF	9 m^2 shadow area, 530 liter luggage, 5 seats	Better
2008 Ford Kuga	9.5 m^2 shadow area, 410 liter luggage, 5 seats	No previous model – among best in class
2009 Ford Fiesta ECOnetic, Diesel	7.5 m^2 shadow area, 295 liter luggage compartment	Better
2009 Ford Fiesta, Gasoline	7.5 m^2 shadow area, 295 liter luggage compartment	Similar
2011 Ford Focus, Gasoline and Diesel	8.76 m^2 shadow area, 363 liter luggage compartment	Similar

Lifecycle Cost

Measurement Method

Sum of vehicle price and three years' service (fuel cost, maintenance cost, taxation) minus residual value

	Performance*	Better/Worse than Previous Model
2006 Ford S-MAX, 2.0L TDCi with DPF	Approx. €22,100	Better
2006 Ford Galaxy, 2.0L TDCi with DPF	Approx. €23,200	Better
2007 Ford Mondeo, 2.0L TDCi Diesel with DPF	Approx. €18,300	Better
2008 Ford Kuga	Approx. €19,100	No previous model
2009 Ford Fiesta ECOnetic, Diesel	Approx. €13,000	Similar
2009 Ford Fiesta, Petrol	Approx. €11,000	Better
2011 Ford Focus, 1.6L Gasoline	Approx. €16,400	Better
2011 Ford Focus, 1.6L Diesel	Approx. €16,700	Better

*No guarantee that the costs reflect market conditions (in particular dependent on assumed differences in residual value and running cost).

Both Ford's own internal assessments and external assessments have found the PSI to be an effective lifecycle assessment and design tool. An external study, conducted by experts in lifecycle science and sustainability, found the PSI to be a design and analysis step that provides a full sustainability assessment and meets the requirements of ISO 14040, the international lifecycle assessment standard. The PSI assessments of the 2006 S-MAX and Galaxy vehicles were certified against the ISO rules for Lifecycle Assessment. This certification process also verified the overall PSI methodology used for all subsequent PSI-developed models.

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2. PSI-rated models are only available in Europe.

Climate Change

Ford is committed to doing our share to prevent or reduce the potential for environmental, economic and social harm due to climate change.

We have a comprehensive, science-based global strategy to reduce greenhouse gas (GHG) emissions from our products and processes while working cooperatively with the public and private sectors to advance climate change solutions. We are taking a holistic approach to the issue, recognizing that it affects all parts of our business and is interconnected to other important issues, from water availability and energy security to human rights.

We believe our commitment to addressing the climate change issue in a comprehensive and strategic way is one of the factors that has helped to positively transform our Company's current and future products and prospects.

Our Commitment

Our climate change strategy is based on doing our share to stabilize carbon dioxide (CO_2) concentrations in the atmosphere at 450 parts per million (ppm), the level that many scientists, businesses and governmental agencies believe may avoid the most serious effects of climate change. This commitment includes the following:

- Each new or significantly refreshed vehicle will be best in class, or among the best in class, for fuel economy
- From our global portfolio of products, we will reduce GHG emissions consistent with doing our part for climate stabilization – even taking into account sales growth
- We will reduce our facility CO_2 emissions by 30 percent from 2010 to 2025 on a per-vehicle basis and average energy consumed per vehicle by 25 percent from 2011 to 2016 globally

For an in-depth look at the science behind our commitment, please see Ford's Science-Based CO_2 Targets.

Our technology migration plan for achieving vehicle CO_2 emissions reductions – embodied in our Sustainable Technologies and Alternative Fuels Plan – maps the road we're taking to achieve our product goals.

Our Progress

We are on track to meet our commitments. We are making progress by adding advanced technologies to all our products and offering high-value, attractive models that are more fuel efficient while still meeting customer expectations for utility and performance. We also continue to invest in energy-efficiency improvements at our facilities worldwide and to assess carbon emissions in our supply chain through multi-stakeholder projects.

Among our recent and upcoming actions, we:

- Reduced fleet-average CO_2 emissions from our 2012 model year U.S. new vehicles by 15 percent compared to the 2007 model year
- Reduced fleet-average CO_2 emissions from our European vehicles by 14 percent from the 2006 to 2012 calendar years
- Reduced CO_2 emissions from our global operations in 2012 by 1 percent on a per-vehicle basis, compared to 2011
- Implemented three more engines with our patented EcoBoost® fuel-saving technology – in 2013, we expect to be producing approximately 1.5 million EcoBoost engines globally, about 200,000 more than originally expected
- For the 2012 model year, began selling the Focus Electric, which gets a combined 105 miles per gallon (mpg) equivalent (according to the U.S. Environmental Protection Agency), making it the most fuel-efficient compact vehicle in the U.S. at the time of launch
- Introduced two plug-in hybrid electric vehicles to customers in the U.S.: the C-MAX Energi and

Related links

This Report

- Greening Our Products
- Greening Our Operations
- Sustainable Technologies and Alternative Fuels Plan
- Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance

Fusion Energi

- Offered three hybrid electric vehicle models: the Ford Fusion, Ford C-MAX and Lincoln MKZ
- In Europe, offered 39 models and variants that achieve a CO_2 emissions level of 130 grams per kilometer (g/km), and nine that achieve less than 100 g/km
- In North America starting in 2012, offered eight models that provide 40 mpg or better – compared to 2009, when our most fuel-efficient vehicle achieved 35 mpg

We discuss our progress on vehicle fuel efficiency and CO_2 emissions in more detail in the Greening Our Products section and our progress in reducing facility-related energy use and CO_2 emissions in the Greening Our Operations section.

Supporting Climate Change Policies

Neither Ford nor the auto industry can achieve climate stabilization alone. Reducing emissions by the amount required calls for an integrated approach – a partnership of all stakeholders, including the automotive industry, the fuel industry, government and consumers. It can only be achieved by significantly and continuously reducing GHG emissions over a period of decades in all sectors of the economy. In the transportation sector, this means improving vehicle fuel economy, developing lower-carbon fuels and working with government on complementary measures to encourage consumers to purchase these more fuel-efficient vehicles and lower-carbon fuels. We are committed to working with all key stakeholders to create policies that further promote the development of lower-carbon fuels and other complementary measures.

If there is a mismatch between available fuels, vehicles and consumers, climate stabilization goals will not be met. Accordingly, we are committed to advocating for effective and appropriate climate change policy. We are promoting comprehensive market-based policy approaches that will provide a coherent framework for GHG emission reductions, so that companies like ours can move forward in transforming their businesses with a clear understanding of their obligations.

In This Section

In this section we first provide an overview of the climate change issue and of Ford's greenhouse gas emissions. We also discuss the risks and opportunities that climate change poses for Ford and our overall climate change strategy. Finally we discuss climate change public policy issues and Ford's climate change partnerships.

The Issue

Climate change is the result of an increase in heat-trapping (greenhouse) gases in the atmosphere. Carbon dioxide (CO_2) is the major long-lived greenhouse gas (GHG). The burning of fossil fuels (to provide electricity, heat and transportation, and to support industry and agriculture), as well as deforestation, leads to net emissions of CO_2 and increased levels of atmospheric CO_2. The atmospheric concentration of CO_2 has increased from a preindustrial level of 270–280 parts per million (ppm) to a level of approximately 394 ppm at the beginning of 2013 (see Figure 1).

Global temperature records have been reported independently by scientists at the National Aeronautics and Space Administration in the U.S., the National Oceanic and Atmospheric Administration in the U.S., the Climate Research Unit at the University of East Anglia in the U.K., and the Japanese Meteorological Agency. The records from these four independent groups are in good agreement and show a distinct warming trend over the past century. The past decade was the warmest decade in the instrumental temperature record. As shown in Figure 2, the warming trend is continuing, and 2012 was among the warmest years on record. Independent measurements of rising sea levels, increasing acidification of the oceans, loss of Arctic sea ice and the retreat of glaciers around the world are consistent with the impact of rising GHG concentrations and global temperature.

Figure 1: CO_2 concentration measured at the observatory in Mauna Loa, Hawaii

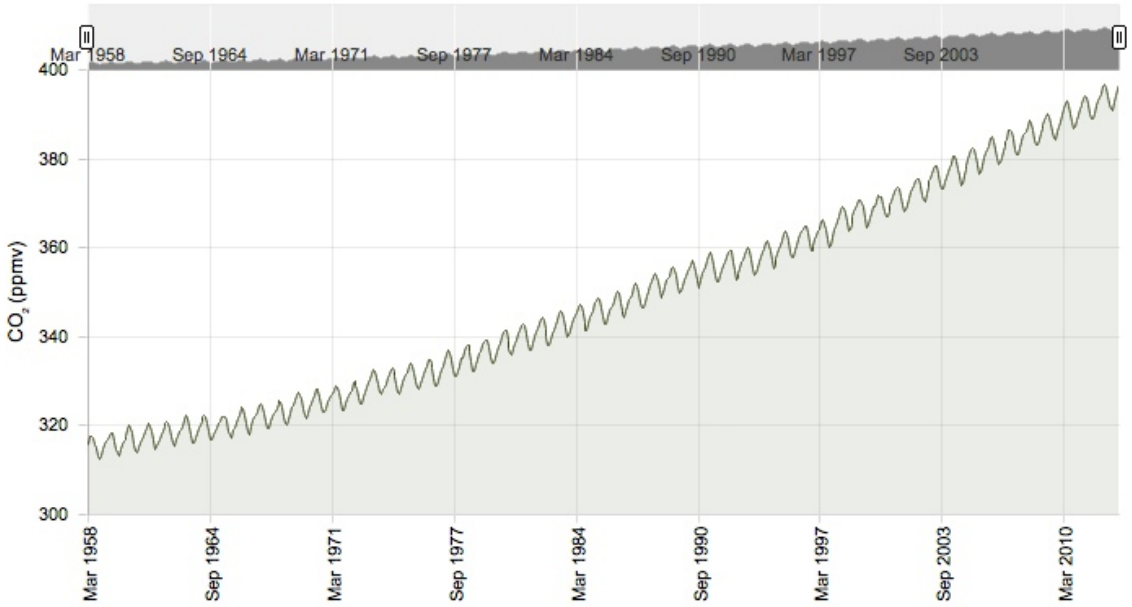
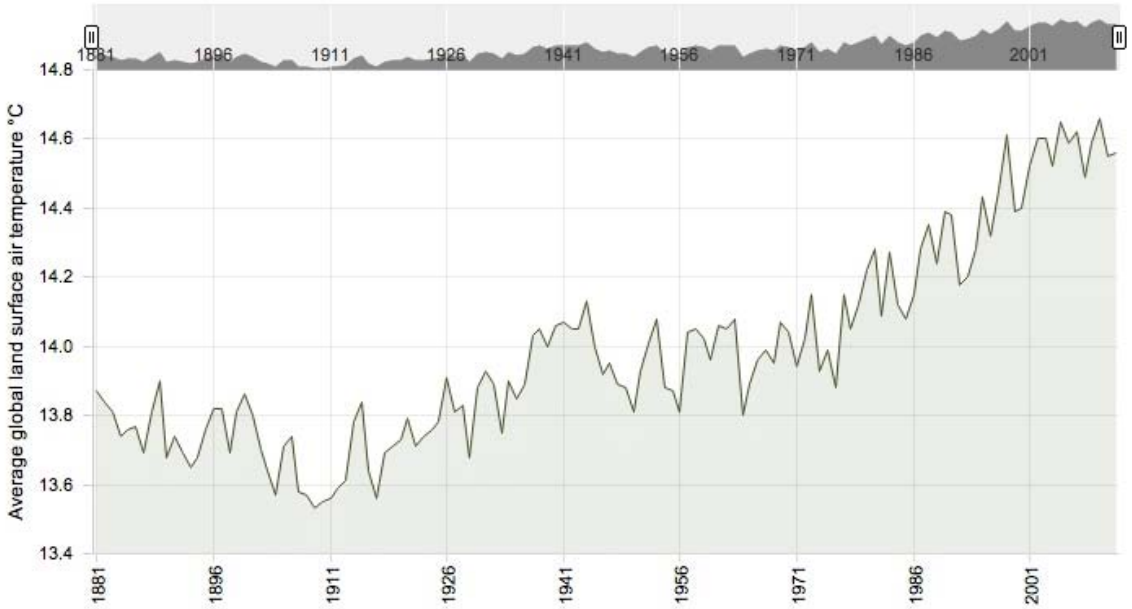


Figure 2: Global temperature

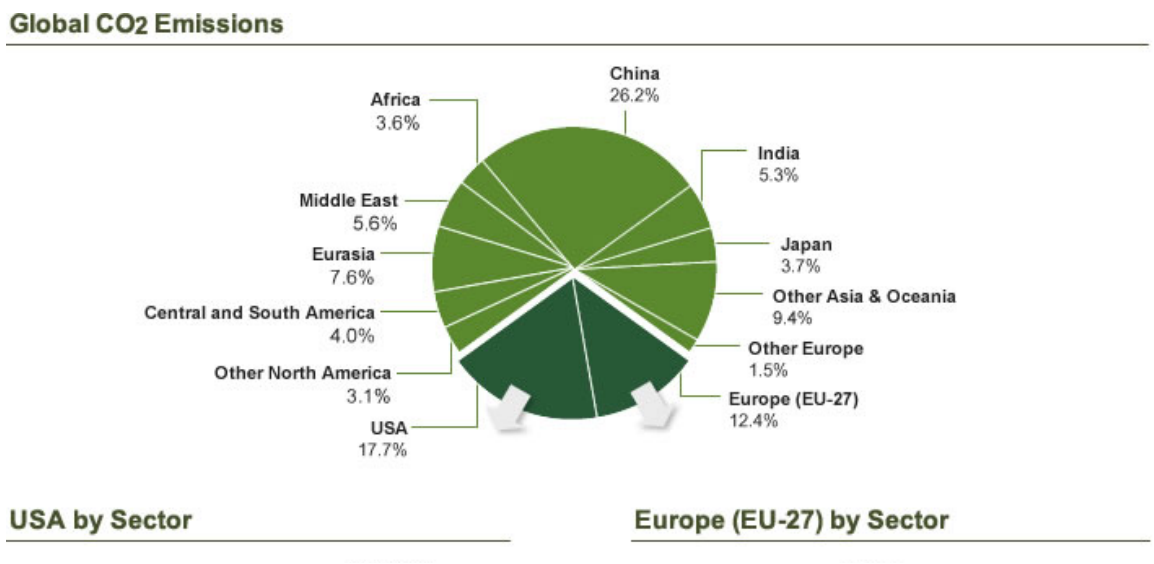


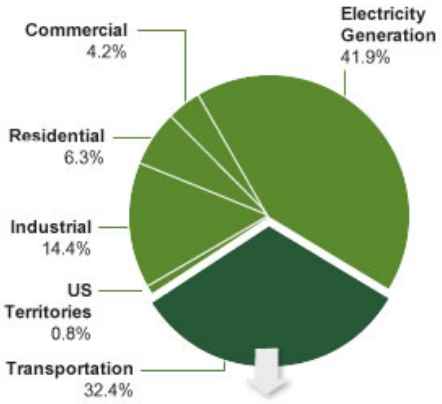
Global Emissions

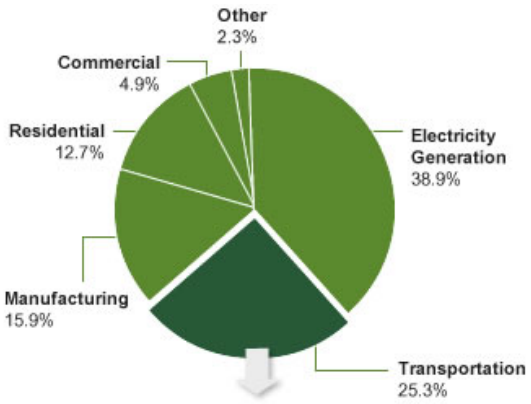
Figure 3 (below) provides a breakdown of estimated 2009 fossil fuel CO_2 emissions by region. For the U.S. and Europe, the emissions are further broken down by sector and by mode in the transportation sector. The data were taken from reports published by the International Energy Agency, the European Environment Agency and the U.S. Environmental Protection Agency. Globally, emissions from cars and light-duty trucks comprise about 11 percent of all fossil fuel CO_2 emissions. In the U.S., cars and light-duty trucks account for approximately 20 percent of fossil fuel CO_2 emissions, or about 4 percent of global fossil fuel CO_2 emissions. In Europe, passenger cars and light-duty trucks account for approximately 19 percent of fossil fuel CO_2 emissions, or about 3 percent of global fossil fuel CO_2 emissions.

Until approximately 2007, the U.S. was the largest CO_2 emitter. Due to economic development, however, emissions from China surpassed those from the U.S. about six years ago, and it is expected that the gap between emissions from China and those from the U.S. will continue to widen in the future. That said, per-capita emissions of CO_2 in the U.S. are expected to remain higher (currently by approximately a factor of three) than those in China.

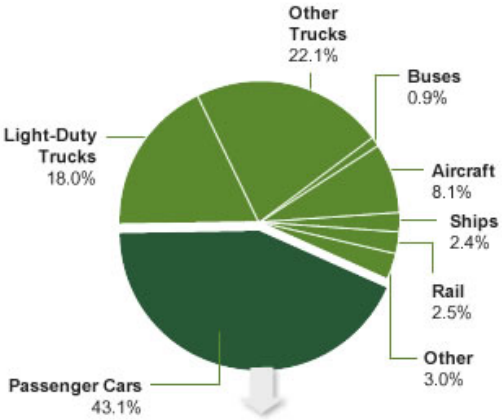
Figure 3: Regional distribution of fossil fuel CO_2 emissions in 2010



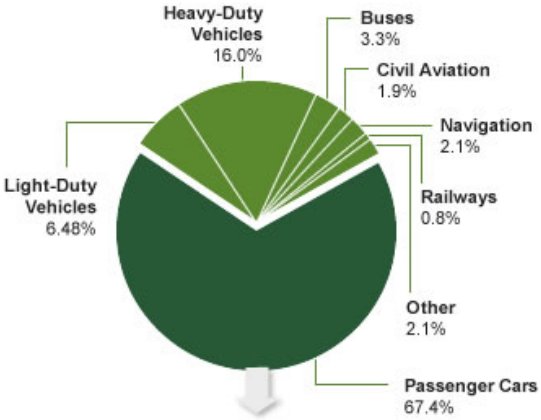




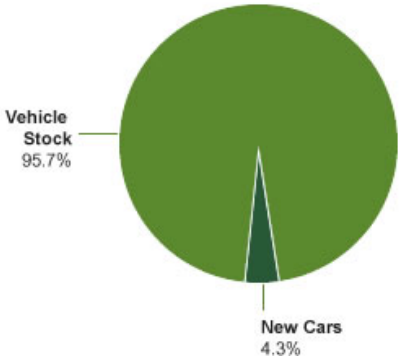
USA Transportation



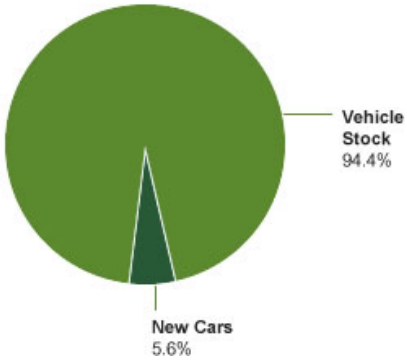
Europe (EU-27) Transportation



USA Passenger Cars



Europe (EU-27) Passenger Cars



Global CO_2 Emissions

Percent

	2010
USA	17.7
Europe	12.4
Other North America	3.1
Central and South America	4.0
Eurasia	7.6
Middle East	5.6
Africa	3.6
China	26.2
India	5.3
Japan	3.7
Other Asia & Oceania	9.4

Other Europe	1.5

USA by Sector

Percent

	2010
Transportation	32.4
US Territories	0.8
Industrial	14.4
Residential	6.3
Commercial	4.2
Electricity Generation	41.9

Europe (EU27) by Sector

Percent

	2010
Transportation	25.3
Manufacturing	15.9
Residential	12.7
Commercial	4.9
Electricity Generation	38.9
Other	2.3

USA Transportation

Percent

	2010
Passenger Cars	43.1
Light-Duty Trucks	18.0
Other Trucks	22.1
Buses	0.9
Aircraft	8.1
Ships	2.4
Rail	2.5
Other	3.0

Europe (EU27) Transportation

Percent

	2010
Passenger Cars	67.4
Light-Duty Vehicles	6.48
Heavy-Duty Vehicles	16.0
Buses	3.3
Civil Aviation	1.9
Navigation	2.1
Railways	0.8
Other	2.1

USA Passenger Cars

Percent

	2010
Vehicle Stocks	95.7
New Cars	4.3

Europe (EU27) Passenger Cars

Percent

	2010
Vehicle Stocks	94.4
New Cars	5.6

Beyond CO_2

While carbon dioxide is by far the most important greenhouse gas associated with the use of motor vehicles, small amounts of other greenhouse gases are also emitted, notably methane (CH_4), nitrous oxide (N_2O) and hydrofluorocarbon-134a (HFC-134a). We take a holistic view of climate change and are addressing non-CO_2 emissions in our research, product development and operations.

Methane and nitrous oxide are combustion products formed in the engine and emitted into the atmosphere. Although the overall contribution of these pollutants is small – the U.S. Environmental Protection Agency (EPA) estimates that they contribute less than 1 percent of vehicle greenhouse gas emissions – manufacturers must meet new standards for these emission constituents starting in 2012. We have assessed the contribution to climate change made by methane emissions from vehicles as about 0.3 to 0.4 percent of that of the CO_2 emissions from vehicles. We have also assessed the contribution to climate change from N_2O emissions from vehicle tailpipe emissions (i.e., not including potential emissions associated with fuel production) as about 1 to 3 percent of that of tailpipe CO_2 emissions. The contribution from HFC-134a is slightly higher. We have estimated that the radiative forcing contribution of HFC-134a leakage from an air-conditioner-equipped vehicle is approximately 3 to 5 percent of that of the CO_2 emitted by the vehicle.[1] When expressed in terms of "CO_2 equivalents," the contribution of vehicle emissions to radiative forcing of climate change is dominated by emissions of CO_2.

We are also addressing other non-CO_2 greenhouse gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6). Through our Restricted Substance Management Standard we have prohibited SF_6 in magnesium casting. We are continuing our scientific research to determine the relative contribution of a wide range of long-lived greenhouse gases on the radiative forcing of climate change. In 2012, for example, we worked with an international team of climate and atmospheric scientists to assess the global warming potentials of long-lived greenhouse gases.

And, we have assessed the contribution to climate change made by "criteria emissions" from light-duty vehicles, including hydrocarbons, nitrogen oxides (NOx), particulate matter and carbon monoxide. Given the impressive reductions in criteria emissions enabled by improvements in engine and exhaust after-treatment technology, we believe that these short-lived emission constituents from light-duty vehicles will continue to have a relatively minor influence on climate change in the future.[2] We have presented a technical assessment arguing that time horizons of 20 years, or longer, are needed in assessments of the contribution of road transport to the radiative forcing of climate change.[3]

Reducing the Climate and Ozone Impacts of Vehicle Air Conditioning Refrigerants

Chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs) and hydrofluoroolefins (HFOs), which are used as refrigerants in vehicle air conditioning (AC) units, also have warming effects on the atmosphere and contribute to climate change. CFCs, which are commonly known for their negative impact on the Earth's ozone layer, also have the highest global warming potential of these three refrigerants. Ford has been a leader in conducting research on CFC replacements to eliminate their ozone impacts and reduce the overall global warming potential of air conditioning refrigerants.

In the 1980s and early 1990s, all vehicle manufacturers used CFC-12 (CF_2Cl_2) as the refrigerant in AC units. By the mid-1990s, in response to the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), vehicle manufacturers switched to HFC-134a (CF_3CFH_2). Hydrofluorocarbons such as HFC-134a contain only hydrogen, fluorine and carbon; they do not contain chlorine and hence do not contribute to stratospheric ozone depletion. HFC-134a also has a shorter atmospheric lifetime and a substantially smaller global warming potential than CFC-12. As shown in Table 1 below, the global warming potential of HFC-134a is 1,370,[4] compared to CFC-12's global warming potential of 10,900.

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- Sustainable Materials

External Websites

- Montreal Protocol

As seen in Figure 1 below, the lifecycle emissions of CFC-12 from an AC-equipped car in 1990 were approximately 400g per vehicle[5] – i.e., a CO_2 equivalent radiative forcing impact comparable to that of the CO_2 emitted from the tailpipe of the car. Replacement of CFC-12 with HFC-134a, together with improvements in AC systems, has led to a dramatic (approximately 30-fold) decrease in the climate impact of refrigerant emissions per vehicle for an AC-equipped vehicle. (This can be seen by comparing the two left-hand bars in Figure 1.) We estimate that lifecycle emissions of HFC-134a from vehicles manufactured in 2010 are approximately 100 g per vehicle per year.[6] Looking to the future, based on published assessments,[7] we believe that HFC-134a emissions from a typical light-duty vehicle manufactured in 2017 will be approximately 50g per vehicle per year, further decreasing in the impact of HFC-134a emissions on a per-vehicle basis by a factor of two (see the third bar in Figure 1).

In the EU, we are required to use compounds with global warming potentials of 150 or less in the AC units for all approvals of new vehicle types beginning on January 1, 2011 (though this deadline was extended by moratorium until the end of 2012) and all registered vehicles beginning on January 1, 2017. Because HFC-134a has a global warming potential of 1,370, it does not meet the new regulation. Hydrofluoroolefins (HFOs) are a class of compounds that are safe for the ozone layer and have very low global warming potential (typically less than 10). Based upon engineering, environmental and safety assessments, many automakers, including Ford, have chosen the compound known as HFO-1234yf (also known as HFC-1234yf or $CF_3CF=CH_2$) for use in European vehicles subject to the above-mentioned legislation timing. Research at Ford[8] has established that HFO-1234yf has a global warming potential of 4. As seen in the right-hand bar of Figure 1 below, by using HFO-1234yf, the AC refrigerant impact on global warming ceases to be discernible. In addition to using new refrigerants, Ford has also implemented new lower-leakage fitting designs in our AC systems, to reduce refrigerant leakage.

In the U.S., the EPA has proposed that HFCs such as HFC-134a should be added to, and regulated as part of, the Montreal Protocol. We do not support the inclusion of HFCs within the Montreal Protocol for the three reasons stated below:

- HFCs do not contribute to the depletion of stratospheric ozone. HFCs should therefore not be included in the Montreal Protocol on Substances that Deplete the Ozone Layer.
- As seen in Figure 1, replacing CFC-12 with HFC-134a has been a major step forward in environmental protection. Retaining the option to use HFC-134a in the future increases our ability to deliver cost-effective solutions for our customers.
- Emissions of CO_2, CH_4 and N_2O, not HFCs, are the main driver of climate change. (HFCs are currently responsible for less than 1 percent of the radiative forcing by long-lived GHGs.) Regulations focused on less than 1 percent of the problem are not very useful. We need to adopt a lifecycle perspective and focus on the most cost-effective options. Assessment of cost effectiveness is required before enacting blanket restrictions on HFCs.

Figure 1: Annual In-Use Greenhouse Gas (GHG) Emissions From Typical AC-Equipped Cars in the U.S in 1900, 2010 and 2016 Using Either CFC-12 (in 1990, Left-Hand Bar), HFC-134a (2010 and 2016, Middle Bars), or HFO-1234yf (Right-Hand Bar) Refrigerants.

Table 1: Comparison of CFC-12, HFC-134a and HFO-1234yf

Compound	Chemical Formula	Safe for Ozone?	Atmospheric Lifetime[9]	Global Warming Potential[9]
CFC-12	CF_2Cl_2	No	100 years	10,900
HFC-134a	CF_3CFH_2	Yes	13.4 years	1,370
HFO-1234yf	$CF_3CF=CH_2$	Yes	11 days	4

1. T.J. Wallington, J.L. Sullivan and M.D. Hurley, "Emissions of CO_2, CO, NOx, HC, PM, HFC-134a, N_2O and CH_4 from the Global Light Duty Vehicle Fleet," *Meteorol*. Z. 17, 109 (2008).
2. T.J. Wallington, J.E. Anderson, S.A. Mueller, S. Winkler and J.M. Ginder, "Emissions Omissions," *Science* 327, 268, (2010).
3. T.J. Wallington, J.E. Anderson, S.A. Mueller, S. Winkler, J.M. Ginder and O.J. Nielsen, "Time Horizons for Transport Climate Impact Assessments," *Environ. Sci. Technol*. 45, 3169 (2011).
4. World Meteorological Organization, *Scientific Assessment of Ozone Depletion*: *2010*, Geneva (2010).
5. IPCC/TEAP, *Special Report: Safeguarding the Ozone Layer and the Climate System*, Cambridge University Press, 2005.
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7. S. Papasavva, D.J. Luecken, R.L. Waterland, K.N. Taddonio and S.O. Andersen, "Estimated 2017 Refrigerant Emissions of 2,3,3,3-tetrafluoropropene (HFC-1234yf) in the United States Resulting from Automobile Air Conditioning," *Environ. Sci. Technol*. 43, 9252 (2009).
8. O.J. Nielsen, M.S. Javadi, M.P. Sulbaek Andersen, M.D. Hurley, T.J. Wallington and R. Singh, "Atmospheric Chemistry of CF3CF=CH2: Kinetics and Mechanisms of Gas-Phase Reactions with Cl Atoms, OH radicals, and O3," *Chem. Phys. Lett.* 439, 18 (2007).
9. WMO/UNEP, *Scientific Assessment of Ozone Depletion: 2010*, Geneva (2010). Global Warming Potential (GWP) is a relative measure of how much heat a greenhouse gas traps in the atmosphere. It compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide. A GWP is calculated over a specific time interval, commonly 20, 100 or 500 years. GWP is expressed as a factor of carbon dioxide (whose GWP is standardized to 1).

Ford's Greenhouse Gas Emissions

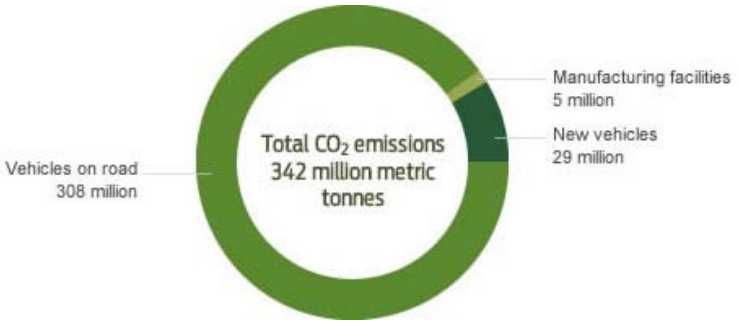
We estimate that annual carbon dioxide (CO_2) emissions from Ford facilities and Ford vehicles driven by our customers are in the range of 350–400 million metric tons (Mmt) per year, varying over time with fluctuations in vehicle production and sales, on-road fleet size and vehicle miles traveled. The estimate includes emissions from our facilities, emissions from current-year vehicles and emissions from all Ford vehicles on the road.

We updated this estimate of global greenhouse gas (GHG) emissions from our facilities and Ford vehicles in 2010, using data from 2008, the most recently available. The estimate is shown in Figure 1, along with the estimates carried out in 2001 and 2006/7 for the years 1999 and 2005, respectively.

Please note that while we can exercise a significant degree of ongoing control over our facility emissions, we have essentially no control over the emissions of vehicles once they are produced and placed in service on the road.

Our assessment of the emissions from Ford's facilities and Ford-made vehicles on the road decreased between 2005 and 2008 from approximately 400 to 350 million metric tons of CO_2, primarily due to better data availability for a key parameter.[1] Normalizing for the change in the key parameter, the emissions remained relatively stable at approximately 350 Mmt. Recognizing the inherent uncertainties in these estimations, we plan to update the assessments approximately every five years. We currently plan to conduct our next assessment in 2015.

Figure 1: Estimate of CO_2 Emissions From Our Facilities and Vehicles on the Road in 2008, 2005 and 1999



Metric tonnes

	CO_2 emissions
Manufacturing facilities	5 million
New vehicles	29 million
Vehicles on the road	308 million
Total	342 million

In detail, the updated 2010 snapshot of estimated CO_2[2] emissions shows that, between 2005 and 2008:

- Emissions from our facilities improved by approximately 38 percent. This reflects an approximately 16 percent improvement in the amount of CO_2 emitted per vehicle produced (i.e., our energy-efficiency index improved globally by about 16 percent from 2005 to 2008). It also reflects lower overall vehicle production. These estimates are fairly precise.[3] Facility GHG emissions, however, are a small percentage (about 2 percent) of the total.

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» Supplier Greenhouse Gas Emissions

- Emissions from calendar year 2008[4] vehicles on the road decreased by about 22 percent relative to the prior year, primarily reflecting a decline in vehicle sales. We have moderate confidence in the precision of the estimate for U.S. vehicles; the estimate for the rest of the world is less precise.[5] These emissions account for about 8 percent of the total.
- Emissions from all Ford vehicles on the road are estimated to be about 308 million metric tons of CO_2 per year, lower than in our previous analyses, primarily due to better data availability for a key parameter. This estimate, which accounts for about 90 percent of the total, remains highly uncertain.[6]

Outside the scope of this estimate, we are also in the process of understanding the GHG emissions from our key suppliers' facilities. And, we are expanding our approach to enhance supplier environmental performance beyond more-established supplier environmental performance expectations such as robust environmental management systems (ISO 14001 certification) and responsible materials management. (See the Supplier Greenhouse Gas Emissions section for details of our participation in initial efforts to assess GHG emissions in our supply chain.)

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1. Our estimate for the CO_2 emissions for the greater-than-one-year-old on-road fleet decreased from 370 to 308 Mmt between 2005 and 2008. This decrease primarily reflects better data availability for a key value in the calculation (the global light-duty vehicle fraction of road transportation petroleum use, which we now assume to be 0.6 as opposed to 0.7 in our previous analyses). Using the old data value of 0.7 for the 2008 global CO_2 estimate would increase the 308 Mmt value to 359 Mmt. Such changes in our assessment reflect the difficulties in assessing precisely the emissions from the global fleet of Ford vehicles.
2. CO_2 emissions account for substantially all of the GHG emissions from our facilities and vehicles.
3. This is calculated consistent with the World Resources Institute/World Business Council for Sustainable Development Greenhouse Gas Protocol; it includes direct (Scope 1) and indirect (Scope 2) emissions.
4. 2008 is the most recent year for which complete data are available.
5. Calculated using Ford U.S. Corporate Average Fuel Economy and global market share figures. This estimate is subject to considerable uncertainty as it incorporates multiple assumptions about how consumers use their vehicles (e.g., miles traveled overall and urban/highway breakdown) and about fuel economy values in markets outside of the U.S.
6. This is calculated based on our market share and a sector-based approach to determine the fractional contribution of light-duty vehicles to global total CO_2 emissions. This estimate is subject to considerable uncertainty, as it is based on multiple assumptions, including that all automakers' fleets have the same fuel economy and vehicle life span.

Climate Change Risks and Opportunities

Over the past decade, concerns about climate change, the price of fuel and energy security – along with the global recession – have dramatically changed the automotive business. This creates substantial risks for automakers but also opportunities for innovation that enable growth and expansion. Below we discuss the general trends driving change in our markets and take a closer look at several key markets. We also discuss the physical and supply chain risks to our business posed by climate change.

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Our Markets

There is little doubt that the climate change issue has fundamentally reshaped automotive markets around the world. The policy landscape is becoming more complex and interconnected with other market forces. The Climate Change Policy and Partnerships section of this report discusses regulatory developments in detail, but in brief, all of our major markets are increasingly shaped by government actions to regulate fuel economy and carbon dioxide (CO_2) emissions, introduce low-carbon fuels and provide incentives to shift consumer and business behavior. Many governments are also actively involved in promoting the research, development and purchase of new vehicle and battery technologies.

Concerns about fuel prices and price volatility continue to drive a long-term trend toward consumer interest in more fuel-efficient vehicles. In many markets, energy security concerns are also a driver of fuel economy regulation and alternative fuel development, as governments and consumers seek to rely as much as possible on domestic sources of transportation fuel and reduce imports of petroleum products. Recent developments in natural gas shale, domestic oil discoveries and increased renewable fuel are the initial steps for the U.S. to become energy independent in the future.

Investors are showing greater concern about climate change as a material risk for many companies. A variety of voluntary public registries and information services (such as the Carbon Disclosure Project) are providing information to investors about greenhouse gas emissions, while in some countries companies are required to disclose information about their climate risks. Thus, providing climate-change-relevant information to investors and shaping our business strategy with climate change in mind are important elements of maintaining access to capital.

These market shifts are very significant to our Company. Everywhere we operate, the financial health of our Company depends on our ability to predict market shifts of all kinds and to be ready with the products and services our customers demand.

Our product globalization strategy is designed to help us respond to changing markets and regional preferences and the risks and opportunities presented by the climate change issue. We have created global vehicle platforms that offer superior fuel economy, safety, quality and customer features. We then tailor each global platform to national or regional preferences and requirements. Our pledge that all our vehicles will offer the best or among the best fuel economy in their segment, coupled with a technology migration plan that is based on the science of climate change, positions us to keep pace with or get ahead of regulatory requirements. New technology is also cutting the time required to bring new vehicles to market, which helps us respond more effectively to the ever-increasing pace of change in our markets.

This approach has helped us take advantage of the market demand for more fuel-efficient vehicles

and gain market share. However, the possibility that fuel prices could decline means there is also a risk that consumer preferences will shift back toward less fuel-efficient vehicles.

Please see the Financial Health section for further discussion of our changing markets and how we are responding to them, and the Ford's Climate Change Strategy section for discussion of our strategic response to the risks and opportunities posed by the climate change issue.

Regional Market Trends

North America

New regulations (discussed in the Climate Change Policy and Partnerships section) and concerns about fuel prices, energy security and the impacts of climate change are encouraging the sale of more fuel-efficient vehicles. National surveys in the U.S. continue to show that fuel economy is a key consideration in customers' vehicle purchase decisions. This is echoed by our own customer research and feedback. And, the trend is influencing buyer behavior. Between 2006 and 2012, the U.S. Environmental Protection Agency (EPA) projects that the car share of the U.S. market increased from 57.9 percent to 63.9 percent, while the truck share declined from 42.1 percent to 36.1 percent. The EPA also projects that sales of small cars increased from 21.2 percent of sales in 2006 to 25.1 percent in 2012. And they project that sales of hybrid electric vehicles increased from 2.2 percent in 2011 to 3.7 percent in 2012.

In addition, over the past decade the use of ethanol in the U.S. gasoline market has shifted from approximately 10 percent of the available gasoline containing 10 percent ethanol (E10) in 2002, to the widespread availability of E10 in nearly all gasoline as of the end of 2012. With the implementation of the Energy Security and Independence Act of 2007, the trend of increasing renewable fuel use in both gasoline and diesel is likely to continue and will be limited only by the capability and compatibility of the retail refueling infrastructure to deliver such fuels to the customer, as well as the capability of future vehicles to handle the increased renewable fuel content.

Europe

In Europe, the long-term trend of high-priced fuel and increasing fuel efficiency has continued the market shift toward diesel-powered vehicles, which now make up more than half of all new vehicle sales. This trend is reinforced by sales incentives in some European countries designed to encourage new vehicle sales, with the aim of reducing CO_2 emissions from older, less-efficient vehicles. Several European countries have CO_2-based taxation with aggressive tax break points, which has boosted sales of smaller, more fuel-efficient cars. In addition, tough new CO_2 emission regulations have come into effect, which will continue to drive fuel-economy improvements in new automobiles. Automakers, including Ford, have begun to introduce and announce plans for hybrid electric, battery electric and plug-in hybrid electric vehicles for the European market.

Asia

The Chinese government is actively promoting vehicle electrification and supporting research in this area, based on its desire to support growth and development, balanced with the need for energy security and a cleaner environment. The Chinese central government currently provides limited incentives to fleet purchasers of "new energy vehicles" (defined as battery electric and plug-in electric vehicles) through a pilot program in 25 cities that applies to vehicles manufactured in China. However, sales of the new energy vehicles have been consistently under the target set by the central government. The majority of domestic and global automakers are launching or considering launching a range of hybrid electric vehicle technologies in China, including automatic stop-start (micro-hybrid) and full hybrid electric vehicles. Some of these technologies are already available in the Chinese market. The majority of new energy vehicles currently available in China are offered by domestic Chinese manufacturers under national Chinese brands.

South America

In Brazil, our largest market in South America, the use of biofuels is widespread, as a result of national policy and consumer preference. All gasoline in Brazil is blended with 18 to 25 percent ethanol, and pure ethanol is also widely used. A new regulation, the Automotive Regime, issued in 2012 requires that manufacturers selling vehicles in Brazil meet a minimum 12 percent improvement in industry-wide fuel efficiency by October 2017. A voluntary fuel-economy labeling program is also in place, along with a star ranking program for light vehicles that favors low-emission, low-CO_2, ethanol, flexible-fuel and hybrid vehicles. Consumers tend to choose vehicles with small engines, and approximately 85 percent of new vehicles purchased have flexible-fuel capabilities. Since 2010, Ford has offered the Fusion Hybrid in Brazil. Porsche, Mercedes and Toyota also offer hybrid vehicles in Brazil.

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Physical Risks

Global climate change raises the potential for shifting patterns of extreme weather and other risks to our facilities.

For insurance purposes, we assess the risks each of our facilities faces (with input from third-party engineers) at least annually. This risk assessment is updated based on new data and takes into account the risk of exposure to hurricanes, tornadoes, other storms, flooding and earthquakes. As a result of this process, we believe we have a good understanding of the physical risks faced by our facilities and how those risks are changing over time.

Extreme weather has the potential to disrupt the production of natural gas, a fuel necessary for the manufacture of vehicles. Supply disruptions raise market rates and jeopardize the consistency of vehicle production. To minimize the risk of production interruptions, Ford has established firm delivery contracts with natural gas suppliers and installed propane tank farms at key manufacturing facilities as a source of backup fuel. Higher utility rates have prompted Ford to revisit and implement energy-efficiency actions that previously did not meet our internal rate of return. Climate change also has the potential to affect the availability and quality of water. We are examining this issue as part of our water strategy.

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Supply Chain Risks

Our suppliers, which are located in more than 60 countries, are subject to market, regulatory and physical risks as a result of greenhouse gas regulation and the impacts of climate change. These risks could affect their competitiveness or ability to operate, creating the potential for disruptions to the flow of supplies to Ford. For example, suppliers may be subject to reporting requirements, fees or taxes, depending on where their operations are located. See the Supply Chain section for a discussion of actions we are taking to better understand the climate risks of our suppliers and to promote a competitive supply chain.

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U.S. Energy Security

For many years, U.S. consumers and politicians have been concerned about energy security, due to the country's continuing dependence on imported foreign oil. These concerns have been based on a trend of increasing consumption of crude oil in the form of gasoline for transportation and increasing crude oil imports in the U.S. since the 1960s (see Figure 1 below). Unlike the utility sector, which has a diverse energy portfolio, light-duty transportation is approximately 95 percent reliant on crude oil. This dominance of crude oil, coupled with the continued reliance on foreign countries for supply, is at the core of the U.S. energy security concerns. Furthermore, instability in the Middle East, one of the world's primary oil-producing regions, as well as the high and volatile price of gasoline in the U.S., also feed these concerns.

In the first quarter of 2012, continued supply disruptions and instability in the Middle East and Africa contributed to a significant increase in world crude prices, resulting in record-high gasoline prices during 2012. However, more recent trends in the consumption of crude oil for transportation in the U.S., driven in part by increases in vehicle fuel efficiency, as well as increases in the production of oil in the U.S., suggest that U.S. energy security will become less of an issue in the future. In fact, the International Energy Administration recently released a report that predicts that the U.S. will be the largest global producer of oil by the mid-2020s, and by 2030 will be a net exporter of oil. If this prediction holds true, the U.S., which now imports about 20 percent of its total energy needs, would become energy self-sufficient in the coming decades.[1]

The U.S. marketplace has also seen the widespread penetration of renewable fuel use over the past 10 years. Today more than 90 percent of the gasoline offered for sale at retail refueling stations contains 10 percent ethanol (E10) by volume. The Energy Independence and Security Act of 2007 mandated increasingly greater volumes of renewable fuel; ethanol is currently the primary renewable fuel of choice. It should be noted that the widespread use of E10 is only possible because the vast majority of public retail refueling stations have dispensing and tank infrastructure that is compatible with E10, and more than 95 percent of the on-road vehicle fleet today is able to operate on gasoline containing 10 percent ethanol. Discussions of the widespread availability of higher blends of ethanol fuel will require further improvements in retail refueling infrastructure and vehicle compatibility.

Figure 1 below shows that increases in fuel efficiency over the years have largely compensated for the increase in vehicle miles traveled. Since the 1970s, the fuel efficiency of new passenger cars more than doubled, and fuel economy rates in trucks have increased more than 50 percent. As a result, though vehicle miles traveled increased by a factor of four, gasoline consumption increased by only a little over a factor of two.

Figure 2 shows that U.S. demand for crude oil has declined in recent years. The economic downturn, improvements in vehicle fuel efficiency, and changes in consumer behavior have contributed to this decline.

Nonetheless, for the time being, energy security remains a serious concern for U.S. consumers and continues to drive their vehicle purchase behavior, including demand for more fuel-efficient vehicles.

Figure 1: Total Miles Traveled, Crude Oil Imports, and Gasoline Consumed

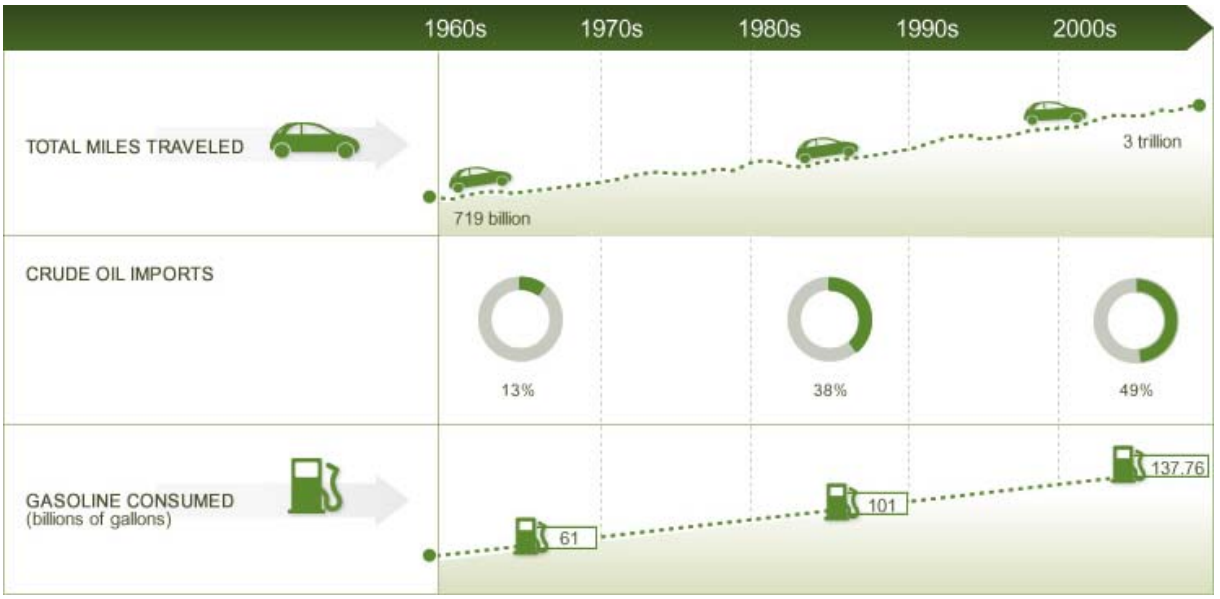


Figure 2: Crude Oil* Consumption, Imports and U.S. Production

* Note: includes crude oil and other petroleum products, including natural gas plant liquids, processing gain, fuel ethanol and biodiesel.

1. International Energy Administration, World Energy Outlook 2012.

Ford's Climate Change Strategy

To respond to the risks and opportunities posed by the climate change issue, our long-term strategy is to contribute to climate stabilization by:

- Continuously reducing the greenhouse gas (GHG) emissions and energy usage of our operations
- Developing the flexibility and capability to market lower-GHG-emission products, in line with evolving market conditions
- Working with industry partners, energy companies, consumer groups and policy makers to establish an effective and predictable market, policy and technological framework for reducing GHG emissions

Our product plans in all regions are aligned with our overall goal of contributing to climate stabilization. Our technology and product strategy to meet this goal is based on the modeling of vehicle and fuel contributions to emission reductions and an analysis of market and regulatory trends (see figure below). Our climate change strategy is supported by our sustainable mobility governance, which establishes structures and accountability for implementing the strategy.

Product Sustainability Process

The specifics of our vehicle technology and product strategy to meet this goal are laid out in the Sustainable Technologies and Alternative Fuels Plan, which can be found in the Greening Our Products section of this report. The plan details steps we are taking in the foreseeable future to develop and deploy vehicle and fuel technologies.

We believe this strategy is already showing results by positioning our Company to take advantage of opportunities created by shifts in markets. We have implemented all of the near-term actions of our plan, and our commitment to outstanding fuel economy aligns well with consumer interest in fuel-sipping vehicles. In 2012, for example, small cars showed the largest market-share increase of any vehicle segment across the industry, posting a 23 percent increase compared with overall industry expansion of just 13 percent. Ford's sales of small cars were up 29 percent in 2012, giving us just over 10 percent of the small-car segment, more than a full percentage point increase compared to 2010, and our best share of the U.S. small-car segment since 2003. The Ford Focus was the best-selling car, worldwide, in 2012.

For the longer term, we are preparing to provide regionally appropriate approaches based on global platforms and advanced vehicle technologies, including electric vehicles, biofuel vehicles and (as fuel and infrastructure become available) hydrogen fuel cell vehicles. In addition, we have

Related links

This Report

- Sustainable Technologies and Alternative Fuels Plan

conducted dialogues with stakeholders, exploring sustainable mobility projects to demonstrate mobility solutions that meet the needs of urban and rural communities by leveraging information technology to integrate private and public transportation options. Please see the Financial Health section for details on these efforts.

Climate Change Strategic Principles

Our approach to greenhouse gas (GHG) stabilization is aligned around the following key strategic principles:

1. Technical, economic and policy approaches to climate change need to recognize that all carbon dioxide (CO_2) molecules (or GHG equivalents) produced by human activities make the same contribution to the atmosphere's concentration of greenhouse gases. Once those molecules reach the atmosphere, they contribute to the greenhouse effect, regardless of the source. However, the cost of reducing those emissions varies significantly depending on their source, and we should attempt to achieve the most economically efficient solutions possible.

2. The transportation sector represents a closely interdependent system, characterized by the equation: "Vehicle + Fuel + Driver = GHG emissions." Each link in this chain depends on the others. For example, vehicle manufacturers can bring to market flexible-fuel vehicles, but successfully reducing GHG emissions with them will depend on fuel companies providing renewable biofuels, as well as consumer demand for the vehicles and fuels.

3. Future developments in technologies, ever-changing markets, consumer demand and political uncertainties require flexible solutions. The business strategies that Ford implements, and the public policies that we encourage, must have the flexibility to succeed in a range of potential scenarios.

4. Early affordable steps to reduce GHG emissions from our products and processes may delay the need for drastic and costly reductions later. Lack of agreement on long-term solutions cannot be used as an excuse to avoid near-term actions.

Ford's Science-Based CO_2 Targets

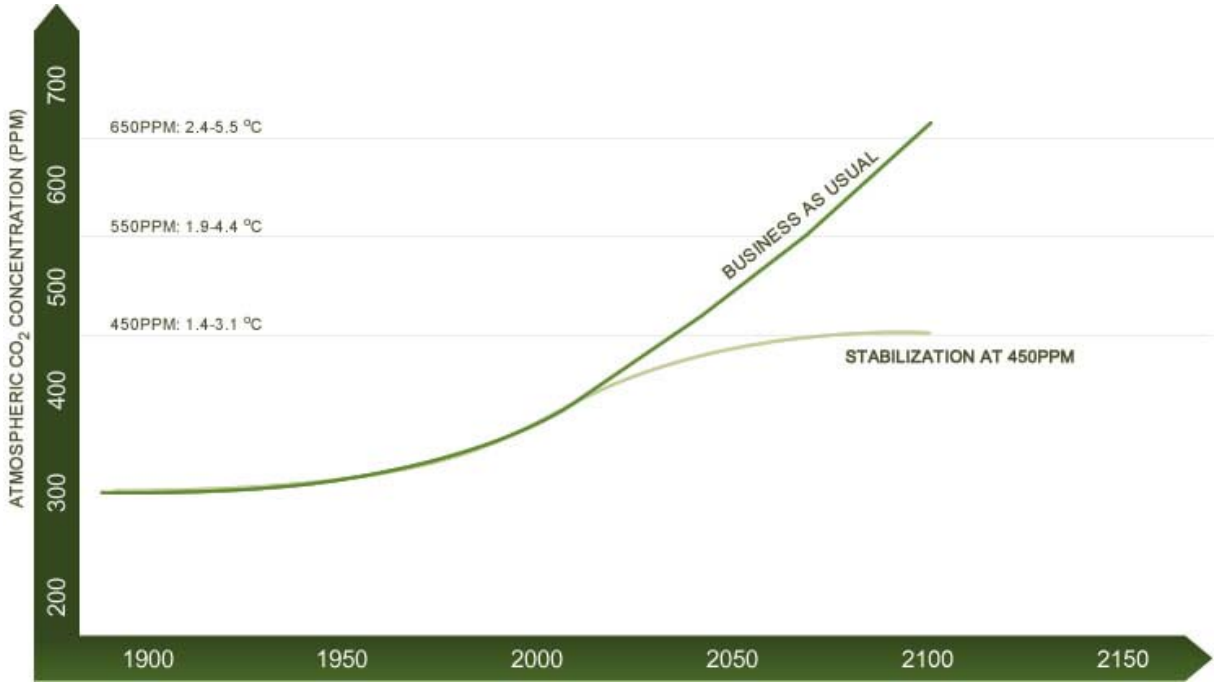
Throughout this report, we refer to Ford's climate goals as "science-based" – specifically, based on the science of climate stabilization. An advantage of this approach is that it gives us an objective, long-term goal focused on an environmental outcome – the stabilization of carbon dioxide (CO_2) in the atmosphere. A disadvantage is that the goal can be difficult to explain and communicate. In this section, we delve into our science-based goal by discussing what stabilization means, how we use "glide paths" to align our product plans with emission reductions, and how our CO_2 model works and how we use it in our planning.

The stabilization-based goal had its start in 2004, when Ford's internal Climate Change Task Force faced a dilemma. After an extensive study, it was clear to the cross-functional group of senior executives that several forces were converging to fundamentally change vehicle markets, especially in North America and Europe. Current and anticipated greenhouse gas and fuel-economy regulation, rising fuel prices and growing consumer awareness of the climate change issue all pointed to a shift in sales toward cars rather than trucks and toward smaller and more fuel-efficient vehicles. We needed to rapidly reorient our product offerings.

But what should drive new product goals? As a practical matter, the Company needed to be able to meet new regulatory mandates. Beyond that imperative, we had taken to heart our responsibility to contribute to meeting the challenge of climate change. So, Task Force members decided to base product planning on the goal of climate stabilization, and they asked Ford's in-house scientists to devise a way to test scenarios for meeting that goal.

Our Stabilization Commitment

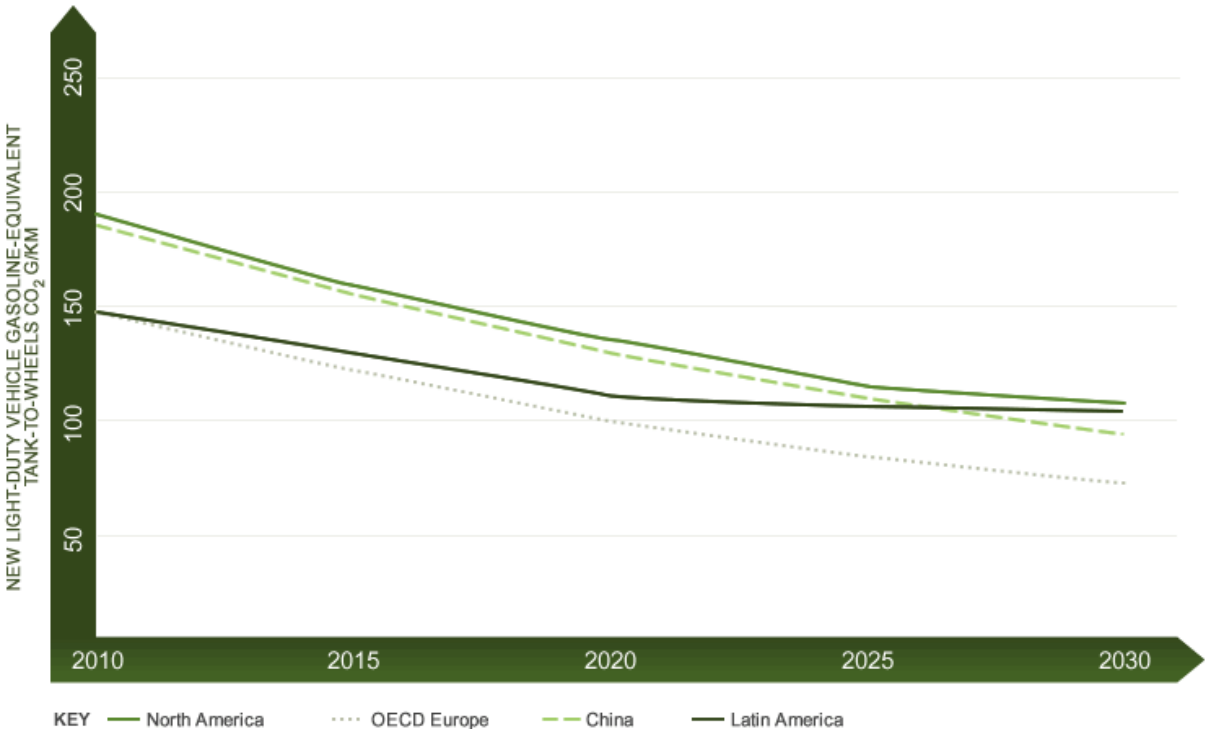
Ford researchers have played a leading role in scientific research to understand and quantify the contribution of vehicles to climate change. We have also worked with a variety of partners to understand current and projected manmade greenhouse gas (GHG) emissions and the steps that can be taken to reduce them. Many scientists, businesses and governmental agencies have concluded that stabilizing the atmospheric concentration of CO_2 at approximately 450 parts per million (ppm) may help to forestall or substantially delay the most serious consequences of climate change (see chart below).



Ford has committed to doing our share to stabilize atmospheric CO_2 at 450 ppm. Using a science-based CO_2 model (see The "CO_2 Model:" The Science Behind Our Scientific Approach), we have calculated the amount of light-duty vehicle (LDV) CO_2 emissions that are consistent with stabilizing the concentration of CO_2 in the atmosphere at this level. We then calculated the long-term, sustained reductions in the CO_2 emission rate (g/km) from new LDVs that would be needed to achieve 450 ppm atmospheric CO_2, based on projections of vehicle sales and scrappage. Plotting these emission levels over time yields the "CO_2 glide paths" that drive our technology plans.

We have calculated region-specific CO_2 glide paths for North America, Europe, Brazil and China. The glide paths take into account the effects of regional differences in vehicle size and fuel consumption, government regulations and biofuel availability. Although the initial (current) CO_2 emissions rate varies considerably by region, to provide the significant emission reductions needed, all regions need to move toward similar targets. For the light-duty vehicle sector to meet the 450 ppm CO_2 emissions limits, all automakers must reduce their LDV emissions by the same proportion as prescribed by the CO_2 glide paths (see chart below). We have shared our thinking behind the development of these industry-average targets with interested stakeholders and have received positive feedback.

Industry-Average CO_2 Glide Paths[1]



In 2010, we applied the CO_2 glide path methodology to develop CO_2 targets for our commercial vehicles and facilities as well.

We believe that a science-based approach is the right way forward, and Ford's sustainability plan is based on these science-based emissions targets. We compare the glide paths to competitive and regulatory factors in each region to inform long-term technology plans and identify opportunities and risks.

We caution that while our product development plans are based upon delivering long-term reductions in CO_2 emissions from new vehicles that are similar to those shown for the industry-average glide paths, we anticipate that the year-over-year reductions will vary somewhat from the glide paths. In some years the reductions will be greater than those shown in the glide paths and in other years they will be less. That is because delivering on these targets will be dependent to some degree on market forces that we do not fully control (e.g., changes in energy prices and changes in the mix of vehicles demanded by the consumers in the markets in which we operate). Furthermore, our product strategy is based on multiple inputs, including regulatory requirements, competitive actions and technology plans.

We annually review the assumptions and input data in the CO_2 model. Because of the long-term view of the model, we only update the glide paths on a five-year basis. In 2012 we completed the first update since the glide paths were implemented. As part of this review, we assessed our glide path analysis methodology and incorporated new forecasts for vehicle sales and the latest data on the CO_2 intensity of fuels. The adjustments to glide paths based on these changes were minor.

Climate change is a long-term challenge that demands long-term solutions. We believe a philosophy of continuous improvement implemented over the long term is the correct solution to this challenge. Following the CO_2 reductions called for in our glide path assessment is a significant challenge. It is a commitment that we do not undertake lightly. However, we believe that dramatic reductions in CO_2 emissions are required over the long term to forestall or substantially delay the most serious consequences of climate change, and we are committed to doing our part.

Ford's leadership in using climate science to set our CO_2 targets has been recognized externally. In 2012 we received a Goal-Setting Certificate at the U.S. Environmental Protection Agency's Climate Leadership Awards Ceremony and Conference for our global CO_2 strategy.

To explore which vehicle and fuel technologies might be most cost-effective in the long-term stabilization of atmospheric CO_2 concentrations, we have worked with colleagues at Chalmers University in Gothenburg, Sweden. Specifically, we are working together to include a detailed description of light-duty vehicles in a model of global energy use for 2010 to 2100. Several technology cost cases have been considered. We found that variation in vehicle technology costs over reasonable ranges led to large differences in the vehicle technologies utilized to meet future CO_2 stabilization targets. We concluded that, given the large uncertainties in our current knowledge of future vehicle technology costs, it is too early to express any firm opinions about the future cost-effectiveness or optimality of different future fuel and vehicle powertrain technology combinations.[2] This conclusion is reflected in the portfolio of fuel and vehicle technologies that are included in our

sustainability strategy. We are continuing to develop the global energy model with researchers at Chalmers. We believe the model will provide valuable insights into cost-effective mobility choices in a future carbon-constrained world.

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1. E.U. and China glidepaths were developed based on the New European Driving Cycle (NEDC) and North America and Latin America glidepaths were developed based on the Federal Test Procedures (FTP), which are the testing requirements used by governments in these regions to assess the emission levels of car engines and/or fuel economy in light duty vehicles.
2. M. Grahn, E. Klampfl, M. Whalen, and T.J. Wallington, “Sustainable Mobility: Using a Global Energy Model to Inform Vehicle Technology Choices in a Decarbonised Economy,” *Sustainability*, 5, 1845–1862 (2013).

The "CO_2 Model": The Science Behind Our Scientific Approach

In 2005, Ford's scientists began development of a global carbon dioxide (CO_2) model. To create it, they modified the Sustainable Mobility Project model (developed by the International Energy Agency) and combined it with global CO_2 emission-reduction pathways for varying levels of atmospheric CO_2 stabilization (as described by the Model for the Assessment of Greenhouse-Gas-Induced Climate Change, developed by the National Center for Atmospheric Research). The scientists then calculated the CO_2 emission reductions required of new light-duty vehicles up to the year 2050 for a range of CO_2 stabilization levels and different regions of the world, using a simplifying assumption of the same percentage CO_2 emission reductions across all sectors.

At the lower CO_2 stabilization levels, the required emission reductions are extremely challenging and cannot be accomplished using vehicle technology alone. Joint investigations with BP provided insight into how the best new vehicle technologies and low-carbon alternative fuels can jointly and realistically fulfill the low-CO_2 emission requirements. Ford's CO_2 model and other modeling tools were combined to explore assumption sensitivities around vehicle technologies, baseline fuels and biofuels.

The CO_2 model is not intended to provide "the answer," but rather a range of possible vehicle and fuel solutions that contribute to a pathway to CO_2 reductions and, eventually, climate stabilization. Our Blueprint for Sustainability – and the technology and product actions it spells out – is based on options developed through this modeling exercise.

The model and its results have been a centerpiece of discussions with a variety of stakeholders. Below are some of the questions that have been raised through these discussions, and the answers to them.

How does the model account for emissions growth or reduction in developing countries?

We recognize that developing countries generally have relatively low per-capita energy use but high rates of emissions growth, reflecting growing economies. The CO_2 model uses a science-based approach that allows for growth in developing countries, to derive CO_2 reduction targets for light-duty vehicles consistent with a 450 ppm CO_2 stabilization pathway.

Since fuel use is the dominant cause of CO_2 emissions, how does the model account for projected changes in the carbon footprint of automotive fuels?

Ford has studied multiple scenarios in which the auto industry and the energy industry work together to reduce overall well-to-wheels CO_2 emissions from the light-duty transportation sector. These joint strategy scenarios (see Figure 1 below) allow us to develop a least-cost vehicle technology roadmap. For the carbon footprint of fuels, we rely on the well-to-tank CO_2 emissions for different alternative fuels estimated by different region-based models, including the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model for North America, and the EUCAR/JRC/CONCAWE analysis for Europe.

Are you continuing to test alternative scenarios?

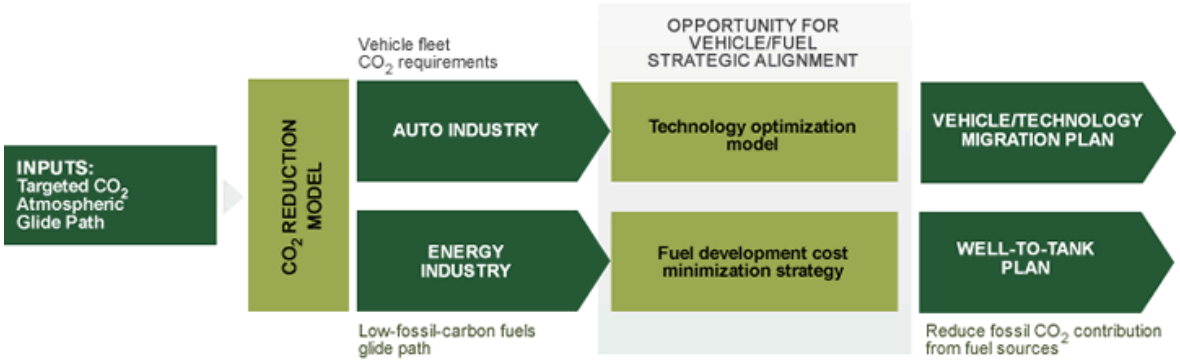
In the long run, the roles of consumers, governments and fuel availability will be pivotal in dictating actual CO_2 emission reductions, and Ford continues to take them into consideration in fine-tuning a truly viable and sustainable CO_2 stabilization pathway.

How does the model consider the cost of technologies and alternative fuels?

In a separate study (and as discussed on the Ford's Science-Based CO_2 Targets page), Ford and

our partner Chalmers University have developed a global energy model that looks into minimal-cost scenarios across different sectors and explores assumption sensitivities around vehicle technologies, fuel technologies, connections between the different energy sectors, and biofuels. The model provides information on the combinations of options that will yield the necessary emissions reductions at an affordable cost to consumers. We have used this model to develop scenarios to assess the global lowest-cost vehicle and fuel technology solutions consistent with CO_2 stabilization.

Figure 1: Ford's sustainability framework and technology migration development



Climate Change Policy and Partnerships

During 2012, the climate change policy landscape continued to evolve. In the U.S., the Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) finalized regulations on a national approach to vehicle greenhouse gas and fuel economy standards for 2017–2025. Globally, however, growing budget deficits at national and regional levels have overshadowed climate policy discussions over the last several years.

Our global approach to product planning and policy participation is based on the science of climate stabilization. We accept that simply "not getting worse" is not good enough. The auto industry must work together with suppliers, government, the fuel industry and consumers to reduce carbon dioxide (CO_2) levels from transportation so we can help stabilize atmospheric CO_2 concentrations. Stabilizing CO_2 concentrations will require that all sectors of the economy, including the transportation sector, do their share. Ultimately, to achieve real and lasting results, all global stakeholders must also make long-term commitments for a sustainable future.

In our major markets, the regulation of fuel economy and/or vehicle CO_2 emissions is becoming increasingly complex. In addition to competing federal and regional regulations, governments are taking diverse approaches to incentives for emission reductions through rebates, fees, "feebates," privileges for low-emitting vehicles and penalties for high-emitting vehicles. At the same time, some state governments are introducing registration taxes on the same advanced vehicle technologies that assist in CO_2 reductions, to make up for the loss in tax revenues resulting from these vehicles' reduced use of conventional fuels. This very complex policy environment is one important driver of our strategy to develop fuel-efficient and advanced technology platforms that can be shared globally and tailored to the needs of our customers. Customer vehicle-purchasing choices are affected by vehicle incentives, fuel costs, annual registration costs as well as overall maintenance and ownership costs.

In the U.S. and elsewhere, Ford continues to advocate for comprehensive, market-based policy approaches that will provide a coherent framework for greenhouse gas (GHG) emission reductions, so that companies have a clear understanding of their role in achieving reductions. GHG regulations effectively regulate what vehicles we are allowed to build and sell. CO_2 emissions standards for motor vehicles are functionally equivalent to fuel economy standards, because the amount of CO_2 produced by a vehicle is proportional to the amount of fuel used.

We hope that the information that follows helps to illustrate the diverse array of GHG and fuel economy regulations and incentives that are now shaping our markets. This section provides more detail on developments and Ford's involvement in:

- U.S. policy
  - Climate change legislation
  - Greenhouse gas and fuel economy regulation
- European policy
- Canadian policy
- Asia Pacific policy
- South American policy
- Renewable fuels policy
- Partnerships and collaboration
- Emissions trading

The map below provides a summary of the existing and proposed CO_2 emission and fuel consumption requirements and standards that vehicle manufacturers face across the globe. For each country the primary metric used in the regulation is listed, such as miles per gallon or grams of CO_2 per mile, as well as the "drive cycle" or vehicle testing process required to calculate compliance with the requirement. The map illustrates that many countries have existing or proposed CO_2 or fuel consumption requirements and that these requirements vary considerably by country and region.

Summary of Global Fuel Economy and Emissions Regulations

Fuel Economy and Emissions Testing Cycle Used

1. US EPA g CO_2/mi
2. US EPA g CO_2/mi and mpg
3. US EPA g CO_2/km, km/L
4. US EPA MJ/km, km/L
5. NEDC g CO /km
6. NEDC L/100 km
7. US EPA or NEDC g CO /km
8. JC08 km/L

Key to map acronyms:

Cycles = vehicle testing procedures required to calculate compliance with a standard

- US EPA = United States Environmental Protection Agency
- NEDC = New European Driving Cycle
- JC08 = current Japanese fuel economy test cycle

Metrics = unit of measurement by which fuel economy or CO_2 requirement is measured

- g CO_2/km = grams CO_2 per kilometer
- km/L = kilometer per liter of fuel
- MJ/km = megajoules per kilometer
- mpg = miles per gallon

U.S. Policy

Climate Change Legislation

In the U.S., the policy debate surrounding climate change has been overshadowed by other issues, including concerns over budget deficits. Nevertheless, the U.S. Environmental Protection Agency (EPA) has continued to pursue greenhouse gas (GHG) emissions regulations for mobile sources using their authority under the Clean Air Act, while the U.S. National Highway Transportation Safety Administration (NHTSA) has continued to pursue fuel economy regulations. In 2012, the EPA and NHTSA finalized joint greenhouse gas emission and fuel economy regulations for 2017–2025 model year light-duty vehicles. These regulations, which continue the "One National Program" approach, are discussed below under Greenhouse Gas and Fuel Economy Regulation.

Ford has participated in the public discourse on broad-based, national climate policy for some time. In 1999, for example, we discussed greenhouse gases in our first corporate citizenship report. In late 2005, we published a special report on the Business Impact of Climate Change, and in 2007 we joined the U.S. Climate Action Partnership (USCAP) to support the prompt enactment of national climate legislation. Because the USCAP organization has been dormant for nearly a year, and this policy issue is now not expected to be taken up legislatively in the U.S., we asked to be delisted as a member of USCAP. We nonetheless remain committed to improving fuel economy and reducing greenhouse gas emissions, as evidenced by our support for the One National Program approach to fuel economy regulations discussed below.

These experiences, as well as our participation in carbon markets globally, have helped to shape Ford's position on climate policy. The linked issues of climate change and energy security create an urgent need to transform the country's economy into one with lower greenhouse gas emissions, higher energy efficiency and less dependence on fossil fuels and foreign oil. This transformation will require changes in all sectors of the economy and society. A comprehensive legislative framework is needed to spur these changes.

The auto industry has supported the rules proposed by EPA and NHTSA, but regulations focusing on just one sector of the economy will not enable us to achieve the necessary level of GHG reductions. We believe we need a comprehensive, market-based approach to reducing GHG emissions if the U.S. is going to reduce emissions at the lowest cost per ton. An economy-wide program would provide flexibility to regulated entities while allowing market mechanisms to determine where GHG reductions can be achieved at the lowest cost. The environment doesn't care where reductions occur, but the economy does, and given the potentially high cost of abatement, it is important to achieve the greatest reductions at the lowest cost possible.

As part of an integrated approach to addressing energy security and climate change, Ford supports comprehensive legislation that will create a price signal to encourage consumers to purchase more fuel-efficient vehicles and engage in other climate-friendly behaviors. Thoughtful and comprehensive national energy and climate policy that provides a price signal is needed to support the billions of dollars being invested in low-carbon and fuel-efficient vehicle technologies. Without a cohesive policy that includes a price signal, we could be caught in an endless cycle wherein development of the advanced technologies needed to help address climate change and energy security is sporadic and not aligned with fuel providers or consumer demand.

Related links

External Websites

- National Highway Traffic Safety Administration
- U.S. Environmental Protection Agency Fuel Economy

Ford will continue to advocate for effective climate change policies that drive down GHG emissions and provide a framework for sound business and product planning.

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Greenhouse Gas and Fuel Economy Regulation

In July 2011, the Obama Administration announced that the state of California, the auto industry and other stakeholders had committed to support a single national program for motor vehicle fuel economy and greenhouse gas standards covering the 2017 to 2025 model years. This is an extension of the "One National Program" regulations that have already been put in place for the 2012–2016 model years. Ford views the continuation of the One National Program agreement as a positive step for all stakeholders toward our common goals of energy security and reduced greenhouse gas emissions.

In 2012, the EPA and NHTSA finalized regulations extending the One National Program framework through the 2025 model year. The new rules require manufacturers to achieve, across the industry, a light-duty fleet average fuel economy of approximately 45 mpg by the 2021 model year, and approximately 54.5 mpg by the 2025 model year, assuming all of the carbon dioxide (CO_2) emissions reductions are achieved through the deployment of fuel economy technology. This represents a reduction of roughly 5 percent per year in CO_2 emissions from passenger cars for the 2017–2025 model years. For light trucks, the proposed standards represent a reduction in CO_2 emissions of about 3.5 percent per year for model years 2017–2021, and about 5 percent per year for model years 2022–2025.

It is important to note that the EPA's 2022–2025 GHG standards are final rules; in contrast, NHTSA's 2022–2025 Corporate Average Fuel Economy (CAFE) standards are conditional because, by statute, NHTSA may only set CAFE standards for up to five model years at a time.

Under the rules, each manufacturer's specific task would depend on the mix of vehicles it sells. The rules include the opportunity for manufacturers to earn credits for technologies that achieve real-world CO_2 reductions, and for fuel-economy improvements that are not captured by EPA fuel-economy test procedures. Manufacturers also can earn credits for GHG reductions not specifically tied to fuel economy, such as improvements in air conditioning systems. The rules specify a midterm evaluation process under which, by 2018, the EPA will reevaluate its standards for model years 2022–2025 in order to ensure that those standards are feasible and optimal in light of intervening events. In parallel, NHTSA will undertake a process to promulgate final CAFE standards for those model years. In California, the California Air Resources Board has modified its GHG regulations so that complying with the federal program also satisfies compliance with California's requirements for the 2017–2025 model years.

Ford plans to participate in the mid-term evaluation process. For the longer term, Ford supports a legislative solution codifying the One National Program approach beyond 2025, in order to head off the possibility that various agencies may promulgate and enforce multiple, inconsistent fuel economy and/or GHG regulations in the future.

A national program is essential for the efficient regulation of motor vehicle fuel economy and GHG emissions. It allows manufacturers to average the fuel economy and CO_2 emissions of their vehicles based on nationwide sales, which in turn enables manufacturers to formulate their product plans on a national level to achieve the necessary scale for future technology introductions. In contrast, state-by-state or regional regulations could force manufacturers to restrict the sale of some products in certain parts of the country, harming both consumers and dealers in those areas. Since CO_2 emissions do not create localized air-quality problems, state or regional standards are unnecessary, and would create hurdles, added costs and market disruptions in our path toward achieving reductions.

As with the 2012–2016 rules, the 2017–2025 rules have been challenged in federal court by entities whose primary concern appears to be the ramifications of the vehicle rules on stationary source regulation. The automotive industry has intervened in the litigation with the goal of avoiding adverse changes to the One National Program rules.

While the new rules are challenging, we believe they are feasible in light of our product plans and projected market conditions for the time period covered by our product planning process. We intend to work closely with the EPA, NHTSA and other key stakeholders, including California, throughout the mid-term evaluation process to ensure continued alignment between regulatory goals and market realities for the 2022 through 2025 model years.

In October 2011, the EPA and NHTSA also finalized a single national program for greenhouse gas and fuel economy standards for heavy-duty vehicles. The CO_2 and fuel-consumption requirements for the 2014 through 2018 model years target combination tractors, heavy-duty pickup trucks and

vans, and vocational vehicles. The agencies estimate that the combined proposed standards have the potential to reduce GHG emissions by nearly 270 million metric tons and save approximately 530 million barrels of oil over the life of these vehicle types sold during the program. A second phase of regulations is planned for model years beyond 2018.

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European Policy

The European Union has set mandatory carbon dioxide (CO_2) targets for both cars and light commercial vehicles. The specific target for an automaker depends on the average weight of the automaker's vehicles registered in a given year; lower average vehicle weight results in stricter CO_2 targets for a given automaker. Ford cars registered in the EU have relatively low average weight compared to other automakers, which results in stricter targets for Ford compared to the overall industry target of 130 g/km during the 2012–2015 period. This target is set to decrease to 95 g/km in 2020; however, the modalities of reaching the 2020 target are set to be reviewed and further detailed in 2013.

The EU has also established significant regulations about other items related to climate change, such as fuels (including bio-blending), tires and gear-shift indicators, among others. In fact, automobiles are one of the most regulated products in the EU, with requirements also covering non-CO_2 emissions, drive-by noise, recycling, substances, electro-magnetic requirements, safety, technical aspects and more. Ford is complying and will continue to comply with all these various targets and prohibitions with appropriate product offerings, in spite of the sudden and dramatic economic downturn that has severely limited the resources available to respond.

In general, Ford is requesting that regulations and policies be well coordinated and not contradictory to each other, and that they also be technology-neutral, be proportional, avoid double regulation, offer sufficient lead time to adjust development and production cycles and follow an integrated approach in which all stakeholders (industry, infrastructure, consumers and governments) contribute to the solution. Also, any CO_2 regulations should be in line with meeting the global CO_2 target of 450 ppm.

In several EU member states, CO_2 taxation is in place to encourage the early introduction of low-CO_2 vehicles. The major tax break points are often around 50 g/km, 95–100 g/km, and 120 g/km, with very high taxation in some countries above these levels. Unfortunately, these tax break points are not harmonized among the European countries.

The industry will continue to invest heavily in research and development and new product programs in order to reach short-term CO_2 targets. The long-term target will require technological breakthroughs, new refueling infrastructure and a swift renewal of the car fleet on Europe's roads.

Canadian Policy

In September 2010, Environment Canada finalized greenhouse gas emissions regulations for 2011–2016 model year passenger automobiles and light trucks. This regulation aligns emission standards and test procedures with those of the U.S. The regulation provides companies with similar compliance flexibilities to those available under the U.S. Environmental Protection Agency's greenhouse gas (GHG) regulation, including advanced technology credits, air conditioning leakage and efficiency credits, flexible-fuel vehicle credits and credit transfer among fleets.

Environment Canada has also announced that it will regulate heavy-duty vehicles in alignment with the upcoming U.S. federal heavy-duty vehicle GHG regulations slated to begin with the 2014 model year. Also coincident with the U.S., Environment Canada published a Notice of Intent to regulate passenger automobiles and light trucks in the 2017–2025 model years.

The Provinces of Quebec, Manitoba and British Columbia participate in the Western Climate Change Initiative and had committed to adopt GHG regulations based on California standards. Quebec has promulgated a GHG regulation based on the California standards, but with fewer flexibility mechanisms. Now that the Canadian federal regulation is in place, the Quebec government has amended the Quebec regulation to recognize equivalency with the federal standards. Reporting of Quebec fleet performance is still required. We are hopeful that Quebec will see the benefit of a single standard for Canada, consistent with the One National Program effort in the U.S. Ford has participated in regulatory discussions on this issue, providing technical expertise and supporting a tough, aligned, national standard. British Columbia and Manitoba have both acknowledged the value of the new federal standards.

Environment Canada has also regulated renewable fuel content in on-road gasoline. Effective September 2010, renewable levels in the national pool of gasoline must average 5 percent. Environment Canada has also implemented a regulation for renewable content in diesel fuel. As of July 2011, the regulation requires 2 percent renewable content in middle distillate fuels.

Asia Pacific Policy

In Ford's Asia Pacific and Africa region, sales in China are growing rapidly. Economic growth is a key priority of the Chinese government, to be balanced with energy security and a cleaner environment.

The Chinese Ministry of Industry and Information Technology (MIIT) released the Stage III fuel consumption Monitoring & Reporting rule and began implementing it July 1, 2012. We are now in the monitoring period, which will last from 2012 to 2015. During this phase-in period, the ratio of the Corporate Average Fuel Consumption to the Target Corporate Average Fuel Consumption of all automakers must decline from 109 percent of the target in 2012 to 100 percent in 2015. The China Automotive Technology and Research Center (CATARC) is developing Stage IV fuel-consumption targets, which are expected to be completed in 2014.

The Chinese government provides limited incentives for the purchase of "new energy vehicles" (including plug-in electric vehicles) made by Chinese manufacturers for fleets under local government control. The program currently applies to vehicles in 25 cities. Diesel use is discouraged in passenger car applications in the near term, due to fuel availability concerns. The Chinese government also provides incentives of RMB60K (˜$9700) per vehicle to customers who purchase plug-in or pure electric vehicle models approved as new energy vehicles in Beijing, Shanghai, Changchun, Shenzhen, Hangzhou and Hefei.

Japan, South Korea and Taiwan have released new or modified fuel-economy limits, while Hong Kong, South Korea and Taiwan have linked tax incentives to fuel economy and carbon dioxide targets.

Ford is actively involved in dialogues with governments across Asia Pacific and Africa in a number of areas, including sustainable mobility, energy security and environmental protection.

South American Policy

In Brazil, our largest South American market, the use of biofuels is a national policy. All gasoline is blended with 20 to 25 percent ethanol, and pure ethanol is extensively used as motor fuel. Most new vehicles are designed to accommodate varying amounts of ethanol. Also, a minimum of 5 percent biodiesel must be added to diesel.

Brazilian emission requirements are periodically updated through an emissions-control program. Brazil also introduced a voluntary vehicle energy-efficiency labeling program; the labels indicate fuel consumption rates for light-duty vehicles with a spark-ignition engine. While the program is voluntary, Brazil also published a new automotive regime that requires participation in the fuel-economy labeling program, as well as a minimum 12 percent improvement in industry-wide fuel efficiency for 2017 light-duty vehicles with a spark-ignition engine, in order to qualify for industrialized products tax reduction. Additional tax reductions are available if further fuel-efficiency improvements are achieved. A star ranking for light vehicles was also recently introduced, favoring low-emission, low-carbon-dioxide (CO_2), ethanol, flexible-fuel and hybrid vehicles. Diesel use in light vehicles under a one-ton payload is not allowed in Brazil, except for combined-usage vehicles with special off-road characteristics. Ten Brazilian states have issued Vehicle Pollution Control Plans and are taking actions to implement In-Use Vehicle Inspection and Maintenance Programs.

In 2012, most of Ford's light-duty products in Brazil were offered as ethanol flexible-fuel vehicles. The most recent vehicle line to offer this was the Ford Ranger, which now comes in a 2.5L ethanol flexible-fuel version. Some imported vehicle lines, including the 2013 Ford Fusion, will also come in a flexible-fuel version in Brazil. We also provide light- and heavy-duty vehicles that meet biodiesel requirements.

Other South American countries, such as Argentina and Colombia, are also significantly increasing the use of biofuels. And, Chile introduced requirements that the fuel-consumption and CO_2-emissions levels of light-duty vehicles be posted at sales locations and in owners' manuals beginning in February 2013.

Renewable Fuels Policy

Today, more than 80 percent of global oil reserves are limited to 10 countries, while biofuels made from sugarcane can be produced in more than 100 countries. First-generation biofuels are playing an important role in building consumer awareness and spurring capital investment in infrastructure and facilities that can be used for more promising second-generation biofuels.

In the U.S., Ford is a leader in providing vehicles that can operate on biofuels, and we will continue to produce vehicles capable of operating on biofuels in line with consumer demand and retail refueling infrastructure development. Our flexible-fuel products, which we are delivering at no additional cost to consumers, go well beyond requirements and what most other automakers are doing.

Ford's vision for sustainable biofuels is for accelerated use of renewable fuels to deliver increased energy security, enhance economic development and help to address climate change. This vision includes rapidly expanding the number of vehicles that can operate on biofuels in some regions, increasing the number of stations offering biofuels, developing the fuel distribution network to support customer choice and value, and achieving technology breakthroughs to commercialize advanced biofuels.

Policies in several regions are aimed at increasing the use and availability of biofuels. The U.S. adopted a Renewable Fuel Standard requiring 36 billion gallons of biofuels by 2022, including more than 20 billion gallons of low-carbon advanced biofuels. The EU Renewable Energy Directive establishes a 10 percent renewable energy target for transportation energy in 2020, including the use of renewable-based electricity. The EU is also adding more-specific criteria regarding the types of sustainable biofuels that can be counted toward this regulation, and is aiming to limit the amount of crop-based biofuels used to meet the standard. Brazil has had a very aggressive domestic ethanol program for years.

But these policies aren't enough. Providing value and refueling accessibility is critical to engage consumers and get them to use alternative energy sources. Hundreds of millions of vehicles in operation today were designed to use ethanol blends containing less than 10 percent ethanol, and our transportation energy infrastructure was set up to deliver petroleum-based fuels rather than high-concentration alcohols.

In January 2011, the U.S. Environmental Protection Agency (EPA) approved a waiver allowing the use of E15 (a blend of 85 percent gasoline and 15 percent ethanol) in 2001 and later model year vehicles, after previously issuing a waiver allowing E15 to be used in 2007 and later vehicles. Ford's owner manuals are the source for our consumers to identify recommended fuels for use in their particular vehicle. As of the 2013 model year, Ford vehicles are capable of using E15, while prior model years are limited to E10.

On the one hand, we recognize the potential benefits of expanded use of E15 fuel in helping to build markets for renewable fuels in some countries. In addition, ethanol has an octane rating greater than today's gasoline, so when the fuels are mixed, the resulting fuel blend will have higher octane than base gasoline. Typically, as the octane rating of a fuel increases, it reduces the tendency for "engine knock," a condition that can, over time, lead to engine damage. (Today, however, while nearly all gasoline offered for sale to our vehicle owners at retail refueling stations across the U.S. is E10, this E10 has been reformulated so the benefits of increased octane rating from ethanol are no longer present.) Many of today's advanced engines currently on the road are programmed to improve the efficiency of the engine just short of the point where the consumer would experience engine knock. For such engines, an increase in the octane rating of the fuel would result in improved vehicle efficiency. Further improvement to engine efficiency (through increased compression ratio and downsizing) could be achieved if manufacturers knew the octane rating of the fuel would be increased and made available to our customers across the nation.

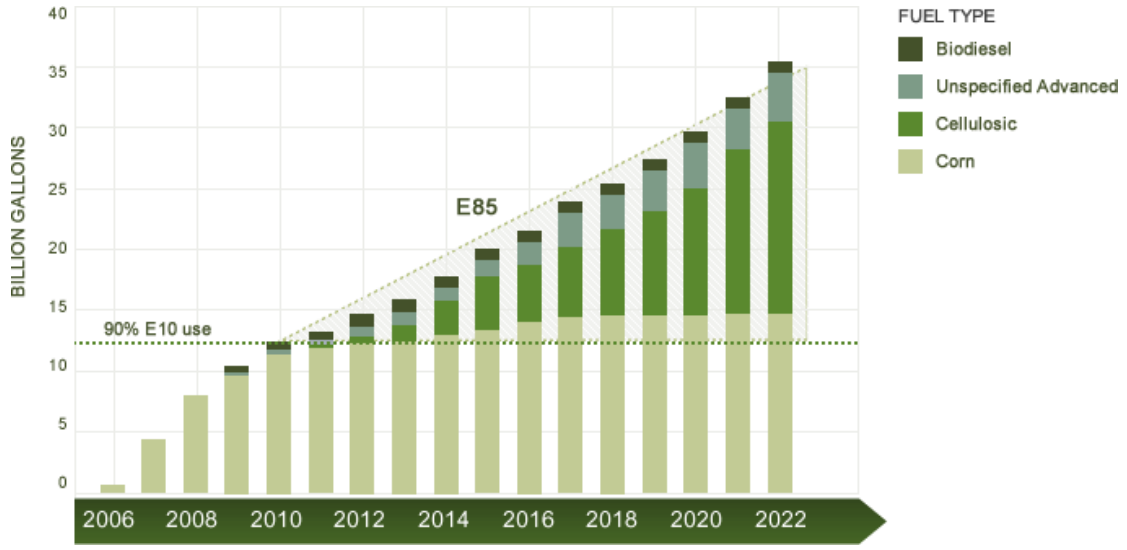
On the other hand, the implementation of the EPA's E15 waiver presents a number of concerns. In particular, Ford is concerned about the impact the waiver will have on the legacy fleet – the millions of vehicles still on the road that were designed to operate on E10 (or E0 for very old vehicles).

Although E15 is not approved for use in such vehicles, there is a need to develop a robust program of regulation to prevent the “misfueling” of these vehicles. Without such a program, we anticipate a high incidence of misfueling, i.e., customers putting E15 fuel in vehicles not designed to use it. We are concerned that such vehicles will not continue to meet customer expectations for quality, durability and performance, as well as legal requirements to meet emission and on-board diagnostic regulations.

Because of these concerns, we believe that the risks for automakers, fuel providers and consumers need to be mitigated and addressed before proceeding with the widespread use of E15. The automobile industry has joined with other industries seeking to overturn the E15 waiver in federal court. We have suggested that the EPA and other policy makers develop a revised, prospective plan for the introduction of E15, in a way that better ensures the fuel is only used in vehicles designed to accommodate it.

In Europe, we recommend that biofuel use be harmonized throughout the region by targeting the introduction of B7 and E10 as standard fuels.

U.S. Renewable Fuel Standard



Partnerships and Collaboration

Addressing the linked issues of climate change and energy security requires an integrated approach – a partnership of all stakeholders, including the automotive industry, the fuel industry, other industries and enterprises, governments and consumers. It will also require the best collective thinking and collaboration from all of these sectors.

Ford is involved in numerous partnerships and alliances with universities, coalitions, nongovernmental organizations and other companies to improve our understanding of climate change. For example, Ford is:

- A charter member of the Sustainable Transportation Energy Pathways Program at the Institute of Transportation Studies at the University of California at Davis. The Institute aims to compare the societal and technical benefits of alternative sustainable fuel pathways.
- Industry co-chair of the U.S. DRIVE Cradle to Grave lifecycle assessment of energy use, carbon dioxide (CO_2) and greenhouse gas emissions.

Our participation in these and other partnerships helps us to formulate improved strategies for products and policies that will in turn help to address climate change and energy security. The following are links to the above-mentioned organizations and others with which we cooperate on climate change issues:

- 25x'25 (Energy Future Coalition)
- BP
- Center for Clean Air Policy's Climate Policy Initiative
- Clean Fuels Development Coalition
- Diesel Technology Forum
- Governors' Biofuels Coalition
- Harvard University, Belfer Center for Science and International Affairs
- Growth Energy
- University of California at Davis, Institute of Transportation Studies, Sustainable Transportation Energy Pathways Program
- U.S. DRIVE
- World Business Council for Sustainable Development
- World Resources Institute
- World Economic Forum

Partnerships with Government

We are also engaging in partnerships with federal and state governments in the U.S. to deliver more fuel-efficient vehicles and alternative powertrain technologies. For example, working in close partnership with the state of Michigan, Ford received incentives and tax credits totaling $188 million to help in the continuous transformation of the Michigan Assembly Plant (MAP). These incentives enabled Ford to bring advanced lithium-ion battery system design, development and assembly in-house, as well as build the next-generation hybrid in Michigan.

Ford also received a $2 million grant from the state of Michigan to install a large, stationary battery-based energy storage facility with 750 kW capacity and 2 MWh of storage. This facility supports the state's "smart-grid" development initiatives as well as Ford's efforts to develop battery technology and secondary uses for vehicle batteries. As part of this facility, Ford is demonstrating the possibility for using vehicle batteries as stationary power storage devices after their useful life as vehicle power sources is over. Ford is participating in this project in partnership with DTE Energy, a Michigan-based energy provider. DTE Energy has installed a 500 kW solar photovoltaic (PV) electricity generation system at the demonstration facility, which will produce some of the energy to be stored in Ford's stationary battery storage facility. It is the largest PV array in Michigan. The solar PV system was funded by DTE Energy to support Ford's sustainability efforts and to help the

state of Michigan meet its renewable energy production requirements. As part of this project, Ford developed 10 electric vehicle charging stations, which demonstrate advanced battery charging technologies and associated integration with renewable energy and other smart-grid advances.

Emissions Trading

Emissions trading is a key tool in both voluntary and mandatory greenhouse gas (GHG) emissions-reduction programs. Ford was an early participant in carbon markets, with a goal of gaining experience that will be valuable in an increasingly carbon-constrained world.

For example, Ford, along with 11 other companies and the city of Chicago, founded the Chicago Climate Exchange (CCX) in 2003. The CCX was a GHG emissions-reduction and trading program for emission sources and projects in North America. It was a self-regulated, rules-based exchange designed and governed by CCX members. Ford was the first and only auto manufacturing participant in the Exchange. Through the CCX, we committed to reducing our North American facility emissions by 6 percent between 2000 and 2010, and we exceeded that reduction target. The CCX elected to end the emissions-trading portion of the program after 2010, with cumulative verified emission reductions totaling nearly 700 million metric tons of carbon dioxide (CO_2) since 2003.

Ford was also one of the original companies to join the U.K. Emissions Trading Scheme, the first voluntary, government-sponsored, economy-wide, cross-industry GHG trading program. Ford Motor Company Limited (U.K.) entered the program in March 2002, committing to and achieving a 5 percent CO_2 reduction for eligible plants and facilities over five years.

Ford now participates in the mandatory EU Emissions Trading System, which commenced in January 2005 and is one of the policies being introduced across Europe to reduce emissions of CO_2 and other greenhouse gases. The second phase of this program ran from 2008 to 2012, coinciding with the first Kyoto Commitment Period. The third trading period began in January 2013 and will run through December 2020.

Despite Ford facilities' low-to-moderate CO_2 emissions (compared to other industry sectors), the EU Emissions Trading System regulations apply to five Ford facilities in the U.K., Belgium and Spain. The trading scheme requires us to apply for emissions permits, meet rigid emissions monitoring and reporting plans, arrange for third-party verification audits and manage tax and accounting issues related to emissions transactions.

Ford is actively involved in an ongoing evaluation of the EU Emissions Trading System at both the EU and member-state levels. We have used the experience gained from participating in the market-based mechanisms described above to ensure that we operate in compliance with the scheme's regulatory framework. Ford anticipated the start of the EU Emissions Trading System and established internal business plans and objectives to maintain compliance with the new regulatory requirements.

Through our participation in CCX, we built a world-class CO_2 tracking infrastructure for our facility emissions. We will continue to leverage this system to support voluntary reporting globally, to measure progress against our new facility CO_2 target, and to ensure compliance with the EU trading program and the new mandatory U.S. Environmental Protection Agency reporting requirements.

Comprehensive reporting forms the foundation for all emissions trading. We voluntarily report GHG emissions in the U.S., Canada, Argentina, Australia, Brazil, China, the Philippines and Taiwan. This reporting, which has won several awards, is discussed in the Greening Our Operations section.

Related links

External Websites

- EU Emissions Trading Scheme

Greening Our Products

As we are a customer- and product-driven company, our vehicles are the foundation of our business. Our products are also the source of our most significant environmental impacts, and are the focus of our efforts to reduce those impacts. In this section we report on the current environmental performance of our products and our efforts to "green" our products, or improve their environmental impacts.

Specifically, we address:

- Our Sustainable Technologies and Alternative Fuels plan, which lays out our plan to improve the fuel efficiency of our products and advance the use of alternative fuels including electricity and bio-fuels.
- Vehicle fuel efficiency and CO_2 emissions progress and performance, following our vehicles + fuel + driver = GHG emissions approach to understanding vehicle emissions during the "use phase" of a vehicle's lifecycle.
- Non-carbon-dioxide tailpipe emissions, including hydrocarbons, nitrogen oxides, carbon monoxide and particulate matter that can contribute to smog formation and other air-pollution issues.
- Sustainable materials, including efforts to increase our use of recycled and renewable materials, improve vehicle-interior air quality and eliminate substances of concern.
- Our approach to electrified vehicles, which includes hybrid electric, plug-in hybrid electric and all-electric vehicles.

Related links

This Report

- Climate Change

Sustainable Technologies and Alternative Fuels Plan

IN THIS SECTION

Overview of Our Plan

We are making steady progress on our plan to meet our science-based climate stabilization goal, by significantly improving the fuel economy of our global product portfolio and enabling the use of alternative fuels.

A Portfolio Approach

Ford is taking a portfolio approach to developing sustainable technologies and alternative fuel options. Our goal is to provide consumers with a range of different options that improve fuel economy and overall sustainability while still meeting individual driving needs. We call this strategy the “power of choice.”

Improving Fuel Economy

This section outlines our plans for improving the fuel economy of vehicles with traditional gasoline and diesel powertrains. These plans include implementing advanced engine and transmission technologies as well as improving aerodynamics and reducing weight.

Migration to Alternative Fuels and Powertrains

Our migration to alternative fuels and powertrains includes introducing electrified vehicles – i.e., hybrids, plug-in hybrids and all-electric vehicles – as well as implementing vehicles that run on renewable biofuels, natural gas and propane, and implementing advanced clean diesel technologies. We are also working to advance hydrogen fuel cell vehicle technologies.

Overview of Our Plan

Our sustainable technologies and alternative fuels plan, mapped out in 2007, is our route to improving the fuel economy and cutting the carbon dioxide (CO_2) emissions of our products around the world. We have completed the near-term actions embodied in this plan and are currently implementing the mid-term actions.

✔ indicates action completed

In Place	Near Term	Mid Term	Long Term
Fundamental technologies in place	Fully implement fundamental technologies; introduce significant weight savings	Expand weight savings, hybrids and plug-ins	Leverage hybrids and introduce alternative energy sources
✔ Significant number of vehicles with EcoBoost® engines ✔ Diesel use as market demands ✔ Electric power-assisted steering – begin global migration ✔ Battery Management Systems – begin global migration ✔ Aerodynamics improvements ✔ Dual-clutch and six-speed automatic transmissions replace four- and five-speeds ✔ Increased unibody applications ✔ Introduction of additional small vehicles ✔ Auto start-stop systems (micro-hybrids) introduced ✔ Add hybrid electric vehicle (HEV) applications ✔ Flexible-fuel vehicles ✔ Compressed natural gas (CNG) prepped engines available where select markets demand	● EcoBoost engines available in nearly all vehicles; engine displacement reduction aligned with vehicle weight savings ✔ Electric power-assisted steering – high volume ✔ Additional aerodynamics improvements ✔ Six-speed automatic transmissions – high volume ● Introduce substantial weight reductions; 250–750 lbs. ✔ Increased application of Auto Start-Stop ✔ Increased use of hybrid technologies ✔ Introduction of plug-in hybrid electric vehicle (PHEV) and battery electric vehicle (BEV) ✔ Vehicle and powertrain capability to leverage available renewable fuels ● Develop fuel cell stack technology	● Introduce second-generation EcoBoost and advanced tech diesel ● Efficient heating, ventilation and air conditioning for HEVs, PEHVs and BEVs ● High-volume eight-plus speed automatic transmissions ● Continued weight reduction actions via advanced materials ● Increase volume of HEV and PHEV technologies ● Evolve BEV and PHEV ecosystems ● Optimize engines/vehicles for higher octane/alternative fuels ● Introduction of fuel cell electric vehicles	● Second-generation EcoBoost and advanced tech diesels – high volume ● Continued efficiencies in electrical architecture and intelligent energy management ● Lightweight materials proliferate to global platforms ● Next-generation HEV and PHEV technologies ● Continued leverage of BEVs ● Engines capable of operating on fuels with increased renewable hydrocarbons ● Fuel cells migration timing aligned with fuels and infrastructure availability

A Portfolio Approach

In the very early years of our industry, automotive engineers experimented with a variety of methods for powering vehicles, including electricity and biofuels. The internal combustion engine using petroleum-based gasoline and diesel rose to the top fairly quickly, and has been the standard vehicle power source for the past 100 years. Reminiscent of those early years, we are now in a period of intense development and adoption of new vehicle technologies and fuels. At this time, however, there is no single winner in the race for the vehicle of the future.

That is why Ford is taking a “portfolio approach” to developing sustainable technologies and alternative fuel options. Our goal is to provide diversity in fueling options, in order to meet customers’ differing needs, while improving vehicle energy efficiency and long-term sustainability. We are thus providing customers with a range of affordable, fuel-efficient vehicles, advanced powertrains and alternative-fueled vehicle options – including fuel-efficient EcoBoost® gasoline engines, advanced diesel engines, hybrids, plug-in hybrids, all-electric vehicles and alternative-fuel vehicles. We call this approach the “power of choice,” because it allows customers to choose the vehicle that best meets their driving needs.

We also believe that traditional gasoline- and diesel-powered vehicles with internal combustion engines will continue to be a major part of the mix for quite some time. So we are working to improve the fuel efficiency of the engines and transmissions of our current vehicles, along with every vehicle subsystem.

Most importantly, we are developing global vehicle platforms that are compatible with a wide range of fuels and powertrain technologies. This allows us to offer a portfolio of options to our customers, target options to regions where they make the most sense and evolve our vehicles as technologies and markets develop. Global platforms that have “plug-and-play” compatibility with a wide range of technologies will also allow us to make the range of fuel and powertrain options available more affordably. For example, we have introduced an all-electric Ford Focus, a next-generation hybrid electric Ford C-MAX, and the C-MAX Energi plug-in hybrid – all built on our global C-platform.

Also, we currently produce a range of flexible-fuel vehicle models across our global markets; these vehicles can run on either regular gasoline or E85 (a blend of 85 percent ethanol and 15 percent gasoline). In South America, we also offer vehicles that can run on E100. Though biofuels are not available in every market, they are widely available in the U.S. and South America and in some parts of Europe, so it makes sense for us to provide this option to customers who can take advantage of it. In addition, biofuel availability is expected to increase globally. In Europe, the EU’s Renewable Energy Directive mandates that 10 percent of energy in the transportation sector must come from renewable fuels by 2020. In the U.S., the Renewable Fuel Standard requires annual increases in the volume of renewable fuels, reaching 36 billion gallons by 2022. Our flexible-fuel vehicles, which are provided at little or no additional cost, allow consumers to choose fuels based on availability and price. For the 2013 model year, we are offering 15 flexible-fuel models in the U.S.

We are also producing select vehicle models that can be converted to run on compressed natural gas (CNG) and liquefied petroleum gas (LPG) (also known as propane autogas). And, we are working with qualified vehicle modifiers to ensure that conversion to those fuels meets our quality, reliability and durability requirements. The Ford Transit Connect, the entire F-Series Super Duty® pickup truck and chassis cab lineup, our E-Series Van and Cutaway models, as well as our medium-duty trucks, are all available with a CNG/LPG conversion-ready engine package. In Europe, we offer CNG and LPG conversions of various models in markets where dedicated infrastructure exists, such as Italy, Germany and the Netherlands.

CNG and LPG are particularly good options for fleet customers, such as taxi companies and delivery services, that use a central refueling system. In addition, CNG and LPG are widely available as vehicle fuels throughout South America and Europe. We are delivering CNG/LPG-ready engines to provide another lower-carbon option to those customers for whom this option

makes sense.

As noted above, we have also been developing a range of electrification technologies. In fact, we now offer six electrified vehicles for sale in the U.S. – three hybrid electric vehicles, two plug-in electric vehicles and one battery electric vehicle. Our vehicle electrification strategy is based on providing customers with a variety of vehicle choices to meet their driving needs. To read more about this strategy, please see Electrification: A Closer Look. All-electric and plug-in hybrid vehicles may initially make the most sense for urban drivers and fleet users who have daily commutes under 40 miles. However, as battery and recharging options continue to advance, we expect these vehicles to work for a wider range of our customers.

In the longer term, hydrogen may emerge as a viable alternative fuel. Hydrogen has the potential to diversify our energy resources and lower lifecycle greenhouse gas emissions, if low-carbon hydrogen production becomes feasible. To prepare for this, we are developing technology to power vehicles with hydrogen fuel cells. In addition, we are working to pair hydrogen fuel cell technology with vehicle electrification technologies to maximize the sustainability benefits of both technologies.

This section describes our current actions and future plans to develop a wide range of energy-efficient technologies, alternative fuels and advanced powertrain technologies that will give our customers near-, mid- and longer-term options for more sustainable vehicles.

Improving Fuel Economy

This section outlines our plans for improving the fuel economy of traditional gas and diesel engines. These actions include implementing advanced engine and transmission technologies, weight reductions and aerodynamic improvements, as well as increasing the efficiency of vehicle subsystems.

For more information about each of our fuel-efficiency technologies, please click on the icons in the graphic above.

EcoBoost®

Technology Overview

The centerpiece of our near-term fuel-economy improvement efforts is the EcoBoost engine, which uses turbocharging and direct injection along with reduced displacement to deliver significant fuel-efficiency gains and CO_2 reductions, relative to larger displacement engines, without sacrificing vehicle performance.

Benefits

EcoBoost offers comparatively better value than many other advanced fuel-efficiency technologies. Due to its affordability relative to competing powertrain options, and its compatibility with most of the gas-powered vehicles we produce, we are able to offer EcoBoost's fuel-economy benefits throughout our product lineup more quickly and to a greater number of our customers. Our rapid deployment of EcoBoost in high volumes across a wide array of our vehicle nameplates is also helping us make a dramatic step forward in CO_2 emission reductions.

Deployment

Ford initially introduced the EcoBoost engine in 2009. Since then we have sold more than 520,000 EcoBoost-equipped vehicles globally. In 2012 we offered 11 EcoBoost-equipped vehicles in the U.S., up from seven in 2011, thereby tripling the production capacity of EcoBoost-equipped Ford vehicles. By the end of 2013 we will offer EcoBoost engines on four more North American nameplates; at that point they will be available on 90 percent of our North American and European nameplates. Also, we continue to migrate EcoBoost engines to our other regions.

All told, we have introduced or announced five EcoBoost engine displacements with multiple derivatives for specific vehicles and markets, as follows:

- 3.5L V6 EcoBoost: We introduced the first EcoBoost engine – a 3.5L V6 – in North America on the 2010 Lincoln MKS, Lincoln MKT, Ford Taurus SHO and Ford Flex. This engine provides comparable or superior performance to a normally aspirated V8 engine, but with the fuel economy of a V6. We also offer the 3.5L EcoBoost on the F-150, beginning with the 2011 model.

- 2.0L I-4 EcoBoost: In 2010 we introduced a 2.0L I-4 EcoBoost engine, the first in the EcoBoost lineup to go truly global.
  - In the U.S., the 2.0L I-4 EcoBoost is currently available on the Ford Edge, Explorer, Focus, Escape and Fusion. In Europe, the Ford S-MAX, Mondeo and Galaxy are available with a 2.0L EcoBoost option.
  - In China, we offer the 2.0L EcoBoost on the Ford Mondeo.
  - In Australia, we offer the 2.0L EcoBoost on the Ford Mondeo and Falcon.

- 1.6L I-4 EcoBoost:
  - In Europe, the 1.6L I-4 EcoBoost engine is available on the Ford C-MAX and Focus.
  - In the U.S., the engine was introduced on the 2013 Ford Escape. It is also available on the 2013 Fusion and C-MAX.

- 1.5L I-4 EcoBoost:
  - Announced in early 2013, this engine will initially be produced at Ford's Craiova, Romania, plant; other manufacturing locations will be announced in the future.
  - The new engine will be introduced first in China in the all-new Ford Mondeo, with applications following in the Fusion sedan in North America and the new Mondeo in Europe.

- 1.0L I-3 EcoBoost:
  - We introduced the 1.0L three-cylinder EcoBoost engine in Europe on the European Ford Focus. In 2013 we are migrating this engine into the B-MAX, C-MAX and all-new Mondeo.
  - In the U.S., we are introducing the 1.0L EcoBoost on the 2014 Ford Fiesta.
  - In India, we introduced the 1.0L EcoBoost on the Ford EcoSport. This engine will also be available in vehicles in China and other regions, and we ultimately expect to produce up to 1.3 million units annually.

These EcoBoost engines illustrate Ford's plans to use smaller-displacement, power-boosted engines to deliver improved fuel economy and performance throughout our vehicle lineup. As EcoBoost is a key element of our long-term powertrain strategy, we will continue to improve its efficiency and vehicle application potential through the further development of supporting advanced technologies.

Advanced Transmissions

Technology Overview

We have adopted six-speed transmissions across our product portfolio, replacing less-efficient four- and five-speed transmissions. We are also improving the performance of all our advanced transmissions by further optimizing their operation with EcoBoost engines and further reducing parasitic losses such as mechanical friction and extraneous hydraulic and fluid pumping, to achieve higher operating efficiency. We are also researching other advanced transmission concepts to support further efficiency improvements. In April 2013, for example, we announced that we will jointly develop – with General Motors – an all-new generation of advanced-technology nine- and 10-speed automatic transmissions for cars, crossovers, SUVs and trucks, which will provide further vehicle performance and fuel-efficiency benefits.

Benefits

Six-speed transmissions improve fuel economy by up to 9 percent over four- and five-speed gear boxes, depending on the application. They also provide better acceleration, smoother shifting and a quieter driving experience.

Deployment

We have already introduced six-speed transmissions in the majority of our vehicles. Ninety-eight percent of the transmissions on our vehicles in North America are now advanced six-speed gearboxes. We plan to make advanced eight-plus speed gearboxes available by the end of the

decade.

Electric Power-Assisted Steering

Technology Overview

Electric power-assisted steering (EPAS) uses a small electric motor instead of conventional hydraulic systems to control steering.

Benefits

EPAS typically will reduce fuel consumption and decrease carbon dioxide emissions by up to 3.5 percent over traditional hydraulic systems, depending on the vehicle and powertrain application. On the 1.4L Duratorq® diesel Ford Fiesta, for example, which is available in Europe, EPAS provides a 3–4 percent improvement in fuel efficiency compared with a hydraulic-based power steering system. By combining EPAS with aerodynamic improvements, we improved the mileage of this vehicle by approximately 8 percent compared to the previous model year. EPAS also enables other advanced technologies such as “pull drift” compensation, which detects road conditions – such as a crowned road surface or crosswinds – and adjusts the EPAS steering system to help the driver compensate for pulling and drifting. EPAS also enables Active Park Assist, which helps drivers to parallel park.

Deployment

We already offer EPAS in the Ford Explorer, F-150, Mustang, Fusion, Flex, Taurus and Escape and the Lincoln MKS, MKT and MKZ Hybrid in North America; the new Ford C-MAX, Focus, Focus ST, and Fiesta in North America and Europe; and the Ford Ka and Kuga in Europe. EPAS is also used in all of our new electrified vehicles.

Auto Start-Stop

Technology Overview

“Start-stop” technology shuts down the engine when the vehicle is stopped and automatically restarts it before the accelerator pedal is pressed to resume driving. Start-stop technology includes sensors to monitor functions such as cabin temperature, power supply state and steering input, so that vehicle functioning remains exactly the same to the driver as when the engine remains on continuously. If the system senses that a vehicle function has been reduced and will negatively impact the driver’s experience, the engine will restart automatically.

Benefits

This technology maintains the same vehicle functionality as that offered in a conventional vehicle, but saves the fuel typically wasted when a car is standing and running at idle. Savings vary depending on driving patterns. On average, it improves fuel efficiency by 3.5 percent, but it can improve fuel efficiency even more in city driving. The technology can also reduce tailpipe emissions to zero while the vehicle is stationary – for example, when waiting at a stoplight.

Deployment

Start-stop technology is already being used in our hybrid vehicles and will eventually provide a cost-effective way to improve fuel efficiency on a large volume of non-hybrid vehicles. In the U.S., we introduced the technology on the all-new 2013 Ford Fusion with 1.6L engine and automatic transmissions. In Europe, Auto Start-Stop is already standard on the Ford Ka and certain versions of the Mondeo, S-MAX, Galaxy, Focus, C-MAX and Grand C-MAX. By 2016, 90 percent of our vehicle nameplates globally will be available with Auto Start-Stop.

Weight Reductions

Technology Overview

We are also working to improve fuel economy by decreasing the weight of our vehicles – in particular by increasing our use of unibody vehicle designs, lighter-weight components and lighter-weight materials.

Unibody vehicle designs reduce weight by eliminating the need for the body-on-frame design used in truck-based products. We are also using lightweight materials, such as advanced high-strength steels, aluminum, magnesium, natural fibers, and nano-based materials to reduce vehicle weight. And, some of our advanced engine and transmission technologies, such as EcoBoost® and our dual-clutch PowerShift transmissions, further reduce overall vehicle weight.

Benefits

In general, reducing vehicle weight reduces fuel use. To achieve our fuel-efficiency goals, we need to reduce the weight of our vehicles by 250 to 750 pounds, without compromising vehicle size, safety, performance or customer-desired features. Weight reductions alone may have relatively small impacts on fuel economy. By itself, a 10 percent reduction in weight results in approximately a 3 percent improvement in fuel efficiency. However, if vehicle weights can be reduced even more substantially, it becomes possible to downsize the powertrains required to run the vehicle. Weight reductions combined with powertrain re-matching not only improves fuel economy, but helps maintain overall performance (compared to a heavier vehicle with a larger engine).

Many lightweight materials also have benefits beyond fuel-efficiency gains. To learn more about the benefits of natural fiber materials, please see the Sustainable Materials section.

Deployment

Unibody designs have replaced heavier truck-based designs on the Ford Explorer, Ford Edge and Lincoln MKX crossover.

And we have implemented lighter-weight materials in a range of vehicles and parts applications, including the following:

- In 2012, we introduced a new, lightweight, injection-molded plastic technology called MuCell on the all-new Ford Escape. Manufacturing MuCell involves the highly controlled use of a gas such as carbon dioxide or nitrogen in the injection-molding process, which creates millions of micron-sized bubbles in uniform configurations, lowering the weight of the plastic part by more than one pound per vehicle. This is the first time MuCell has been used in an instrument panel. In addition to reducing weight, the MuCell microcellular foam saves money and production time. On the 2012 Escape, MuCell saves an estimated $3 per vehicle vs. solid injection molding, and molding cycle time is reduced 15 percent. This plastic was the Grand Award Winner at the 2011 Society of Plastic Engineers competition in the “Most Innovative Use of Plastics Award” category.

- The Lincoln MKT crossover has an advanced lightweight magnesium and aluminum liftgate, which is more than 20 pounds, or 40 percent, lighter than a similar part made from standard steel.

- We use an aluminum hood on the Ford F-150 and high-strength, lighter-weight steels in more than 50 percent of the F-150 cab.

- The Ford Explorer makes extensive use of high-strength steels. Nearly half of the vehicle’s structure – including the A-pillars, rocker panels and front beams – are comprised of high-strength steels, such as boron. The Explorer also has an aluminum hood.

- In the Ford Focus, more than 55 percent of the vehicle shell is made from high-strength steel and more than 26 percent of the vehicle’s structure is formed from ultra-high-strength boron steels. The Focus combines these high-strength steels with innovative manufacturing methods to further reduce weight. For example, the vehicle’s B-pillar reinforcement, a key structural part, is made from ultra-high-strength boron steel that has been produced using an innovative tailor-rolling process. The process allows the thickness of the steel sheet to be varied along its length, so the component has increased strength in the areas that are subjected to the greatest loads. The tailor-rolled B-pillar has eight different gauge thicknesses, to improve side-impact crash performance while saving more than three pounds per vehicle.

- We are also expanding our use of aluminum engine parts and all-aluminum engines. The current Mustang, for example, has an aluminum engine.

- By using high-strength steels, the European Ford Fiesta weighs approximately 40 kilograms less, depending on engine choice, even though it stands on virtually the same footprint as the previous model and has 10 kilograms of new safety features and sound insulation.

Ford researchers are also investigating additional new lightweight materials. For example, we are investigating and developing:

- New types of steel that are up to three times stronger than current steels and improve manufacturing feasibility because they can be formed into parts more easily.
- Polymeric plastic strengthening foams that are strong enough to stabilize bodywork in an accident but light enough to float on water. These foams are being used to reinforce sections

of the steel auto body, such as the B-pillars.

- Surface coatings that reduce engine friction and remain intact even under the most adverse conditions.
- Alternative (copper-based) wire harness technologies that will enable significant weight reductions.
- Nanotechnology to model material properties and performance at the nano-scale, which will allow us to develop better materials more quickly and with lower research and development costs.
- Nano-filler materials in metal and plastic composites, to reduce their weight while increasing their strength. For example, we are developing the ability to use nano-clays that can replace glass fibers as structural agents in reinforced plastics. Early testing shows plastic reinforced with 5 percent nano-filler instead of the typical 30 percent glass filler has strength and lightweight properties that are better than glass-reinforced plastics.

Ford is also working to understand the health and safety issues that may be posed by nano-materials. Ford has joined with other automakers under the U.S. Council for Automotive Research umbrella to sponsor research into nano-materials' potential impact on human health and the environment. This research has addressed many health- and environment-related questions so that we can focus our nano-materials research and development in areas that will be most beneficial.

Battery Management Systems

Technology Overview and Benefits

Electrical systems are another area in which we are making progress. By reducing vehicle electrical loads and increasing the efficiency of a vehicle's electrical power generation system, we can improve fuel efficiency. Our Battery Management Systems (BMSs), for example, control the power supply system (in particular the alternator) to maximize the overall efficiency of the electrical system and reduce its negative impacts on fuel economy. This is accomplished by maximizing electricity generation during the most fuel-efficient situations, such as vehicle deceleration. In less fuel-efficient situations, the alternator's electricity generation is minimized to conserve fuel.

Deployment

BMSs have already been launched in Europe on the Ford Focus and Mondeo and in the U.S. beginning with the 2011 Ford Edge, Explorer and F-150, the 2011 Lincoln MKX and the 2012 Ford Focus. We will continue to implement BMSs on a range of 2013 model year vehicles. We have also introduced more-efficient alternators, which improve fuel economy.

Aggressive Deceleration Fuel Shut-Off

Technology Overview

Aggressive Deceleration Fuel Shut-Off (ADFSO) allows fuel supply to the engine to be shut off during vehicle deceleration and then automatically restarted when needed for acceleration or when the vehicle's speed approaches zero. This advancement builds on the Deceleration Fuel Shut-Off technology available in our existing vehicles by extending the fuel shut-off to lower speeds and more types of common driving conditions, without compromising driving performance or emissions.

Benefits

This improved fuel shut-off technology will increase fuel economy by an average of 1 percent. An additional benefit is increased deceleration rates, which should extend brake life and improve speed control on undulating roads.

Deployment

Starting in 2008, ADFSO was implemented on the Ford Flex, F-150, Expedition and Escape and the Lincoln MKS and Navigator. We are continuing to implement it as we bring out new vehicles. The ADFSO technology will be a standard feature in all of our North American vehicles by 2015, and we will continue to expand implementation globally.

Aerodynamics

Technology Overview and Benefits

We are optimizing vehicle aerodynamics to improve the fuel economy of our global product lineup. Using a systems engineering approach that integrates aerodynamics in an interdisciplinary and collaborative design and development process with other fuel-economy technologies, we are maximizing the fuel efficiency of every vehicle we develop. During the development process, we use advanced computer simulations and optimization methods coupled with wind-tunnel testing to create vehicle designs that deliver up to 5 percent better fuel economy. In addition, we are developing simulation systems that allow us to replicate on-the-road driving conditions during the virtual design phase, to facilitate the real-world benefits of aerodynamic improvements. We have a global aerodynamics team to support global product design. Aerodynamics engineers from North America, Europe, South America and Asia Pacific and Africa collaborated to deliver three of our most important global vehicles – the 2013 Ford EcoSport, C-MAX and Ranger pickup – with improved aerodynamics.

Active Grille Shutter technology is one of our key aerodynamics improvements. It reduces aerodynamic drag by up to 6 percent, thereby increasing fuel economy and reducing carbon dioxide (CO_2) emissions. When fully closed, the reduction in drag means that the Active Grille Shutter can reduce CO_2 emissions by 2 percent.

Deployment

We implemented Active Grill Shutter technology first on our European vehicles. In the U.S., we have implemented it on the 2012 Ford Focus and Edge, the 2013 Ford Escape and the all-new 2013 Ford Fusion.

We are also making significant improvements in aerodynamics on vehicles introduced for the 2012 to 2014 model years. For example:

- We reduced aerodynamic drag in the 2013 Fusion and Lincoln MKZ up to 10 percent, in comparison with the 2012 models, through extensive aerodynamic improvements, including underbody shielding, tire spoilers, wheels, body shape, vehicle proportion and Active Grille Shutters. Our aerodynamics engineers even optimized the aerodynamics of wheel and mirror design to further reduce drag from the front of the vehicle. The 2013 Fusion Hybrid achieved an outstanding drag coefficient of as low as 0.27 – among the best in the world. (For more information on our fuel-economy leaders, please see Vehicle Fuel Economy and CO_2 Emissions Progress and Performance.)

- The 2013 Ford Escape is nearly 10 percent more aerodynamic than the outgoing model.

- We significantly reduced the drag coefficient on the all-new 2012 Focus four-door to 0.297 from the previous model's 0.320. Optimized aerodynamics also help to reduce wind noise in the Focus.

Smaller Vehicles

Technology Overview and Benefits

Smaller vehicles provide consumers with another way to get better fuel economy. Simply by being smaller and lighter, smaller vehicles can significantly reduce fuel use and related emissions.

Deployment

We are launching more small cars to provide more fuel-efficient options. For example:

- We are introducing subcompact vehicles commonly referred to as "B-cars." These include the all-new Ford Fiesta, which was introduced in Europe in 2008, the Asia Pacific region in 2009 and the Americas in 2010.

- We are introducing a wide range of new vehicles in the U.S. and other markets based on our global "C-platform," or compact sedan. In the next few years, we are introducing 10 new vehicles based on this C-platform. In 2011, we launched the next-generation global Ford Focus to North America. This vehicle includes the first in a series of powertrain technology developments that will give our C-car segment offerings a combination of power, performance and unsurpassed fuel economy. We also now offer a battery-electric version called the Focus Electric. In addition, we introduced the C-MAX Hybrid and C-MAX Energi, a plug-in hybrid, in the U.S. The C-MAX is a multi-activity vehicle based on our C-platform. And, we brought the European Transit Connect small commercial van to North America. This vehicle fills an unmet need in the U.S. market by offering the large cargo space that small business owners need in a fuel-efficient, maneuverable, durable and flexible vehicle package.

- In 2012 we revealed the all-new Ford EcoSport compact SUV, which will ultimately be available in nearly 100 markets globally, including India and Brazil. This vehicle is part of our global commitment to deliver fuel-efficient vehicles that customers truly want and value.

We have loaded these smaller vehicles with features and options commonly found on larger or luxury vehicles to make them attractive, thus encouraging customers to choose more fuel-efficient cars and trucks.

All of these smaller vehicles illustrate Ford's actions to provide consumers with a wider range of fuel-efficient options, as well as our efforts to leverage the best of our global products to offer new choices to customers in all of our regions worldwide.

Migration to Alternative Fuels and Powertrains

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Our migration to alternative fuels and powertrains includes introducing electrified vehicles – including hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) – as well as advanced clean diesel technologies and vehicles that run on renewable biofuels. We are also working to advance hydrogen fuel cell vehicle (FCV) technologies.

For more information on our plans regarding each of these alternative fuels and powertrain technologies, please click on the Ford vehicles above.

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Advanced Clean Diesel

Ford's New Full-Size Transit Van

Modern diesels are 30 to 40 percent more fuel efficient than gasoline vehicles. Ford offers a range of advanced diesels in Europe under the ECOnetic label. In the U.S., Ford introduced a new 3.2L Power Stroke® turbo diesel engine in our full-size Transit van, following up on the launch of a new 6.7L V8 Power Stroke turbo diesel in the 2011 F-Series Super Duty® truck, which had 20 percent better fuel economy than the outgoing model.

Technology Overview and Benefits

Diesel engine technology is not in itself new. However, advanced diesel technologies offer significant advantages over traditional gasoline engines and older diesel engines. They consume 30 to 40 percent less fuel than gasoline engines, and on a well-to-wheels basis they emit 15 to 30 percent less carbon dioxide (CO_2).[1] In addition, direct-injection diesel engines provide exceptional power and torque, resulting in better driving performance and towing capabilities. Advanced diesel technology also dramatically reduces non-CO_2 tailpipe emissions such as NOx and particulate matter.

Our advanced diesel engines use a range of technologies in the engine and after-treatment systems to reduce emissions. For example:

Our 1.6L Duratorq® TDCi engine, used on European vehicles, includes more efficient eight-hole fuel-injector nozzles, a more powerful engine-control unit and a water-cooled charge air cooler. In addition, parasitic losses have been cut through use of low-friction piston ring coatings, a variable-flow oil pump and a more-efficient vacuum pump. After-treatment system improvements include a coated diesel particulate (soot) filter coupled with a lean NOx trap to enable Euro 5 emissions compliance.

Our 6.7L Power Stroke V8 diesel, offered on Super Duty Trucks in the U.S., which has 20 percent better fuel economy and 14 percent more power than the previous model, uses an innovative exhaust gas recirculation system with two independent cooling loops, which enable optimal combustion phasing for fuel economy while reducing NOx emissions from the engine into the after-treatment system. It also uses a high-precision, common-rail fuel-injection system featuring piezo-electric injectors. This system uses a stack of more than 300 wafer-thin ceramic platelets to control the fuel-injector nozzle, allowing it to operate faster than other electro-mechanical fuel injectors, decrease fuel consumption and reduce emissions.

Our diesel engines offered in the U.S also use a range of advanced after-treatment technologies to

reduce emissions, including:

- a diesel oxidation catalyst that converts and oxidizes hydrocarbons into water and carbon dioxide;
- selective catalytic reduction that uses an ammonia and water solution to convert the NOx in the exhaust stream into water and inert nitrogen; and
- a diesel particulate filter that traps any remaining soot and periodically burns it away when sensors detect that the trap is full.

Deployment

In Europe, where diesel-powered vehicles account for more than 50 percent of new vehicle sales and make up approximately 30 percent of the total vehicle fleet on the road, Ford continues to improve its strong lineup of fuel-efficient and clean diesel vehicles. For example, we continue to introduce ECOnetic versions of Ford models that deliver improved fuel economy and emissions. The ECOnetic lineup currently includes versions of the Ford Fiesta, Focus, Mondeo and Transit. Several of the ECOnetic models use diesel engines, which meet the stringent Euro 5 emissions standards and emit less than 100 g/km of CO_2. For example, the new Focus ECOnetic has fuel economy of 3.4L/100km and emits just 89 g/km of CO_2.

In North America, where diesels engines are primarily used in the medium-duty truck market, Ford offers two advanced diesel engines. In 2012, we introduced a diesel version of the full-size Transit van, powered by a new 3.2L Power Stroke turbo diesel engine. Like the larger 6.7L Power Stroke V8 diesel, which Ford introduced on F-Series Super Duty trucks in 2011, the 3.2L turbo diesel engine's fuel system has been carefully tailored and calibrated for combustion efficiency. It enables the newest Power Stroke engine to achieve exceptional fuel-economy ratings without affecting power levels.

These new diesel engines also meet the U.S. Environmental Protection Agency's and California Air Resources Board's strict 2010 heavy-duty truck emission regulations, which require 80 percent lower NOx emissions than the 2007 regulations.

Our advanced diesel engines are also compatible with biodiesel, a renewable fuel made from soybean oil and other fats. The 2011 Super Duty is Ford's first vehicle in North America that is B20 compatible, meaning it can run on fuel composed of 20 percent biodiesel and 80 percent ultra-low-sulfur diesel. The diesel Transit van is also expected to be B20 compatible. In Europe, our vehicles are compatible with B7, and we are working with European fuel standards organizations to establish fuel-quality standards for biodiesel blends greater than B5. The use of biodiesel helps to reduce dependence on foreign oil and reduces lifecycle CO_2 emissions. For more information on biofuels, please see the Renewable Biofueled Vehicles section.

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1. Figures based on J.L. Sullivan, R.E. Baker, B.A. Boyer, R.H. Hammerle, T.E. Kenney, L. Muniz, and T.J. Wallington, 2004, "CO_2 Emission Benefit of Diesel (versus Gasoline) Powered Vehicles," *Environmental Science and Technology*, 38: 3217-3223.

Hybrid Electric Vehicles (HEVs)

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Hybrid Electric Vehicles (HEVs)

Ford C-MAX Hybrid

Hybrid electric vehicles are powered by a traditional internal combustion engine and battery power to deliver improved fuel economy.

Technology Overview and Benefits

HEVs are powered by both an internal combustion engine and an electric motor with a battery system. The key benefit of HEVs is reduced fuel consumption: When they are powered by the electric motor and battery system, they do not burn gasoline. In most instances at low speeds and for short distances, Ford hybrids run exclusively on electricity. At higher speeds, and when more power is needed, the gasoline engine kicks in.

All of our hybrid vehicles use Ford's powersplit architecture, meaning they can run exclusively on battery power, exclusively on gas power or on a combination of both to deliver the best overall fuel efficiency. Ford hybrids also feature a Regenerative Braking System. Unlike a traditional gasoline engine in which the energy generated by braking is lost, this innovative technology enables Ford hybrids to capture braking energy normally lost and use it to help recharge the battery.

Our past HEVs used nickel metal hydride batteries. The HEVs we are launching now use more advanced lithium ion batteries. For more detail on our battery technologies, please see Battery Technologies.

Our new HEVs feature additional technology improvements, including:

- Electric motors capable of operating at higher electric speeds
- Optimized gear ratios, allowing for improvements in fuel economy
- More precise controls to deliver higher levels of refinement as the powertrain transitions between engine and electric drive
- Reduced weight to help increase fuel economy

Our new hybrids also have a suite of driver information systems to help drivers maximize fuel efficiency. For more information on these technologies, please see Helping Drivers Improve Fuel Efficiency with Information Technology.

Deployment

We are currently increasing our hybrid volume and preparing for hybrid capability across our highest-volume global product platforms.

In the fall of 2012, we launched our newest HEV, the all-new C-MAX Hybrid. This is one of three electrified vehicle options on our C-platform; the others are the Focus Electric BEV and the C-MAX Energi PHEV. The C-MAX Hybrid uses Ford's powersplit hybrid architecture, with improved fuel efficiency and a lighter, smaller lithium ion battery system.

With the launch of the C-MAX Hybrid and C-MAX Energi, Ford becomes North America's largest maker of hybrid transmissions.

Also in 2012, we launched a hybrid version of the newly redesigned Ford Fusion. The Fusion is the first sedan to offer gasoline, hybrid and plug-in hybrid powertrains, underscoring Ford's commitment to giving customers the "power of choice" in fuel-efficient technologies. The new Fusion Hybrid features an all-new 2.0L Atkinson-cycle four-cylinder gasoline engine, which is significantly downsized from the previous 2.5L unit while maintaining performance standards. This innovative powertrain delivers fuel economy of 47 mpg in city and highway driving. We also continue to offer a hybrid electric version of the Lincoln MKZ.

Battery Electric Vehicles (BEVs)

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Battery Electric Vehicles (BEVs)

Ford Focus Electric

Electric vehicles use no gasoline; they are powered by a high-voltage electric motor and battery pack. In 2012, Ford launched the Focus Electric, with a U.S. Environmental Protection Agency (EPA) combined fuel-economy rating of 105 miles per gallon equivalent (MPGe), a driving range of 76 miles on a charge and a four-hour charge time when using a 220-volt outlet.

Technology Overview and Benefits

Battery electric vehicles do not have an internal combustion engine and do not use any onboard gasoline. Instead, they use a high-voltage electric motor, which gets its power from a high-voltage battery pack charged by plugging into a standard 110-volt or 220-volt outlet in the U.S., or a 230-volt outlet in Europe. The primary benefit of BEVs is that they completely eliminate carbon dioxide (CO_2) and other emissions directly from the vehicle. However, they are not necessarily zero-emission over their total lifecycle, depending on the source of electricity used to charge their batteries. Because electricity is often cheaper than gasoline, BEVs may be less costly to operate than gasoline vehicles.

Ford's electric vehicles use lithium ion batteries, which provide better performance, require less space and weigh less than the nickel metal hydride batteries used in previous-generation hybrid electric vehicles. The Focus Electric's advanced lithium-ion battery system was engineered by Ford in cooperation with the supplier LG Chem. It uses an advanced, active-liquid cooling and heating system to precondition and regulate the temperature, which helps to maximize battery life and fuel-free driving range.

A full recharge of the Focus Electric takes just four hours at home with the 240-volt charge station. The Focus Electric also features a Regenerative Braking System, which can help maximize vehicle driving range by capturing braking energy and using it to recharge the battery. And, the vehicle uses a wide range of advanced information-technology features, including an enhanced version of MyFord Touch® – our new driver interface technology – and tools for remote vehicle communications and charging. For more information on these technologies, please see Living the Electric Lifestyle.

Deployment

We are implementing an expanded, comprehensive electric vehicle strategy aligned with growing public interest in advanced technologies that reduce the use of gasoline and diesel. To read more about our overall approach, please see Electrification: A Closer Look.

The Focus Electric, our all-electric passenger sedan is based on the all-new Focus. This car has a driving range of 76 miles on a single charge of its lithium-ion high-voltage battery and achieves an EPA-rated combined fuel efficiency of 105 MPGe. We initially introduced the Focus Electric in 19 U.S. metropolitan areas. We are now expanding availability to new markets and ramping up to higher volumes.

Plug-in Hybrid Electric Vehicles (PHEVs)

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Plug-in Hybrid Electric Vehicles (PHEVs)

Ford C-MAX Energi

Plug-in hybrid electric vehicles are powered by an internal combustion engine and a high-voltage electric battery that can be charged from an electric outlet. The engine and the battery work together to provide the benefits of grid-connected power and hybrid powertrain efficiency. Ford introduced its first commercially available PHEV, the C-MAX Energi, in the U.S. in 2012.

Technology Overview

PHEVs are similar to HEVs in that they are equipped with both an electric battery and a gas-powered engine. Unlike HEVs, however, PHEVs are equipped with a high-capacity battery that can be charged from a private household or public electric outlet. While regular HEVs maintain a roughly constant battery charge, PHEVs discharge the battery while driving to provide additional fuel savings. PHEVs have the potential to reduce tailpipe emissions to near zero when running on battery power. When the battery is depleted, the vehicle can continue to operate on the gas-powered engine, providing significant benefits over battery electric vehicles in terms of driving range before refueling . A PHEV's overall lifecycle emissions depend on the electrical power source and the usage characteristics of the vehicle. PHEVs can be significantly less expensive for consumers to operate than gasoline-powered vehicles, particularly for consumers who take relatively short trips most of the time. During such trips, PHEVs allow drivers to travel on grid-based electricity stored in batteries instead of more costly gasoline.

The high-voltage battery is charged through regenerative braking and discharged during acceleration events to improve the overall fuel economy of the vehicle – similar to the operation of today's conventional hybrids.

Benefits

Overall, plug-in hybrid vehicles offer several benefits, including:

- Reduced dependency on petroleum and increased energy independence
- Reduced environmental impact through reductions in greenhouse gas emissions as well as smog-forming tailpipe emissions
- Increased use of electricity from renewable energy sources (e.g., wind and solar) for vehicle recharging
- Potential consumer savings on energy and fuel costs

- The extra benefit of being able to charge the batteries at home or other parking location. This means that PHEVs might better suit those customers who do the majority of their driving in city and other urban environments, where electric battery power is the preferred powertrain alternative.

Deployment

In 2012 we introduced the Ford C-MAX Energi in the U.S., our first production PHEV. The C-MAX Energi has a U.S. Environmental Protection Agency (EPA)-rated combined fuel economy of 100 MPGe, plus a 620-mile overall driving range. In January 2012, we introduced the Ford Fusion Energi, a plug-in hybrid version of our all-new Fusion. The Fusion Energi also delivers 100 MPGe.

Like Ford's HEVs, the C-MAX Energi and Fusion Energi offer a range of information-technology tools to help drivers improve fuel efficiency. For more information on these technologies, please see Living the Electric Lifestyle.

The long-term success of PHEVs in the real world depends on cooperation between automakers, utilities, the government and drivers. Ford is engaged in multiple collaborative projects to help smooth the transition to electrified vehicles. For more information on this, please see Collaborating with Partners in our Electrification section.

Renewable Biofueled Vehicles

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Ford Galaxy

Biofuels offer a relatively affordable way to reduce carbon dioxide (CO_2) emissions. To date, we have introduced more than 6.3 million flexible-fuel vehicles globally. Ford is a market leader and pioneer in ethanol-powered, flexible-fuel vehicles and will continue to provide a range of products that are E85-capable, aligned with infrastructure growth and consumer demand.

Current Generation Biofuels

Ford has a long history of developing vehicles that run on renewable biofuels. Our founder, Henry Ford, was a strong proponent of biofuels, and we produced our first flexible-fuel vehicle (FFV) approximately 100 years ago: The Ford Model T was capable of running on gasoline or ethanol.

Biofuels are an important component of our sustainability strategy for three reasons. First, biofuels can help to address economic, social and environmental sustainability, which includes helping us meet our CO_2 emission-reduction targets. Second, the use of biofuels requires relatively modest and affordable modifications to existing vehicle and fueling technology, which makes them a viable near-term option. Third, biofuels offer synergies with our other strategies. For example, the high octane rating of ethanol is a potential enabler for the introduction of higher compression-ratio engines and higher engine-boost technologies that improve the efficiency and torque of our future downsized engines.

Given the current trends of increasing biofuel production, increasing investment in advanced biofuels, increasing vehicle efficiencies and the introduction of vehicles that do not use liquid fuels (such as electric and natural gas vehicles), we believe that the use of biofuels may increase from a current level of approximately 2–3 percent globally to 10–30 percent of global liquid road-transportation fuel over the next few decades. Although Ford is a vehicle manufacturer and not a fuel provider, it is important for us to understand the physical and chemical properties of biofuels (such as their octane ratings), their sustainability attributes (such as lifecycle greenhouse gas (GHG) emissions, water use and energy consumption) and their performance in our vehicles. We are conducting research and development to ensure that our vehicles will be able to exploit the full benefits of biofuels. Our current work focuses on the two biofuels that are available at a commercial scale: ethanol and biodiesel.

The U.S. and Brazil are the world's largest producers of ethanol, which is made from the fermentation of sugars. In the U.S. the sugar is derived via the hydrolysis of corn starch, while in Brazil the sugar is obtained directly from sugar cane. Ethanol is primarily used in blends with gasoline. (Hydrous ethanol is also used in Brazil; it is mixed with little or no gasoline.) Blends are

identified using the volumetric content of ethanol, which is specified numerically after the letter “E” for ethanol. For example, E10 is 10 percent by volume ethanol and 90 percent petroleum gasoline, while E85 is up to 85 percent by volume ethanol. Most automotive fuel supplied in the U.S. is E10. The U.S. Environmental Protection Agency (EPA) has recently issued a waiver permitting E15 to be sold in the U.S. for use in 2001 or newer model year vehicles. Our position regarding E15 is discussed in a separate section below.

An important benefit of ethanol is its higher octane rating, which can improve the efficiency and torque of today’s high-efficiency internal combustion gas engines. We are developing a new fundamental molecular approach to calculating the octane increase provided by ethanol blended into gasoline, which is more accurate than previous approaches.[1,2], The octane rating of a fuel is a critical fuel property that describes its resistance to “knock,” which results from early or uncontrolled fuel ignition. To avoid “knocking,” the compression ratios designed into engines are limited by the lowest expected octane rating of available fuels. However, engines operate at higher thermal efficiency when they can be operated at higher compression ratios using appropriate higher-octane fuel. The increased availability of ethanol in the future provides an opportunity for fuel providers to deliver fuels with higher octane ratings and automakers to provide higher compression ratios – and therefore more-efficient engines.[3]

High-octane ethanol blends offer a win-win-win opportunity in which the increased availability of ethanol could enable increased engine efficiency, resulting in fuel savings for our customers, improved energy security and reduced CO_2 emissions. However, ethanol blends above E10 also may damage engines that are not designed to operate on higher concentrations of ethanol; this poses a particular concern for older vehicles. Appropriate planning and coordination between stakeholders is needed to manage transition issues such as these. Our research into ethanol fuels and octane calculations will help us take the best advantage of higher-octane ethanol-fuel blends in the future.

Biodiesel is a biofuel alternative to petroleum diesel that is made from the transesterification of vegetable oils, including soy, canola, palm and rapeseed, or from animal fat. Biodiesel is distinct from “renewable diesel,” which is made by hydrotreating vegetable oils or animal fats. In the U.S., most biodiesel is currently made from soybean oil. Biodiesel is typically used in blends with petroleum diesel, where the volumetric content of biodiesel is specified numerically after the letter “B.” In Europe all of our new diesel vehicles can run on B7, a blend containing 7 percent biodiesel. We have worked with fuel standards organizations to allow the use of biodiesel blends of greater than B7 in our future products. In order for biodiesel to be a success, it is critical that the fuel be blended to meet stringent standards for quality and consistency. In the U.S., our 2012 F-Series Super Duty® trucks with a 6.7L diesel engine are compatible with B20, and we expect the new Transit van with a 3.2L turbo diesel to be B20-compatible as well. In addition, the gasoline version of these vehicles will be flexiblefuel compatible with gasoline, E85 or any ethanol-gasoline blend between E0 and E85.

Ford has taken a leadership position on biofuels. Since 1997, we have offered FFVs capable of running on gasoline or E85 ethanol (or E100 hydrous ethanol in Brazil). In the U.S., we met our commitment to double our FFV production from 2006 to 2010. To date, we have introduced more than 6.3 million FFVs globally. Ford FFV models are available in many European markets as well.

E15 in the United States

In 2012, the U.S. EPA approved the use of E15 ethanol blends in 2001 and newer model year vehicles. While Ford supports the use of renewable fuels to meet the challenges of energy security and climate change and has committed to expand our lineup of vehicles capable of operating on E85, we do not support approving the use of E15 in older vehicles that were never designed to be operated on that fuel.

The entire legacy fleet of non-FFVs in the U.S. consists of vehicles designed to operate on E0 to E10 (or only E0 for very old vehicles). We are concerned that vehicles will not continue to meet customer expectations for quality, durability and performance, or legal requirements relating to emissions and onboard diagnostics, if the vehicles are operated on a fuel they were not designed to use. The Alliance of Automobile Manufacturers and the Association of International Automobile Manufacturers are among many parties seeking judicial review of the E15 waiver. Ford is a member of the Alliance. Our goal is to ensure that the current and future fuel supply in the U.S. will enable our vehicles to operate properly without creating problems for our customers. We will continue to work with our customers and dealerships in an effort to prevent or mitigate any such problems.

We are undertaking appropriate testing and modifications to allow all of our vehicles in the U.S. from the 2013 model year forward to operate on E15 without affecting the warranty. One opportunity with the introduction of increased ethanol blends is to increase the octane rating of the new fuel. As discussed above, ethanol has an octane rating greater than today’s gasoline, so when the fuels are mixed, the resulting fuel blend should have a higher octane rating than the base gasoline. As the octane rating of a fuel increases, it reduces the tendency for “engine knock.” Many of today’s advanced engines are programmed to improve the efficiency of the engine just short of the point where the consumer would experience engine knock. For such engines, an increase in the

octane rating of the fuel could result in improved vehicle efficiency. Further improvement to engine efficiency (through increased compression ratio and downsizing) could be achieved if manufacturers knew how and when the minimum octane ratings of fuels would increase in the future. Given that a vehicle's efficiency and performance depends on the fuel it uses, the two should be considered systematically. Coordinated efforts among the involved industries (oil, biofuel, auto) and regulatory agencies are needed to ensure that maximum benefit is gained from our future fuels and vehicles.

Future Biofuels

The biofuels currently available at a commercial scale (e.g., ethanol and biodiesel) have advantages relative to their petroleum-derived counterparts. They can be made from locally available raw materials, providing support for rural communities and reducing the need for foreign-supplied oil, while increasing national energy security. They also reduce lifetime (or well-to-wheels) CO_2 emissions compared to conventional petroleum-based fuels. However, important issues remain regarding the energy density of some biofuels, the best way to use these fuels to reduce GHG emissions, their ability to meet fuel needs without impacting food supplies and their potential impact on land-use decisions. (These issues are discussed in more detail below in the Biofuel Challenges section.)

Meanwhile, Ford is working to support and promote the next generation of biofuels, including cellulosic biofuels. These are primarily fuels made from plant cellulose – stalks, leaves and woody matter – instead of from sugars, starches or oil seeds. Cellulosic biofuels will have many advantages. They should minimize possible market competition between food and fuel. They would allow for the more complete use of crops such as corn and soybeans by using additional parts of these crops, including stems and leaves, for fuel production. In addition, cellulosic biofuels can be made from "energy crops," such as switchgrass and wood, that require less fertilizer and less energy-intensive farming methods. This would further reduce the total CO_2 footprint of the resulting biofuels. We are also investigating the potential for algae-based biofuels to provide another feedstock for future biofuels. Given the challenges associated with developing and scaling up new production technologies, it is our assessment that next-generation biofuels will be available at scale in the marketplace in the next 10–15 years, if the necessary technical breakthroughs in production efficiencies are made and if the investment climate is sufficiently favorable to encourage large capital outlays required to build the biorefineries.

The United States Renewable Fuel Standard and the Future of Biofuels

The Energy Independence and Security Act of 2007 expanded the Renewable Fuel Standard (RFS) by requiring a significant increase in the use of biofuels – to a total of 36 billion gallons per year by 2022. This law also requires that, beginning in 2010, a certain portion of biofuels must be "advanced" and/or cellulosic-based fuels. Ethanol blended into gasoline is expected to supply the majority of this biofuel mandate and could displace nearly 20 percent of U.S. gasoline demand by 2022.[4] The use of biodiesel in the U.S. is also likely to increase in the coming years. However, it will not likely increase to the same levels as ethanol, because the RFS mandates lower volumes of biomass-based diesel and because a relatively small percentage of light-duty passenger vehicles in the U.S. use diesel.

Full deployment of E10 for gasoline-powered vehicles would achieve approximately 40 percent of the RFS-mandated biofuel use by 2022. Therefore, meeting the full RFS biofuel requirement will require much greater use of E85 in FFVs and/or the development of vehicles that can use "mid-level blends" of ethanol and gasoline (i.e., between E10 and E85). The expanded use of E85 in FFVs would require a corresponding increase in the E85 fueling infrastructure in the next 10 to 20 years. An approach using mid-level blends would require that all new vehicles be designed for higher ethanol capability, and the existing fueling infrastructure would need to be made compatible with fuel containing higher concentrations of ethanol. While the introduction of and expanded use of E15 might help achieve the RFS goals if carried out properly, the problems associated with the approach taken by the EPA to date (as discussed above) outweigh the benefits. For any of these approaches to be successful, the new ethanol-blend fuels will have to provide enough value to the consumer to attract them to buy these fuels. Regardless of the specific strategy used, coordinated efforts will be required between automakers, fuel suppliers, consumers and the government to meet the RFS mandate while ensuring the compatibility of vehicles and ethanol-blended fuel. Without alignment between vehicles, fuels and infrastructure, a mismatch will occur, and it will be difficult to meet the RFS mandate successfully.

Biofuel Infrastructure

More widespread use of biofuels would increase their benefits for reducing GHG emissions and improving energy security. This requires the availability of both biofuels and vehicles capable of using biofuels. In the U.S., the E85 refueling infrastructure remains inadequate. Out of more than 160,000 refueling stations in the U.S., approximately 2,600 (or less than 2 percent) offer E85. This trails the availability of E85 vehicles in the marketplace. Approximately 5.5 percent of the U.S. light-duty vehicle fleet is FFVs, a figure that is increasing because FFVs now account for nearly 20 percent of all new light-duty vehicles being produced. For consumers to have a true transportation

fuel choice, increased access to biofuels is necessary.

Biofuel Challenges

Much of the interest in biofuels results from their potential to lessen the environmental impacts of transportation fuels while contributing to energy independence. Biofuels are typically made from domestic and renewable resources, they provide an economic boost to rural communities, and they help to reduce greenhouse gas emissions because the plants from which they are made absorb atmospheric CO_2 while they are growing. But are biofuels the best solution to our growing fuel-related environmental, economic and political problems? The issues are complex. We believe biofuels are an important part of the equation for addressing climate change and energy security. We recognize, however, that major advances need to be made in production processes, source materials and fuel types to achieve their full theoretical potential.

Challenges relating to today's biofuels include the following:

- Energy Density: The energy density of ethanol is approximately two-thirds that of gasoline.[5] This means there is approximately one-third less available energy in a gallon of ethanol than in a gallon of gasoline. As a result, drivers using fuels containing higher amounts of ethanol will have to refuel more frequently. Ethanol does have improved qualities, such as higher octane, that can be leveraged to offset some of the lower energy content relative to gasoline. In 2012, Ford researchers published an assessment that quantified the potential benefits of high-octane ethanol gasoline blends in the U.S.[6] Biodiesel has approximately the same energy density as conventional petroleum-based diesel.

- Lifecycle Greenhouse Gas Emissions: The CO_2 that is released when biofuels are burned is from carbon that was captured from the atmosphere by the plants used to produce biofuel feedstocks. However, current farming and production processes utilize fossil fuels in the production of ethanol and biodiesel, so the production of these biofuels results in a release of some fossil-fuel-based GHG emissions on a complete lifecycle basis. In addition, emissions of nitrous oxide (N_2O), another GHG resulting from biofuel feedstock production, need to be carefully considered for all types of biofuel feedstocks and farming techniques on a full lifecycle basis, including the appropriate allocation of emissions to co-products (such as animal feed) derived from biofuel production. Government and academic studies suggest that using E85 with ethanol from corn results in approximately 20 to 30 percent fewer lifecycle GHG emissions than gasoline, on an energy-equivalent basis. GHG emissions related to petroleum can vary greatly depending on the source. Producing crude oil from tar sands, for example, results in a greater release of GHGs than producing crude oil from conventional sources. The use of renewable energy sources in the production of ethanol and biodiesel production can reduce their lifecycle GHG emissions further. We believe that developing cellulosic or biomass-based biofuels with next-generation processes will significantly decrease the GHG emissions associated with biofuels, perhaps by up to 90 percent.[7]

- Competition with the Food Supply: Another concern about current corn- and soybean-based biofuels is that they compete in the marketplace with food supplies and are often cited as one of the factors that increase food prices. In 1990, the production of ethanol in the U.S. consumed approximately 3 percent of the corn harvest, but in 2012 that figure was 41 percent. Ethanol production removes only the starch from the corn kernel – the remaining portion (about one-third of the weight of the corn kernel) is a highly valued feed product (called distillers grains) and a good source of protein and energy for livestock and poultry. When taking into account the livestock feed yield of the distillers' grains, about 30 percent of the U.S. corn harvest was used for ethanol production. This mitigates the competition between ethanol production and food production. In addition, the growth of the energy crop market has encouraged improvements in farming productivity (e.g., bushels per acre) that may not have occurred otherwise, further reducing the impact of biofuels on corn availability. The increase in corn used for ethanol production in the U.S. over the past 10–15 years has been essentially matched by the increased harvest over the same period. The increased harvest has been driven mainly by improved yield per acre and, to a lesser extent, by increased acreage. If next-generation biofuels can efficiently utilize biomass such as plant stalks, woodchips or grasses and be grown on marginal land with little irrigation, then competition with food crops should be minimized.

- Land-Use Conversion for Biofuel Production: Recent studies have looked at the overall CO_2 and N_2O impacts of "direct" land-use changes associated with biofuels – i.e., converting natural ecosystems to farmland for the production of crops to make biofuels. Additional studies have considered an "indirect" land-use change scenario in which the use of farmland for biofuels in one region indirectly leads to the conversion of natural ecosystems to farmland in another region due to crop market feedbacks (either replacing the grain in the marketplace or due to increased prices). This is a complex and important issue. Converting natural lands to croplands can lead to the release of carbon stored in above- and below-ground biomass. Releasing this carbon in the form of CO_2 during land conversion to farming creates a carbon "debt," which may take a very long time to repay through the greenhouse gas benefits of the subsequent biofuel use. The use of degraded pastures or abandoned farmland, by contrast, rather than natural ecosystems, would incur minimal carbon debt, because there is

limited CO_2 storage in these previously altered ecosystems.

At Ford, we are following the debates about biofuels closely. As we proceed, we need to consider how biofuels are derived and carefully review issues such as the potential net greenhouse gas benefits; political, economic, social and environmental concerns related to biofuel and petroleum use; and the management of land, food and water resources. We agree with the general consensus among scholars and industry experts that the current generation of biofuels has modest environmental benefits and is a first step toward cleaner transportation and energy independence. We are actively investigating the potential of next-generation biofuels that have greater environmental, energy security and economic benefits. We believe that improvements in the efficiency of farming technologies and biomass production processes, and the development of advanced biofuels, will significantly increase the benefits and long-term sustainability of biofuels. Even with these improvements, solving our climate change and energy security problems will require a multifaceted set of solutions, including new fuels, improvements in vehicle efficiency and changes in consumer driving patterns and practices.

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CNG/LPG Vehicles

IN THIS SECTION


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PHEVs


Renewable Biofueled Vehicles


CNG/LPG Vehicles


FCVs

CNG/LPG Vehicles

Ford Super Duty Pickup

Vehicles that run on compressed natural gas (CNG) and liquefied petroleum gas (LPG – also called propane autogas) typically have lower emissions and lower fuel costs than gasoline and diesel vehicles. Ford offers engine packages specially prepared for conversion to run on CNG and LPG on many of our vehicles targeted to the commercial fleet market.

Technology Overview

Ford offers engine packages specially prepared for conversion to run on compressed natural gas (CNG) and liquefied petroleum gas (LPG – also called propane autogas), on many of our vehicles targeted to the commercial fleet market. CNG and LPG can help commercial vehicle fleets reduce their environmental footprint because they provide similar performance with significantly lower emissions. They can also help fleets reduce fuel costs, as they typically cost less on a gallon-equivalent basis than gasoline or diesel. Commercial fleets can also take advantage of centralized refueling and/or defined routes, which help address fueling infrastructure issues. Our gaseous-fuel-prepped engines include hardened components such as valves and valve seats that can withstand the higher operating temperatures and lower lubricity of gaseous fuels.

Our vehicles with gaseous-prepped engines can be converted to either dedicated alternative fuel systems, which can only run on either CNG or LPG, or to bi-fuel systems, which can run on the alternative fuel or on regular gasoline. Bi-fuel vehicles generally have longer range because they can continue to operate seamlessly on gasoline when the alternative fuel is not available.

Benefits

CNG and LPG vehicles have both environmental and economic advantages. Vehicles running these types of fuel have lower carbon dioxide (CO_2) emissions and lower total greenhouse gas (GHG) emissions than gasoline or diesel vehicles. When running on CNG, vehicles typically emit about 25 percent less CO_2 and about 10 percent fewer total GHGs on a well-to-wheels basis, according to Argonne National Laboratory's GREET model. LPG-fueled F-series trucks typically emit 17–24 percent fewer total lifecycle GHG emissions, according to a study commissioned by the Propane Education and Research Council. CNG and LPG also reduce non-CO_2 tailpipe emissions such as NOx, SOx, particulate matter and carbon monoxide.

CNG and LPG also have significantly lower fuel costs. CNG costs range from $1.08 to $2.40 per gallon on a gasoline gallon equivalent basis, resulting in up to a 73 percent reduction in fuel cost compared to using diesel or gasoline. Businesses using CNG-fueled trucks often see payback on the conversion cost in as little as 24 to 36 months of use. LPG costs approximately $2.00 per

gallon, on a gasoline gallon equivalent basis, resulting in an up to 50 percent fuel savings per gallon compared to gasoline and diesel.

While CNG provides better GHG and fuel costs reductions, LPG can have other benefits. For example, LPG refueling systems typically cost significantly less to install. LPG fuel tanks are also smaller than CNG, resulting in less loss of cargo and/or passenger capacity.

Deployment

Interest in CNG and LPG vehicles is growing globally. In the U.S., for example, sales of Ford's commercial vehicles with CNG/LPG prepped engine packages increased by more than 350 percent from 2009 to early 2013. In the U.S., we provide gaseous prepped engine packages as a factory installed option on select commercial vehicles. We work with qualified vehicle modifiers (QVM) to convert vehicles with gaseous prepped engines to CNG and LPG fuel systems. Ford has established a rigorous qualification program for QVMs that provides guidance, modification recommendations, and engine operating specifications required to ensure customer satisfaction and reliability in line with Ford Motor Company standards. We perform onsite assessments at each QVM location to ensure conformance to a high standard of manufacturing, assembly, workmanship and customer service. We currently work with six QVM suppliers for CNG conversions (Altech-Eco, BAF, IMPCO, Landi Renzo, Venchurs and Westport) and one QVM for LPG conversions (Roush Cleantech).

Ford's approach to CNG and LPG vehicle conversions using QVMs offers a range of benefits. For example, the competition among QVMs has resulted in improved quality and reduced prices for conversion systems, as well as spurring innovation and technology improvements. This approach has made it possible for Ford to offer a much wider range of commercial vehicles with CNG and LPG than other full-line manufacturers.

In the U.S., Ford vehicles currently available with CNG and LPG gaseous fuel prepped engine packages include:

- Transit Connect, 2.0L (CNG only)
- E-Series Cargo Vans, 5.4L/6.8L
- E-Series Wagons, 5.4L/6.8L
- E-Series Cutaway & Stripped Chassis, 5.4L/6.8L
- F-Series Super Duty® Pickup & F-350 Chassis Cab, 6.2L
- F-Series Super Duty Chassis Cabs, F-450/550/650, 6.8L
- F53 & F59 Stripped Chassis, 6.8L

For the U.S. market, Ford is also currently developing CNG/LPG-prepped engine packages for:

- The all-new Ford Transit range of full-size vans, wagons, cutaways and chassis cab models with a 3.7L engine
- The next-generation Transit Connect lineup with a new 2.5L engine
- The 2014 Lincoln MKT Town Car Limousine and Livery packages with 3.7L engines
- Future F-150 trucks

In Australia, Ford offers LPG versions of the Falcon Ute commercial vehicle using Ford's EcoLPi engine technology. In Europe, we offer CNG and LPG conversions of various models in markets where dedicated infrastructure exists, such as Italy, Germany and the Netherlands. In Germany, for example, we offer CNG bi-fuel versions of the Ford C-MAX and Focus. In India, we offer a bi-fuel CNG version of the Ford Ikon Flair.

Hydrogen Fuel Cell Vehicles (FCVs)

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Hydrogen Fuel Cell Vehicles (FCVs)

Ford Focus

Hydrogen fuel cell vehicles are electric vehicles powered by hydrogen fuel cells. The fuel cells are essentially batteries fueled by hydrogen. They emit just water vapor and heat, without other tailpipe pollutants. In January 2013 we announced a partnership with Daimler AG and Nissan Motor Co., Ltd. to develop fuel cell vehicle technology that could result in a production vehicle as early as 2017.

Technology Overview and Benefits

Hydrogen fuel cell vehicles are similar to battery electric vehicles (BEVs) in that they use a high-voltage electric motor to propel the vehicle. Unlike BEVs, however, FCVs are equipped with a hydrogen fuel tank and a fuel cell system that generates electric power to drive the electric motor. So FCVs use onboard hydrogen stored in the fuel tank and refueled in minutes, while BEVs are powered by electric energy stored in the high-voltage battery. As a result, FCVs provide the environmental benefits of a BEV but they have a longer driving range and significantly shorter refueling time.

In an FCV, an automotive fuel cell propulsion system runs the vehicle by converting hydrogen and oxygen into electrical current through an electro-chemical reaction in the fuel cell stack. It emits just water vapor and heat, without other tailpipe pollutants. Therefore, FCVs are considered to be zero-emission vehicles. FCVs can also be hybridized with a high-voltage battery, to improve vehicle performance and better optimize the cost and robustness of the fuel cell propulsion system. In fact, all of our efforts to improve high-voltage electronics, electric motors, regenerative braking and battery technology on BEVs, HEVs and PHEVs can be applicable to FCVs, if and when these vehicles become commercially viable.

We believe that hydrogen-powered fuel cell vehicles may be an important long-term solution for improving energy security and diversifying our energy sources, as well as for reducing greenhouse gas emissions, if hydrogen fuel emerges as a viable low-carbon energy carrier. Therefore, Ford has committed to significant hydrogen fuel cell research and development.

Deployment

Technology Demonstration

Ford has been working on fuel cell vehicle development and technology demonstration for more than a decade. From 2005 to 2009, we participated in a technology demonstration program partially funded by the U.S. Department of Energy (DOE), as well as in other government-supported

demonstration programs in Canada and Europe. A total of 30 Ford Focus FCVs were in operation in these programs. These vehicles were tested to demonstrate technical feasibility, performance durability and reliability. For example, they were subjected to driving tests at sub-zero temperatures and high altitudes to prove vehicle performance under a range of customer-encountered driving environments. By 2009, these vehicles had accumulated more than a million driving miles without significant technical problems, thereby demonstrating the reliability of fuel cell powertrain systems in real-world driving conditions. The data collected from this fleet have been critical to the further development of Ford's fuel cell technology. Based on the knowledge gained in this first generation of fuel cell technology, we have completed development and laboratory validation of additional generations of fuel cell technologies. These later-generation technologies improve the robustness and "freeze start" capability of the fuel cell propulsion system.

Challenges of Commercialization

Even with the advances we have made in hydrogen technology over the past 10 years, we still have challenges to overcome before hydrogen FCVs can compete in the market with current vehicle technology. The cost and durability of the fuel cell system are the most significant challenges. For example, extensive DOE analysis has not yet revealed an automotive fuel cell technology that meets the DOE's targets for real-world commercialization, or that maintains proper performance throughout the targeted lifetime while staying within the targeted cost. There are also still significant challenges related to the cost and availability of hydrogen fuel and onboard hydrogen storage technology. To overcome these challenges and make fuel cell vehicle technology commercially viable, we believe further scientific breakthroughs and continued engineering refinements are required.

Continuing Research and Development

Given these significant challenges to commercialization, Ford had reprioritized its internal resources to concentrate on core fuel cell research that will help increase the commercialization potential of FCVs, including materials development and basic scientific research to solve cost and durability challenges.

In January 2013, however, we announced a partnership with Daimler AG and Nissan Motor Co., Ltd., to accelerate the commercialization of fuel cell vehicle technology by jointly developing a common fuel cell system that will reduce technology costs by maximizing design commonality, leveraging volume and deriving efficiencies through economies of scale. This collaboration could to lead to the launch of the world's first affordable, mass-market fuel cell electric vehicles as early as 2017.

We are continuing our core fuel cell research as well. Our materials research is focused on the membrane electrode assembly (MEA) and bipolar plates, which make up key cost and/or durability elements of the fuel cell stack. For example, we are working to develop a new fuel cell catalyst that will significantly reduce the use of precious metals, such as platinum, and we are exploring alternatives to expensive components, such as developing low-cost corrosion-resistant bipolar plates. Simultaneously, we are working to increase the power density of the individual fuel cell stack. This could potentially reduce the use of the expensive materials and components in the stack. MEA research is also crucial to our ability to optimize fuel cell stack operating conditions and reduce system complexity. We are working on the fuel cell stack research and development with our alliance partners: Daimler AG and the Automotive Fuel Cell Cooperation (AFCC), a Vancouver-based company owned by Ford and Daimler AG. We are also working to optimize the overall propulsion-system architecture to take advantage of advances in fuel cell materials and lessons learned from our demonstration FCV fleet. By developing advanced computational modeling that will help us understand the mechanisms underlying ideal fuel cell functioning and anticipate failure modes under real-world usage, we are able to propose operating strategies and system architectures that minimize fuel cell propulsion system costs. These modeling tools support our fuel cell materials and system research.

Onboard hydrogen storage is another critical challenge to the commercial viability of hydrogen FCVs. Current demonstration vehicles use compressed gaseous hydrogen storage. However, the high-pressure tanks required for this storage use expensive materials for reinforcement such as carbon fiber. In addition, the current tanks are large and difficult to package in a vehicle without unacceptable losses in passenger or cargo space. Therefore, we are pursuing research on materials-based onboard hydrogen-storage technology, including complex hydride and novel hydrogen sorbent technologies, which may ultimately achieve higher energy density and lower cost.

Hydrogen Refueling Infrastructure

Producing and distributing hydrogen fuel is another important hurdle on the road to implementing hydrogen-powered FCVs and hydrogen-powered internal combustion engines (H_2ICEs). The GHG-reduction benefits of hydrogen fuel depend on what procedures and feedstocks are used to produce the hydrogen. Currently, the most state-of-the-art procedure is a distributed natural gas steam-reforming process. However, when FCVs are run on hydrogen reformed from natural gas using this process, they do not provide significant environmental benefits on a well-to-wheels basis (due to GHG emissions from the natural gas reformation process). It would be necessary to employ carbon-sequestration technologies in hydrogen production from fossil fuels or increase the use of

renewable energy sources to enable the hydrogen for hydrogen-fueled FCVs to provide significant environmental benefits.

Even if the challenges of producing hydrogen can be overcome, there is still no widespread hydrogen fueling system. Therefore, new infrastructure must be invested in, designed and executed throughout the country to make hydrogen-powered vehicles commercially attractive to Ford customers.

Working alone, Ford will not be able to overcome all of the challenges hydrogen vehicles face. That is why Ford is collaborating with a wide range of partners.

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Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance

Vehicle + Fuel + Driver = GHG Emissions

How is Ford doing in its quest to improve vehicle fuel efficiency and greenhouse gas (GHG) emissions? This section reviews our progress in reducing "use phase" vehicle emissions – those that come from the vehicles while they are being driven, rather than during their manufacture or disposal. Lifecycle analyses have found that 80 to 90 percent of vehicle-related GHGs are emitted during the use phase. Emissions from our operations, logistics (i.e., the transportation of parts for our vehicles and of finished vehicles to dealerships), and from our supply chain are also important elements of our greenhouse gas emission impacts and reduction strategy. These topics are covered in the Greening Our Operations section (regarding our facilities) and the Supply Chain section (regarding logistics and suppliers).

Emissions during a vehicle's use phase are obviously dependent on the vehicle's fuel economy, which in turn depends on many characteristics of the vehicle itself (such as its weight, powertrain and aerodynamics). The bulk of this section focuses on our progress in improving vehicle fuel efficiency. This progress is largely the result of implementing the technologies described in our Sustainable Technologies and Alternative Fuels Plan.

But use-phase vehicle emissions are also dependent on the "well-to-wheels" greenhouse gas profile of the fuels used in the vehicles and how the vehicles are used and maintained by their drivers. Therefore, we also report on fuels-related GHG emissions, including electrification and biofuels, and our efforts to help drivers improve the fuel efficiency of their driving behavior.

Our shorthand for these three factors influencing use-phase vehicle emissions is "Vehicle + Fuel + Driver = GHG emissions."

Vehicle

Vehicle + Fuel + Driver = GHG Emissions

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Improving Vehicle Fuel Efficiency

To meet our climate change goals, we are focused in the near term on implementing the most cost-effective fuel-efficiency technologies across a large volume of our vehicles, as well as on introducing new products that offer improved fuel efficiency without compromising style or performance. We are concentrating on affordable and near-term sustainable technology solutions that can be used not for hundreds or thousands of cars, but for millions of cars, because that is how Ford can truly make a difference.

For example, we have introduced a wide variety of new engine and transmission technologies – as well as electrical system improvements, weight reductions and aerodynamic improvements – that deliver significant fuel-economy benefits for millions of drivers in the near term. By the end of 2012, we delivered 50 of the 62 planned new or significantly updated powertrains to help us improve fuel economy and reduce carbon dioxide emissions across our global fleet.

EcoBoost® engines, which use gasoline turbocharged direct-injection technology, are the centerpiece of our efforts to improve vehicle fuel efficiency. EcoBoost engines significantly improve fuel economy and reduce CO_2 emissions, and provide superior driving performance compared to larger-displacement engines. Because EcoBoost is affordable and can be applied to existing gasoline engines, we can implement it across our vehicle fleet, bringing fuel-efficiency benefits to a wide range of our customers. At year-end 2012, we had produced more than 520,000 EcoBoost engines. By the end of 2013, we will offer EcoBoost engines on 90 percent of our North American and European nameplates, and we continue to migrate them to our other regions. For more information on EcoBoost and our other near-, mid- and long-term fuel-economy improvement technologies, please see our Sustainable Technologies and Alternative Fuels Plan.

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Results

We continue to improve the fuel economy of our new and refreshed vehicles in each of our markets worldwide. Global platforms, such as those on which our Ford Fiesta and Focus are built, allow us to roll out our advanced technologies at a lower cost, achieving the large volumes that provide a real benefit. For example, we recently launched our new 1.5L EcoBoost engine, which will be built in Romania and first introduced in the Ford Mondeo sold in China. As discussed above, EcoBoost significantly improves fuel efficiency and reduces emissions; by the end of this year, 80 percent of the Company's global nameplates will be available with this fuel-saving technology. In 2013, the 3.2L Power Stroke® Diesel engine will be introduced in the U.S. in the fuel-efficient Transit full-size van. This engine, which will be manufactured in South Africa, adds to our lineup of advanced, clean

diesel technologies used in vehicles marketed around the globe.

We are offering our customers the “power of choice” when it comes to fuel-efficient vehicles and fuel-saving technologies – i.e., the ability to choose what best suits their needs from a wide range of advanced technologies implemented across our product lineup. In addition to EcoBoost engines, for example, we now offer a wide range of fuel-efficient technologies on our conventionally fueled vehicles, including advanced transmissions and Automatic Start-Stop. We also offer six new electrified products in North America, natural gas- and propane-ready engines, and vehicles that can operate on higher blends of biofuels. In Europe we also offer advanced common rail diesel engines across our European model range, as well as an ECOnetic Technology range of low-CO_2 vehicles. We have committed that every all-new or redesigned vehicle we introduce will be best in class for fuel economy or among the leaders in its segment. For more information on our overall approach to fuel-efficient and alternative powertrain technologies, please see our Sustainable Technologies and Alternative Fuels Plan.

For the 2012 model year, our U.S. fleet CO_2 emissions decreased by about 7 percent relative to the 2011 model year and improved 15 percent compared to the 2007 model year. Preliminary data for the 2013 model year project that the Corporate Average Fuel Economy (CAFE) values will improve for both our car and truck fleets, compared to the 2012 model year. In Europe, preliminary data show that we have reduced the average CO_2 emissions of our car fleet by 15.5 percent between the 2007 and 2012 calendar years.[1]

The following are some examples of our fuel-efficient vehicles by region.

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North America

In North America, we continued to introduce new vehicles that use the technologies identified in our Sustainable Technologies and Alternative Fuels Plan, and that offer outstanding fuel economy and reduced CO_2 emissions. Among those with class-leading fuel economy, for example, are the 2013 Ford Fusion, Escape, and Taurus with the 2.0L engine, as well as the Lincoln MKZ. With the introduction of these new vehicles, we now have the most fuel-efficient vehicle lineup in our Company’s history.

For the 2013 model year, we offer eight vehicles that get 40 mpg (or MPGe) or better:

- Ford Fiesta SFE
- Ford Focus SFE
- Ford Focus Electric
- Ford Fusion Hybrid
- Ford Fusion Energi
- Ford C-MAX Hybrid
- Ford C-MAX Energi
- Lincoln MKZ Hybrid

In addition to the above, we are offering eight 2013 model year nameplates with 12 powertrain variations that get 30 mpg or better:

- Ford Fiesta 1.6L
- Ford Focus 2.0L
- Ford Fusion 1.6L
- Ford Fusion 2.0L
- Ford Fusion 2.5L
- Ford Taurus 2.0L
- Ford Edge 2.0L
- Ford Escape 1.6L
- Ford Escape 2.0L
- Ford Escape 2.5L
- Ford Mustang 3.7L
- Lincoln MKZ 2.0L

We also continued to expand the use of our EcoBoost engines, which significantly improve the fuel economy of gasoline engines. We will equip as much as 90 percent of our North American and European nameplates with EcoBoost engines by the end of 2013.

As illustrated in the graphics below, we have made significant progress in improving the fuel

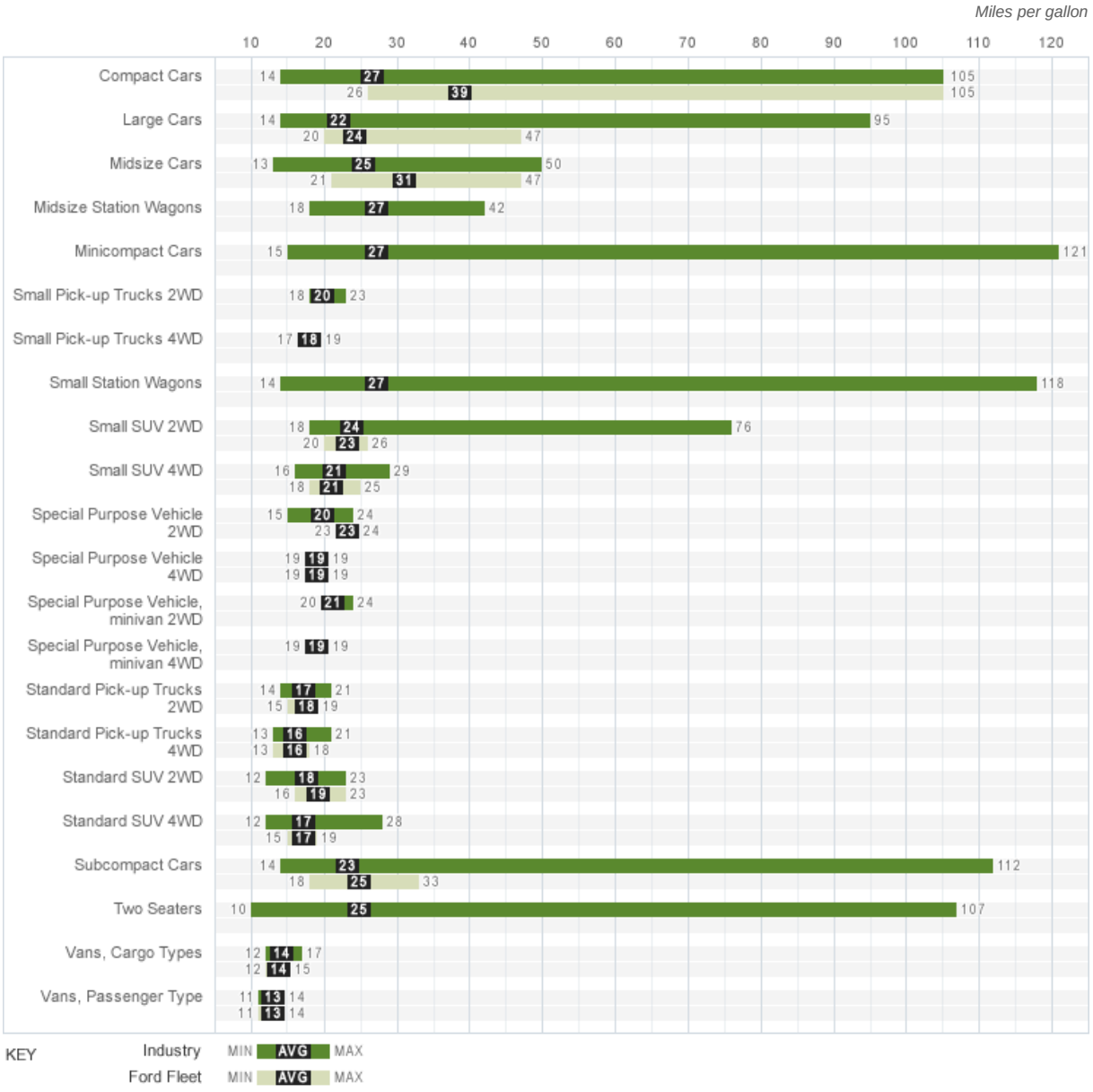
economy of, and hence reducing the CO_2 emissions from, our vehicles in North America. Figure 1 illustrates the improvement in fuel economy of key Ford vehicle models from 2003 to 2013. Figure 2 illustrates how the fuel economy of Ford vehicles compares to industry averages by vehicle segment for the 2013 model year. Ford's 2013 model year U.S. vehicles rank better than the industry fuel-economy average in seven of 14 categories, the same in six, and worse in one.

Figure 1: Nameplate fuel economy improvement summary

	2003 MY	2013 MY	% FE Improvement (Unadjusted Combined)
FOCUS			24.2[1]
ESCAPE			25.8
EXPLORER			30.9[2]
F-150			15.8[3]

1. Wagon excluded, BEV excluded.
2. Explorer Sport, Sport Trac and ethanol-fueled flexible-fueled vehicles (FFVs) excluded.
3. Ethanol-fueled FFVs, natural gas vehicles and SVT Raptor excluded.

Figure 2: Fuel economy of U.S. Ford vehicles by segment



	Industry			Ford		
	Minimum	Average	Maximum	Minimum	Average	Maximum
Compact Cars	14	27	105	26	39	105
Large Cars	14	22	95	20	24	47
Midsize Cars	13	25	50	21	31	47
Midsize Station Wagons	18	27	42			
Minicompact Cars	15	27	121			
Small Pick-up Trucks 2WD	18	20	23			
Small Pick-up Trucks 4WD	17	18	19			
Small Station Wagons	14	27	118			
Small SUV 2WD	18	24	76	20	23	26
Small SUV 4WD	16	21	29	18	21	25
Special Purpose Vehicle 2WD	15	20	24	23	23	24
Special Purpose Vehicle 4WD	19	19	19	19	19	19
Special Purpose Vehicle, minivan 2WD	20	21	24			
Special Purpose Vehicle, minivan 4WD	19	19	19			

Standard Pick-up Trucks 2WD	14	17	21	15	18	19
Standard Pick-up Trucks 4WD	13	16	21	13	16	18
Standard SUV 2WD	12	18	23	16	19	23
Standard SUV 4WD	12	17	28	15	17	19
Subcompact Cars	14	23	112	18	25	33
Two Seaters	10	25	107			
Vans, Cargo Types	12	14	17	12	14	15
Vans, Passenger Type	11	13	14	11	13	14
Total	10	23	121	11	23	105

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Europe

Ford already offers one of the broadest low-CO_2 vehicle portfolios in Europe. In 2008, we began launching our ECOnetic Technology line of vehicles. These ultra-low-CO_2 versions of select Ford diesel vehicles leverage several advanced, fuel-saving technologies. The ECOnetic name was chosen because it links ecologically sensitive technology to our “energy in motion” design philosophy, which combines driving quality and emotional styling. The expansion of ECOnetic Technology to a wider range of models is part of Ford’s overall sustainability strategy, including the target of reducing CO_2 emissions of our cars by 30 percent between 2006 and 2020. In addition to these low-CO_2 models, in 2012 we also introduced the new 1.0L EcoBoost engine. This downsized engine – as well as other fuel-saving technologies such as Automatic Start-Stop, Smart Regenerative Charging, Active Grille Shutter, and EcoMode – are available on the Ford Fiesta, C-MAX, Grand C-MAX, Focus, Mondeo, S-MAX and Galaxy. Ford is the only non-premium manufacturer currently offering Active Grille Shutter.

In 2012, we extended the availability of best-in-class, or among-best-in-class, extremely low-CO_2 vehicles, which now include the following:

- The new Fiesta, launched in November 2012, delivers best-in-class fuel economy with a 1.0L EcoBoost engine that achieves 4.3L/100 km and 99 kg/km CO_2.
- In total, we now offer seven versions of the new Fiesta with CO_2 emissions below 100 g/km.
- The Fiesta ECOnetic, Ford’s most fuel-efficient and lowest-CO_2-emission passenger car ever, offers fuel economy of 3.3L/100 km[2] (86 mpg UK[3]/71 mpg U.S.) and CO_2 emissions of 87 g/km. The new model showcases technology innovations such as Automatic Start-Stop, Smart Regenerative Charging, EcoMode and shift indicator light. It also benefits from a bespoke engine calibration and optimized gear ratios. A lower suspension, undershield and wheel deflectors, as well as low-rolling-resistance tires, are used to further reduce driving resistances.
- The new Focus ECOnetic delivers fuel economy of 3.4L/100 km[4] (83.1 mpg UK[5]/69 mpg U.S.) and CO_2 emissions of 88 g/km, making it the most fuel-efficient non-hybrid family car currently available in Europe. It is uniquely equipped with a lean NOx trap in combination with a coated diesel particulate filter.
- The Mondeo ECOnetic has a specially calibrated 115PS (85 kW) version of the 1.6L Duratorq TDCi engine equipped with a standard catalyzed diesel particulate filter. Due to a combination of changes compared to the standard Mondeo, the second-generation Mondeo ECOnetic is delivering a combined fuel consumption of just 4.3L/100 km[6] (65.6 mpg UK[7]), which translates into average CO_2 emissions of 114 g/km – an important tax break point in some European markets.
- The Focus 1.0L EcoBoost model delivers best-in-class fuel economy and the lowest CO_2 emissions compared to its rivals. The 1.0L EcoBoost 100PS version delivers 4.8L/100 km[8] (58.9 mpg UK[9]/49 mpg U.S.) and CO_2 emissions of 109 g/km. The 125PS model returns 5.0L/100 km[10] (56.5 mpg UK[11]/47 mpg U.S.) with CO_2 emissions of 114g/km.

In total, Ford offers 39 models and variants in Europe with CO_2 emissions below 130 g/km, of which nine models or variants have CO_2 emissions below 100 g/km.

After the successful introduction of the new EcoBoost gasoline engine family in the U.S., Ford launched 2.0L and 1.6L EcoBoost engines in Europe in 2010. These turbocharged, direct-injection gasoline engines will deliver up to 20 percent better fuel economy and fewer CO_2 emissions compared to conventional gasoline engines. In February 2012 the all-new 1.0L EcoBoost, first available in the Focus, joined the 1.6L EcoBoost gasoline and 1.6L TDCi ECOnetic in being leaders or among the very best in their segment in terms of fuel economy. The 1.0L EcoBoost is now available in the C-MAX, the all-new B-MAX and the new Fiesta. The engine uses turbocharging and direct fuel injection to extract impressive levels of power and fuel efficiency from

its three-cylinder engine block, which is so small it can fit on a sheet of A4 paper. This combination of power and low CO_2 emissions is unmatched by competitors in its segment. The engine's high torque of 170 Newton meters between 1,400 rpm and 4,500 rpm (or between 1,400 rpm and 4,000 rpm in the 100PS version) supports a fuel-efficient driving style and delivers a good performance feel and diesel-like torque experience. The 1.0L EcoBoost was named 2012 "International Engine of the Year" based on votes cast by 76 journalists from 35 countries around the world. This marks the first time Ford has won International Engine of the Year in the 13-year history of the awards. Moreover, the 1.0L EcoBoost received the highest score in the history of the awards. The engine also received "Best New Engine" and "Best Engine Under 1.0 Liter" awards from *Engine Technology* magazine.

Our global electric vehicle plan is extending to Europe with the Focus Electric, which will be launched in summer 2013, and other hybrid vehicles will be launched in coming years.

Ford of Europe's innovative Product Sustainability Index (PSI) shows how the vision of sustainability can be made operational. By combining comprehensive sustainability criteria into the earliest stages of the product development process, Ford's PSI provides a groundbreaking design-for sustainability tool. Designers can use it to assess the lifecycle CO_2 emissions of a vehicle, and consumers can use it to understand a vehicle's footprint.

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Asia Pacific and Africa

Ford will upgrade its entire powertrain portfolio in China with 20 advanced engines and transmissions to support its aggressive plan to introduce 15 new vehicles to China by mid-decade. These advanced, fuel-efficient technologies – including turbocharging, direct injection, twin independent variable camshaft timing (Ti-VCT) and six-speed transmissions – will deliver more than a 20 percent improvement in fuel economy to Ford's passenger vehicle fleet in China by 2015, which represents a key part of Ford's near-term sustainability goals in China. Ford's joint venture, Changan Ford Automobile Co., Ltd. (CAF), is building a new engine plant and a new transmission plant to speed up the localization of advanced powertrains to meet China's fast-growing demands. We are also continuing efforts to develop products that support the evolving "new energy vehicle" (defined as battery electric and plug-in hybrid electric vehicles) market in China.

We are introducing our fuel-efficient EcoBoost engines across Asia, and they are being well received by our customers. In China, 66 percent of Ford Mondeo vehicles sold in 2012 were equipped with the EcoBoost engine. In June 2012, Ford China launched the Edge with a 2.0L EcoBoost engine, and sales of the Edge with EcoBoost accounted for 99 percent of total Edge sales in China from June to December 2012. In March 2013, the award-winning 1.0L EcoBoost engine made its ASEAN[12] debut in the new Fiesta and EcoSport at the Bangkok International Motor Show. In early April, Ford announced that the first application of the 1.5L EcoBoost engine will be in the new Mondeo in China.

In India, we are also continuing to introduce vehicles with excellent fuel economy. The Fiesta – powered by 1.5L Ti-VCT gasoline and TDCi diesel powertrains developed for India – delivers class-leading fuel economy and reduced CO_2 emissions compared to the outgoing model. This builds on fuel economy leadership established with the Ford Figo, launched in March 2010, which has two engine options: a best-in-class, fuel-efficient 1.4L TDCi diesel and a very competitive 1.2L gasoline engine. These vehicles are highly significant to our success in India, as our studies show fuel economy to be the most important criteria in purchase consideration in that country. The EcoSport in India, which we plan to introduce mid-2013, will be powered by the 1.0L EcoBoost engine, making Ford the first manufacturer in the country to launch an SUV with a 1.0L gasoline engine.

In Australia, we launched an EcoBoost version of the Ford Mondeo in 2011 and an EcoBoost Ford Falcon in 2012. EcoBoost is also now available in the Focus ST and will be available in the all-new Kuga in mid-2013. Also in Australia, Ford's next-generation EcoLPi liquid-injection liquefied petroleum gas (LPG) system for the Falcon became available in 2011, providing customers with the most advanced LPG technology on the market. The Falcon EcoLPi fuel system improves fuel economy by 12 to 15 percent, while also improving power by approximately 27 percent over the prior LPG Falcon model.

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South America

In South America, we are improving fuel economy by introducing some of the efficient engine and transmission technologies currently used in North America, and by using technologies specifically relevant to the widespread use of biofuels in Brazil. In 2011, we introduced the Ford Mondeo with an EcoBoost engine in Argentina, which marked the debut of EcoBoost technology in South America. We are continuing to implement the new, more-efficient “Sigma” engine, which improves efficiency compared to current engines through reduced internal friction and improved electronic throttle controls. We have also improved the gearing ratios, aerodynamics and rolling resistance of our South American models, further increasing fuel economy. In 2012 in Brazil, we launched the new Ford EcoSport, a B-segment SUV, which is a fuel economy leader in its segment. In early 2013 in Brazil, we launched the new Ford Fiesta, which received an “A” rating for fuel efficiency in the new Brazilian fuel efficiency labeling system. Ford also received a “seal of excellence” award for the Ford Fusion Hybrid and 2014 model year Fiesta 1.6L TiVC in Brazil; these awards are given to vehicles in the top 20 percent for fuel economy, regardless of vehicle segment or type.

For the 2014 model year and beyond in South America, we are planning to introduce even more fuel-efficient twin independent variable cam timing engines and direct-injection engines, Battery Management Systems, smart alternator systems, dual-clutch automatic transmissions and improved aerodynamics in the B- and C-sized vehicle segments, which make up approximately 80 percent of the Brazilian market.

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1. The final 2012 calendar-year fleet-wide CO_2 emissions data for our European fleet will be available in November 2013. For all years, these data do not include Volvo.
2. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended.
3. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended. The European standard test drive cycle, NEDC, is used for type approval of fuel economy and CO_2 data. They differ from fuel economy calculations developed in the U.S. or other regions of the world. The fuel economy figures in mpg are based on the UK imperial gallon, which is 1.2 times the U.S. gallon.
4. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended.
5. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended. The European standard test drive cycle, NEDC, is used for type approval of fuel economy and CO_2 data. The fuel economy figures in mpg are based on the UK imperial gallon, which is 1.2 times the U.S. gallon.
6. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended.
7. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended. The European standard test drive cycle, NEDC, is used for type approval of fuel economy and CO_2 data. The fuel economy figures in mpg are based on the UK imperial gallon, which is 1.2 times the U.S. gallon.
8. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended.
9. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended. The European standard test drive cycle, NEDC, is used for type approval of fuel economy and CO_2 data. The fuel economy figures in mpg are based on the UK imperial gallon, which is 1.2 times the U.S. gallon.
10. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended. The European standard test drive cycle, NEDC, is used for type approval of fuel economy and CO_2 data.
11. The stated fuel consumption and CO_2 emissions are measured according to the technical requirements and specifications of the European Regulation (EC) 715/2007 as last amended. The European standard test drive cycle, NEDC, is used for type approval of fuel economy and CO_2 data. The fuel economy figures in mpg are based on the UK imperial gallon, which is 1.2 times the U.S. gallon.
12. Association of Southeast Asian Nations

Fuel

Vehicle + **Fuel** + Driver = GHG Emissions

To reduce lifecycle greenhouse gas (GHG) emissions to the levels required for carbon dioxide (CO_2) stabilization requires the development of fuels with lower fossil carbon content.[1] Such fuels could then augment improvements in the fuel economy of our vehicles. In this section, we briefly discuss electrification and biofuels, two alternatives that Ford is currently implementing commercially. For more information on how Ford is developing and implementing alternatively fueled vehicles and powertrains, please see Sustainable Technologies and Alternative Fuels Plan.

Electrification

Electrification addresses both energy security and climate change concerns, because electricity can be made from a wide variety of fuels, including domestic sources and renewable energy.

Ford foresees a future that includes a variety of electrified and traditional vehicles, something we call “power of choice.” We are electrifying existing, traditional vehicle lines rather than creating unique electrified vehicle models. That way, our customers can choose from a variety of vehicle powertrains, including efficient gasoline engines, hybrid electric vehicles, plug-in hybrids and full battery electric vehicles. Our comprehensive electrification strategy touches all aspects of the electrification ownership experience, seeking to make it engaging, empowering and easy to live with.

Please see Electrification: A Closer Look for more on Ford’s approach to electrified vehicles. For more information on the hybrid electric, plug-in hybrid and battery electric vehicles we have launched or plan to launch, please see the Sustainable Technologies and Alternative Fuels Plan.

Biofuels

Biofuel use is expanding globally, with bioethanol made from corn, beets or sugar cane substituting for gasoline, and biodiesel derived from plant oils substituting for diesel fuel. In the U.S. in 2007, federal legislation expanded the Renewable Fuel Standard (RFS), mandating a significant increase in the use of biofuels by 2022.

While current corn-based bioethanol production in the U.S. is estimated to provide a modest (approximately 20 percent) reduction in vehicle GHG emissions on a well-to-wheels basis, next-generation biofuels such as lignocellulosic bioethanol could offer up to a 90 percent GHG reduction benefit.[2] Building a substantial fleet of flexible-fuel vehicles (FFVs) provides a bridge to the widespread use of lower-carbon biofuels in the future.

Ford has a long history of developing vehicles that run on renewable biofuels. We produced the first flexible-fuel vehicle approximately 100 years ago: a Model T capable of running on gasoline or ethanol. We remain committed to biofuels as part of our sustainability strategy. In fact, the use of alternative fuels is a key piece of our blueprint for sustainability to reduce CO_2. Consistent with consumer demand, Ford will continue to provide a range of products designed to run on a wide range of ethanol blends. FFVs provide fuel choice to consumers when the fuel is available and are necessary to transition to advanced alternative fuels.

For more information on our implementation of biofueled vehicles, please see Renewable Biofueled Vehicles. To learn about Ford’s perspective on biofuel-related public policy issues, please see Climate Change Policy and Partnerships.

1. Of course, there is not only a need to reduce the fossil carbon content of the fuel itself, but to reduce any fossil-based CO_2 emitted during feedstock excavation, fuel production and distribution.
2. *Ethanol: The Complete Lifecycle Picture*, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy, March 2007.

Driver

Vehicle + Fuel + **Driver** = GHG Emissions

Paradoxically, the “driver” portion of the GHG emissions equation holds the potential for substantial emission reductions at minimal cost, but it is often overlooked. Ultimately, drivers decide which vehicles and fuels they will purchase and how those vehicles will be driven. While our major focus is on the vehicles we make, we have also reached out to drivers around the world to promote the practice of “eco-driving.” We do this by providing training, information and vehicle technology that helps drivers learn how to drive using the least fuel possible. We also recently announced a Personalized Fuel Efficiency App Challenge, which will allow software developers to help customers optimize their personal fuel economy performance on the road and share that information with others.

Helping Drivers Improve Fuel Efficiency with Information Technology

Ford’s in-vehicle technology system – MyFord Touch® – offers an array of real-time information on fuel-economy performance that can coach drivers to get more miles to the gallon and save on fuel costs. In addition, MyFord Touch’s map-based navigation system offers an Eco-Route option that quickly calculates the most fuel-efficient route a driver can take to get from A to B. Ford testing shows that Eco-Route can help achieve fuel economy gains of up to 15 percent. This technology will be available across our full range of vehicles, from affordable small cars to high-end luxury vehicles. It debuted on the 2011 Ford Edge and Lincoln MKX crossovers, followed by the 2011 Ford Explorer and 2012 Ford Focus in North America, and it is now available on 10 Ford vehicles for the 2013 model year: the Ford Escape, Explorer, Focus, Fusion, C-MAX, Taurus, Edge, Flex, F-150 and Super Duty®. By 2015, approximately 80 percent of Ford’s North American models will offer MyFord Touch, with similar percentages predicted for the world market. (SYNC® with MyFord Touch will be launched in Europe in 2012, initially on the Ford B-MAX.)

SmartGauge® with EcoGuide is a dashboard display in the Ford Fusion, C-MAX and Lincoln MKZ Hybrids, the Fusion and C-MAX Energi plug-in hybrids, and the Focus Electric that gives drivers information to help them maximize fuel efficiency. The system provides information on current fuel economy, fuel economy history, odometer reading, engine coolant temperature, fuel level, battery charge status, electric vehicle mode, tachometer, engine output power, battery output power, power to wheels, engine pull-up threshold and accessory power consumption. Drivers can use the system to track their long-term fuel economy progress and illustrate it either with a traditional chart or using an innovative display of “growing leaves and vines.” The more efficient a customer is, the more lush the leaves and vines, creating a visual reward for the driver’s efforts. In addition, the real-time system feedback allows drivers to assess and modify their driving habits to achieve maximum fuel economy.

In Europe, we offer the EcoMode system to help drivers maximize their fuel economy. EcoMode was first presented in the Ford Focus ECOnetic in Europe in 2009 and has since been made available in a wider range of vehicles. This system monitors the key parameters for optimal fuel consumption that drivers can affect by changing their driving behavior, including gear shifting, anticipation (i.e., driving as consistently and smoothly as possible) and motorway driving (i.e., driving with the most efficient speed on highways and country roads). In addition, the system considers the percentage of cold-engine short trips. Through this monitoring process, Ford EcoMode generates a driver profile with a scoring system for these driving parameters and offers information on how to improve fuel economy over time. This process can be translated into driver advice that can help make the best use of the vehicle’s technology. The system is now available in Europe on the new Fiesta, all-new B-MAX, Focus, C-MAX, new Kuga, Mondeo, S-MAX and

Galaxy.

Eco-Driving Information and Training

Ford has demonstrated that drivers who practice “eco-driving” can improve their fuel economy by an average of 24 percent. Eco-driving tips are available to the public on Ford’s website, and online training is available through the Ford Driving Skills for Life (DSFL) program. In addition, a web-based eco-driving program has been available to all U.S. salaried Ford employees since 2006.

Ford began work on the eco-driving concept in 2000, when we first offered an eco-driving program through our German dealerships, in partnership with the German Federation of Driving Instructor Associations and the German Road Safety Council. That program, which continues today, trains drivers in smarter and greener driving skills and vehicle maintenance habits. It uses specially trained and certified instructors to run programs for several target groups, including fleet drivers and customers. By the end of 2012, more than 17,000 German drivers had been “eco-trained” through this program under real-world conditions.

In 2012, Ford accelerated its support for a European project called ECOWILL. This project, which began in 2010 and is planned to last three years, is based on the premise that drivers’ “eco-behavior” has a great potential to reduce CO_2 from motoring without making it less “fun to drive.” ECOWILL has two major strategic goals:

- A mass roll-out of high-quality/standardized short duration eco-driving trainings. Ford operates one-hour courses with professional driving instructors as part of this goal.
- Promoting the education and testing of eco-driving for learner drivers in regular driving school under the leadership of EFA, the European driving school association.

In early 2012, we held media test drives in conjunction with the ECOWILL project, which convinced European journalists that the eco-driving approach works well on the road. Jointly with trainers from the European Driving School Association, journalists achieved a 22 percent improvement in fuel consumption by applying the eco-driving style. In spring 2012, we also supported the project’s roll-out phase. Free ECOWILL eco-driving trainings were run for 200 visitors at the Leipzig auto show (AMI Leipzig). At this, Germany’s largest auto show, Ford partnered with DVR (the German Road Safety Council) to implement the training.

In Asia Pacific and Africa, we launched the Ford DSFL driver training program in 2008. In this region the program places equal emphasis on safe driving and eco-driving, as customers are interested in both. In 2012, Ford DSFL in Asia trained licensed drivers in mainland China, India, Indonesia, Taiwan, Thailand, Vietnam, the Philippines and South Africa. Approximately 13,500 drivers were trained in 2012, and we expect to train another 14,000 in 2013. More than 63,000 people have been trained in the Asia Pacific and Africa region since the program began.

Non-CO_2 Tailpipe Emissions

Smog-forming vehicle emissions result from the incomplete combustion of fuels, impurities in fuels and the high-temperature oxidation of atmospheric nitrogen during the fuel-combustion process. Regulated smog-forming tailpipe emissions include hydrocarbons, nitrogen oxides (NOx), carbon monoxide and particulate matter. These emissions are regulated in the U.S. by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act as well as by the California Air Resources Board (CARB).

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U.S.

As of 2010, all of Ford's U.S. vehicles have been certified to the EPA's Tier 2 regulations, a comprehensive and challenging set of vehicle emissions requirements.

The Tier 2 program, which began with the 2004 model year, coordinates the introduction of cleaner fuels with more-stringent vehicle-tailpipe emissions standards to achieve near-zero non-carbon dioxide (CO_2) tailpipe emissions from cars and light trucks. These regulations significantly reduce targeted vehicle emissions, including nitrogen oxides and non-methane organic gases, to help reduce the formation of ozone and particulate matter. The Tier 2 regulations apply to all passenger cars, light trucks and medium-duty passenger vehicles. Ford completed implementing Tier 2 emissions requirements on all relevant vehicles in the 2009 model year.

The EPA estimates that this program has resulted in reductions in oxides of nitrogen emissions (from all relevant mobile sources) of at least 1.2 million tons as of 2010.

In 2013, the EPA proposed new Tier 3 standards, which are more-stringent motor-vehicle emissions standards for future model years. As part of these proposed new standards, the EPA suggested reductions in the sulfur levels in gasoline, which would improve the performance of existing catalyst technology in gasoline vehicles and result in reductions of nitrogen oxides, carbon monoxide, and volatile organic-compounds emissions from vehicles.

The EPA also has stringent emissions standards and requirements for EPA-defined "heavy-duty" vehicles and engines (generally, those vehicles with a gross vehicle weight rating of between 8,500 pounds and 14,000 pounds). These regulations are relevant to Ford's Super Duty® trucks and some commercial vans. In order to meet the standards for heavy-duty diesel trucks, Ford and most other manufacturers use selective catalytic reduction (SCR) systems, which require periodic customer maintenance. The EPA has issued guidance calling for increasingly stringent warning systems to alert motorists to the need for the maintenance of SCR systems.

For the California market, Ford is required to meet the state's stringent Low Emission Vehicle II (LEV II) emissions requirements for light-duty vehicles. Under the LEV II program, manufacturers are effectively required to produce a number of Partial Zero Emission Vehicles (PZEVs). A PZEV is a vehicle certified to near-zero emissions standards. Strictly speaking, PZEV vehicles are required to:

- meet California's Super Ultra-Low Emission Vehicle (SULEVII) exhaust emissions standard;
- produce zero fuel-system evaporative emissions; and
- be emissions compliant for a full useful life of 150,000 miles.

Related links

Vehicle Websites

- Focus Electric
- C-MAX Energi
- Fusion Energi
- Fusion Hybrid
- C-MAX Hybrid
- Lincoln MKZ Hybrid

External Websites

- EPA's Green Vehicle Guide

For the 2012 model year, Ford offered the Focus PZEV, as well as hybrid PZEV versions of the Ford Fusion, Lincoln MKZ and Ford Escape. For the 2013 model year, Ford is offering the Focus Electric PZEV, Focus PZEV and Fusion PZEV, as well as plug-in hybrid AT-PZEV versions of the Ford C-MAX and Ford Fusion.

In 2012, CARB finalized revisions to its LEV and ZEV regulations. The new LEV III program begins to take effect with the 2015 model year and includes more-stringent tailpipe and evaporative emissions standards for light- and medium-duty vehicles; extended durability requirements; and changes to the certification test procedures, which will require manufacturers to certify vehicles on fuel containing 10 percent ethanol. The amended ZEV regulations mandate substantial annual increases in the production and sale of battery-electric, fuel-cell and plug-in hybrid vehicles for the 2018–2025 model years. By the 2025 model year, approximately 15 percent of a manufacturer's total California sales volume will need to be made up of such vehicles. The LEV III regulations will also require automobile manufacturers to design and develop new emissions after-treatment systems. Compliance with the 2018–2025 ZEV mandate involves intensive planning efforts and large capital investments in order to deliver the required number of advanced-technology vehicles. We are concerned that the market and infrastructure in California may not support the large volumes of advanced-technology vehicles that manufacturers will be required to produce, particularly in the 2018–2025 model years. We also are concerned about potential enforcement of the ZEV mandate in other states that have adopted California's ZEV program, where the existence of a market for such vehicles is even less certain. We are working with both the EPA and CARB through their regulatory processes to help develop rules that are both effective and feasible. In setting tailpipe emission regulations, other rules that apply to vehicles – such as fuel economy/greenhouse gas standards and safety standards – must be taken into account to ensure that the total package of requirements is workable.

Ford continues to oppose technology mandates that seek to impose quotas or limits on the production or sale of vehicles with specified powertrain technologies. Regulatory efforts to dictate market outcomes, or to pick technology "winners" and "losers," have never produced successful outcomes. Manufacturers need the flexibility to build the kinds of vehicles that the marketplace demands based on consumer preferences and other external factors. Emissions standards should be performance-based and should be designed to enable manufacturers to introduce vehicles with an array of different technologies.

Information about the emissions performance of all Ford vehicles sold in the U.S. can be found at the EPA's Green Vehicles site.

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Europe

Since 1990, we have decreased the non-CO_2 tailpipe emissions from our vehicles sold in Europe by up to 90 percent through the development of a new generation of downsized, high-efficiency gasoline- and diesel-powered vehicles with improved engine technologies and high-tech exhaust gas treatment devices. As part of these emissions-reduction efforts, all of our diesel engines are now fitted with a maintenance-free diesel particulate filter system that requires no additives for filter regeneration.

Further air-quality improvements have been generated as we have introduced vehicles equipped with technology to meet the more-stringent Euro 5 emissions standards. We currently offer three variants of our GTDI EcoBoost® engine in Europe: the 1.6-liter, 2.0-liter, and 3-cylinder 1.0-liter EcoBoost engines. These are among the most technologically advanced engines in production, combining high-pressure direct injection, a low-inertia turbo and twin independent variable cam timing. They join our lineup of high-efficiency common rail diesel engines all complying with Euro 5 emissions levels. In 2012, Ford also launched a new version of the 1.6-liter Ford Duratorq® TDCi engine, featuring the first lean NOx-adsorbing technology in a Ford diesel, as well as a completely redesigned common rail injection system to deliver more precise control and increased combustion efficiency. All of our new passenger cars registered as of January 1, 2011, and all light-duty vehicles registered as of January 1, 2012, comply with the Euro 5 standard.

Euro 6 standards have been developed and will be applied beginning in September 2014. New test procedures on real-world driving are also under development by the European Commission and are intended to be finalized during 2013 for use during the implementation of the Euro 6 standard. These new emissions-testing requirements are focused primarily on delivering reduced tailpipe NOx emissions. The European Commission is also developing rules for increasing the severity of the low-temperature testing and evaporative emission requirements again. The new rules should be finalized during 2013. We are actively engaged with the European Commission and the European member states in developing better regulation.

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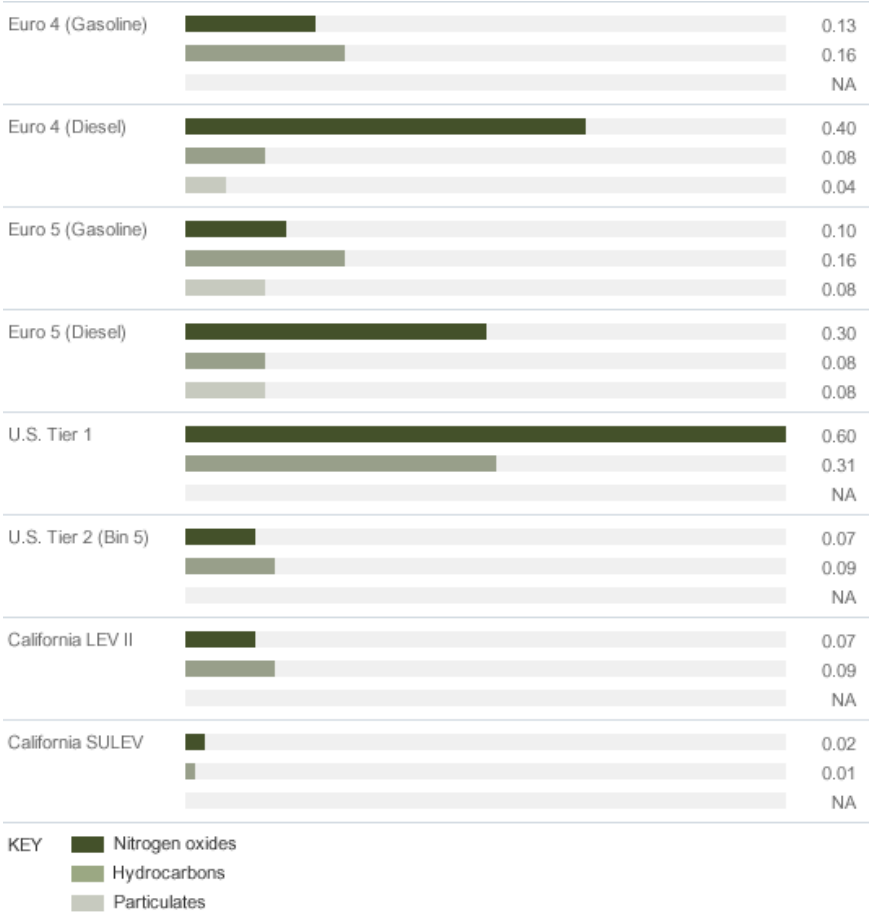
Emissions Regulations in the U.S. and Europe

Grams per mile



	Nitrogen oxides	Hydrocarbons	Particulates
Euro 4 (Gasoline)	0.13	0.16	NA
Euro 4 (Diesel)	0.40	0.08	0.04
Euro 5 (Gasoline)	0.10	0.16	0.08
Euro 5 (Diesel)	0.30	0.08	0.08
U.S. Tier 1	0.60	0.31	NA
U.S. Tier 2 (Bin 5)	0.07	0.09	NA
California LEV II	0.07	0.09	NA
California SULEV	0.02	0.01	NA

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Asia Pacific and Africa

Since 2010, our new gasoline-fueled passenger vehicles have been designed to comply with China Stage IV requirements (based on Euro 4 standards). China plans to implement the most recent European standards (Euro 5) starting in 2013 in large cities. Korea and Taiwan have adopted very stringent U.S.-based standards for gasoline vehicles and European-based standards for diesel vehicles. Japan, which has unique standards and test procedures, began implementing more stringent standards in 2009. Ford is working to comply with all of these standards using a variety of approaches, including on-board diagnostics and after-treatment technologies.

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South America

New passenger and commercial vehicles in South America must comply with varying levels of U.S.- or European-based emissions regulations. Recently, Brazil, Argentina and Chile have introduced more-stringent emissions standards. Brazil approved European Stage 5 (Euro 5) emissions and on-board diagnostic standards for heavy trucks starting in 2012; more-stringent light-vehicle limits also came into effect starting in 2012. Argentina also will apply Stage V standards beginning in 2014 (for new vehicle homologations) and 2016 (for new vehicle registrations). Chile approved a plan to introduce more-stringent emission standards (i.e., Euro 4 and 5 or corresponding U.S. emissions standards) nationwide for light- and medium-duty vehicles, and progressive alignment with the Metropolitan Region (i.e., the capital city Santiago and surrounding area) by September 2014. Heavy-duty vehicles will be required to meet Euro 5 (or corresponding U.S. emissions standards) by October 2014. As a consequence, the following non-CO_2 emissions-control technologies have been or will be introduced on our vehicles sold in South America: on-board diagnostic systems in Brazil and Argentina (which are being studied for use in Chile); particulate filter technology for some diesel products; and selective catalytic-reduction systems for heavy diesels in all three countries.

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Sustainable Materials

Materials are an important element of a vehicle's sustainability at all stages of its lifecycle. The selection of materials can influence the safety, fuel economy and performance of the vehicle, as well as the ability to recycle or reuse the vehicle's components at the end of its life. The selection of materials can also have implications throughout our value chain. A material can be more or less sustainable based on a number of factors, including its origin (virgin, renewable or recycled), the resources and manufacturing methods used to process it, the emissions produced throughout its lifecycle, and its application.

Ford has been working for many years to increase the use of recycled and renewable materials and to reduce the use of undesirable materials. Vehicles in North America typically are composed of 20 to 25 percent post-consumer recycled material by weight, primarily due to the extensive use of metals with recycled content (see What is in a Vehicle? for detail). Therefore, we have concentrated our efforts on developing new uses for recycled materials in the nonmetallic portions of our vehicles, which are typically composed of virgin materials. While the amount of recycled content in each vehicle varies, we are continually increasing the amount of recycled material used in each vehicle line and have implemented a number of innovative uses of sustainable materials (see Choosing More Sustainable Materials). As described in the section on Design for Lifecycle Sustainability, we use tools such as Design for Sustainability, lifecycle assessment and lifecycle costing to help us make beneficial materials choices.

For many years, Ford has had a Voluntary Recycled Content Usage Policy in North America, which sets goals for the use of nonmetallic recycled content in each vehicle and increases those targets year by year and model by model. Under this program, recycled materials are selected for all of our vehicles whenever technically and economically feasible. We are now developing sustainable materials requirements for new vehicle programs and significantly refreshed vehicle lines to increase the recycled and renewable content, and we are developing specific, numerical, model-over-model improvement targets.

We are also continuing to migrate successful applications of recycled and renewable content across more vehicles for increased environmental benefit. We are focusing on materials technologies that improve environmental and social performance and reduce costs and weight. To facilitate this, we are working with our commodity business planners, materials purchasers and materials engineers to develop a comprehensive list of cost-effective sustainable materials that can be implemented across multiple parts and vehicle lines. All recycled and renewable materials on this list are evaluated versus comparable virgin grades, to guarantee appropriate physical properties and the same level of component performance that would be obtained with virgin materials. By combining sustainable materials goals for updated or redesigned vehicles with sustainable materials identification and testing processes, we are standardizing and broadening the use of sustainable materials in our vehicles.

As we introduce sustainable materials, we are conscious that recycled materials are not always the preferable solution. For example, we take into consideration whether recycled materials may increase weight or have significant energy demand in collection or recycling. We also consider the availability of a local recycled-material feedstock versus the need for a global commonality of materials. Our global materials strategy has dramatically reduced the number of materials we specify and use, to maintain consistent quality and enable cost reductions. In some cases, the introduction of recycled and renewable materials will run counter to that commonization progress, since the feedstocks for these materials can vary by region. For example, it is often more efficient to use local waste materials that divert waste from local landfills, than to ship waste-material inputs across the globe. We are working to ensure that we use local materials as a feedstock for our recycled content materials.

Developing and Implementing Our Sustainable Materials Strategy

What is in a Vehicle?

Discover the kinds of materials that are in our vehicles.

Choosing More Sustainable Materials

Explore the sustainable materials we use in our vehicles.

Related links

This Report

- Design for Lifecycle Sustainability
- Materials Management

As our approach to sustainable materials continues to evolve, we are developing and implementing an integrated sustainable materials strategy. Progress on this effort includes the following:

- Building on our process for Restricted Substance Management: For many years, Ford has had a Restricted Substance Management Standard (RSMS), which was developed to reduce and eliminate the use of substances of concern in our vehicles and plants. The first of its kind in the industry, this standard was originally developed to address both regulated substances and materials Ford voluntarily chose to eliminate from our vehicles and plants. The RSMS system is embedded in Ford's Global Product Development System, our company-wide vehicle design and production system. We are using the same RSMS process to manage recycled and renewable materials targets and requirements in our product development system.
- Developing guiding principles for incorporating recycled and renewable materials in our vehicles: We have formed a cross-functional and globally integrated sustainable materials council to guide the sustainable materials strategy for the Company. This informal team has developed a set of guiding principles to help us think through choices of materials. These principles, listed below, reflect our collective thinking on the most effective ways to increase the use of recycled and renewable materials in our vehicles:
  - Recycled and renewable materials will be selected whenever technically and economically feasible.
  - Recycled and renewable content will be increased year over year and model by model. And, recycled materials will be consistent with EU 2003 End of Vehicle Life Regulations.
  - Product quality, durability, weight, performance (material specification and/or part design verification) and economics will not be adversely impacted by the use of recycled and renewable content materials.
  - Tools and enablers will be provided to select, specify, track and validate the use of recycled and renewable materials.
  - Recycled and renewable materials will be used where there is evidence of reduced or improved lifecycle impact.
  - Recycled materials will be used primarily in the market of origin, to minimize the carbon footprint.
  - Renewable content sourcing shall not compete with the food supply. Sustainable supply must be ensured (in terms of stable supply and sustainable growing).
- Integrating recycled and renewable materials into the official strategies that govern materials and commodities purchasing: We are developing global materials specifications, which will facilitate the incorporation of sustainable materials where they meet performance requirements. Such specifications will also ensure that the benefits of more sustainable materials will have a global impact. So, for example, recycled material specifications will be included in the same documents that specify virgin materials. This will simplify the monitoring of recycled content use in our vehicles and will ensure that component engineers and Tier 1 suppliers are confident in the performance of the recycled material, by means of a direct comparison with an equivalent virgin material.

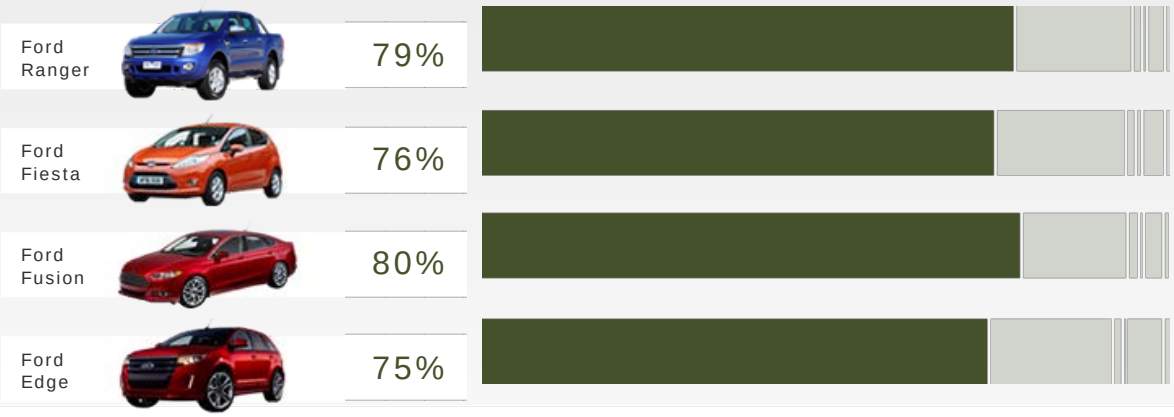
Many commodity-purchasing plans already list recycled-content materials as a preferred material option, including those for battery trays, battery shields and wheel arch liners. In addition, we developed a comprehensive resin strategy that requires the use of recycled plastics for underbody and aerodynamic shields, fender liners, splash shields, stone pecking cuffs and radiator air deflector shields manufactured in North America.

We have also developed a material specification that defines *post-consumer*, *post-industrial* and *depolymerized recycled content* and ensures that the use of in-house scrap is not counted toward recycling targets. We have a material specification for recycled content in a range of plastics and textiles and are working on specifications for renewable materials. These specifications make it easier for product engineers to choose sustainable material options.

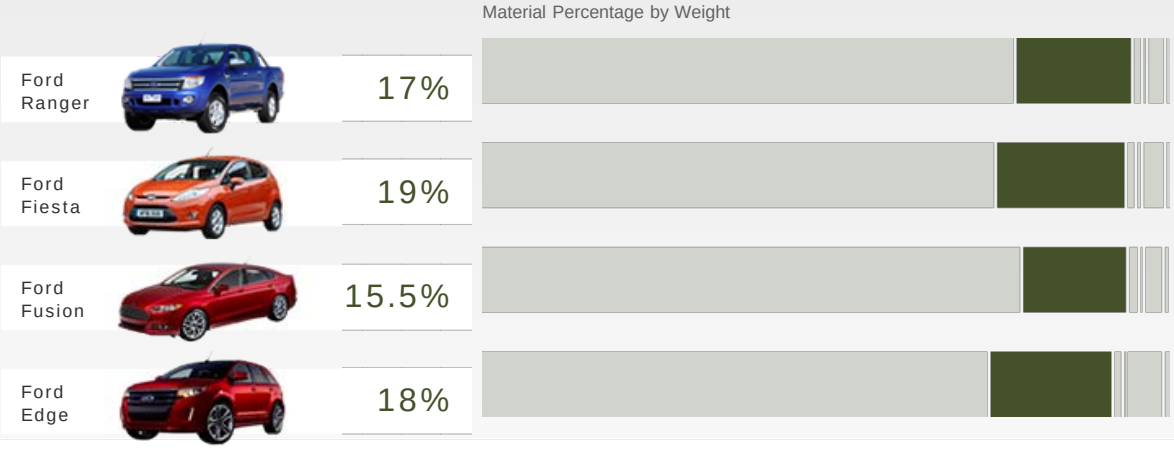
What is in a Vehicle?

To understand our approach to sustainable materials, it is useful to understand the kinds and amounts of materials that are in our vehicles. The following graphics show the amounts of materials in several samples of our vehicles – specifically, the percentage of total weight of major material categories for each. Then, for each material category, we provide some facts about our sustainable material strategy.

Metals



Plastics, Textiles, and Natural Materials



Non-Dimensional Materials

Material Percentage by Weight

Ford Ranger		1%
Ford Fiesta		1%
Ford Fusion		1.3%
Ford Edge		1%

Electronics

Material Percentage by Weight

Ford Ranger		0.2%
Ford Fiesta		0.5%
Ford Fusion		0.2%
Ford Edge		0.2%

Ceramics, Glass and Other Compounds

Material Percentage by Weight

Ford Ranger		2.3%
Ford Fiesta		3%
Ford Fusion		2.5%
Ford Edge		5%

Fuels and Consumable Liquids

Material Percentage by Weight

Ford Ranger		0.5%
Ford Fiesta		0.5%
Ford Fusion		0.5%
Ford Edge		0.8%

Metals

Most vehicles are made of at least 75 percent metals by weight. While the metals in today's vehicles are primarily steel and iron, we are working to increase the use of lightweight metals such as aluminum, magnesium and titanium. By replacing iron and steel with these metals, we can reduce the total weight of the vehicle and therefore help improve vehicle fuel economy. However, we have to balance the light weight of these materials with their relatively higher costs and energy intensity to manufacture. (For more information, see the Lightweight Materials section.) Because all metals are routinely recycled at the end of a vehicle's useful life, we focus most of our sustainable materials efforts on nonmetallic parts.

Plastics, Textiles and Natural Materials

These materials are the primary focus of our sustainable materials efforts. Though they make up a much smaller percentage by weight of the average vehicle than metals, they are the second-largest category in most vehicles. Increasing the amount of recycled content in these materials diverts waste from landfills. Increasing the amount of renewable content in these materials can reduce our dependence on finite resources and reduce lifecycle greenhouse gas emissions. We are using a wide range of recycled-content plastics and renewable, plant-based materials in our vehicles. (For more information, see Choosing More Sustainable Materials.)

Non-Dimensional Materials

These are materials such as paint, adhesives and sealants that have no shape or "dimension" before they are incorporated into a vehicle. Many non-dimensionals have been a traditional source of volatile organic compound (VOC) emissions during the vehicle manufacturing process. We are taking steps to replace VOC-emitting materials with alternatives or change our processing to reduce or recapture VOC emissions. (For more information, see Non -CO_2 Facilities-Related Emissions.)

Electronics, Ceramics, Glass and Other Compounds

Ford has been working with our suppliers, dealers, dismantlers and industry associations (such as the USCAR Vehicle Recycling Partnership) to develop, share and implement best practices to deal with these categories of materials, which are a small percentage of any given vehicle by weight but are hard to recycle at the end of the vehicle's life. Dealers and dismantlers are encouraged to reuse or recycle these materials whenever it is technically and economically feasible, to help divert them from landfills. Ford seeks to keep these materials to less than 5 percent of our vehicles, to maintain an overall vehicle recoverability rating of 95 percent.

Fuels and Consumable Liquids

These materials include the gasoline in the tank, engine oil, lubricants and other liquids. They are generally removed at dismantlers and recycled/reused where possible.

Choosing More Sustainable Materials

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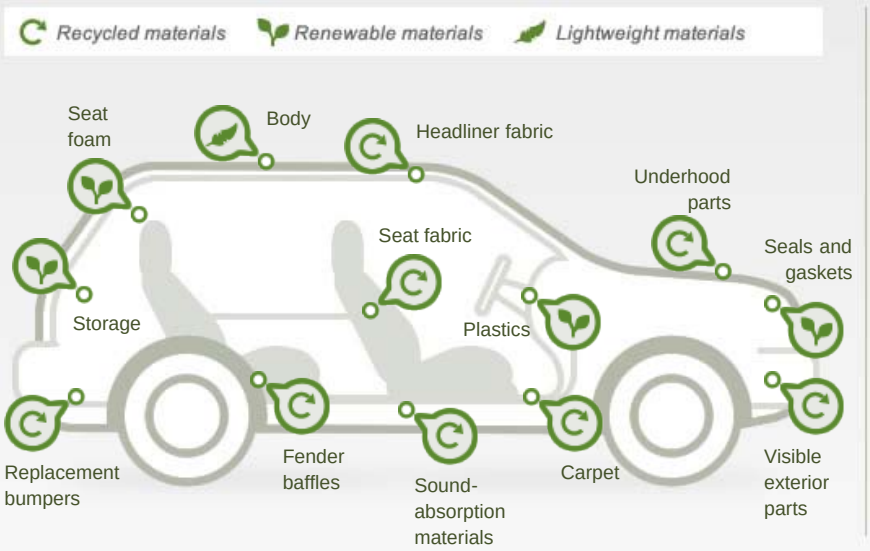

Click on the vehicle parts to the left to read more about sustainable materials we're using in our vehicles.

Carpet

Recycled-content carpets are used in many vehicles, including the U.S. and European Ford Focus, the 2012 North American Fiesta and the 2013 Escape and Explorer.

Replacement bumpers

Many European vehicles use recycled plastic replacement bumpers when original bumpers are damaged.

Seat fabric

Seat fabrics in versions of the Ford Fiesta, Taurus, Mustang, Focus, F-150, Super Duty®, Fusion, Flex, Escape and Explorer contain 25–100 percent recycled content.

Seat foam

Starting in 2011, all vehicles manufactured in North America use seat foam made with soy oil, which reduces carbon dioxide (CO_2) emissions and decreases dependency on petroleum oil.

Body

High-Strength Steels

Many vehicles – including the all-new Ford Fusion, the Explorer and the European Fiesta – use high-strength steels, which weigh less than traditional steels but have the same or better performance.

Aluminum and Magnesium

Many vehicles – including the Lincoln MKT and Ford Kuga – use aluminum and magnesium parts, which are lighter in weight than traditional steel.

Headliner fabric

In North America, the 2012 Ford Fiesta, 2013 Econoline and 2013 Super Duty use 50–75 percent recycled content in the headliner fabric.

Underhood parts

Recycled plastics and nylon are used in non-surface parts on many vehicles; these parts may include fan shrouds, battery trays, heater/air conditioning housing, wheel arch liners, engine fans and covers, and under-body systems.

Visible exterior parts

The 2011 Super Duty uses recycled-content plastics on a range of parts, including the bumper valences, license plate brackets and fog lamp bezels.

Sound-absorption materials

Recycled denim scrap from apparel production is used in sound-absorption materials on many vehicles, including the 2012 Ford Focus.

Fender baffles

This noise-dampening part on the 2011 Ford Explorer is made of recycled steel from F-150 door panels, thereby reducing manufacturing-related CO_2 emissions.

Storage

Injection-molded plastics reinforced with renewable wheat straw were implemented in the third-row storage bins on the 2010 Ford Flex. Wheat straw is a byproduct of growing wheat, and is commonly burned. Using this material as a reinforcement in plastics thus has environmental benefits.

Seals and gaskets

14 of our vehicle lines, including the Ford Escape, F-150, Focus, Mustang and Taurus use "green" seals and gaskets that incorporate both bio-renewable soybean oils and post-consumer, recycled tires.

Plastics

Multiple European vehicles use natural-fiber-reinforced compression-molded plastics. These vehicles include the Ford Mondeo, which uses plastics made with 50 percent kenaf and 50 percent polypropylene. In North America, a kenaf-reinforced armrest is used on the 2012 Ford Escape and a coconut-fiber trunk liner is used on the 2012 Focus Electric.

We are working to improve the sustainability of our vehicles by using materials that are more sustainable from a total lifecycle perspective. This includes increasing the use of recycled, renewable, recyclable and lightweight materials. Recycled materials incorporate post-consumer and/or post-industrial waste materials; renewable materials are made from plant-based materials; and lightweight materials use special materials and/or designs that provide the same or better performance as other alternatives with less weight.

Recycled Materials

Our efforts to increase recycled materials focus on nonmetallic parts, which historically have had little or no recycled content. We recently updated our global sustainable materials strategy, which stipulates that a wide range of parts on vehicles be made out of plastics from post-consumer recycled waste, such as detergent bottles, tires and automotive battery casings. The vehicle parts containing recycled content include underbody and aerodynamic shields, fender liners, splash shields, stone pecking cuffs, battery housing covers and base plates, wheel arch liners, heating and ventilation components, fan shrouds and powertrain undershields, and fabric rear-wheel liners. Our global sustainable materials strategy saves money and reduces landfill waste. We estimate that in North America alone, Ford saves approximately $10 million per year by using recycled materials.

Most of our recycled-content parts have more than 50 percent recycled materials. For example, many underbody and underhood plastic parts are made from 75 percent recycled batteries and 8 percent recycled HDPE bottles. Most of the underbody molded and/or masticated rubber parts we use in North America are made from blends of recycled polypropylene and car tires and contain 75 percent to 90 percent post-consumer recycled content. We use more than 50 million pounds of post-consumer recycled materials on the exterior of Ford vehicles made in North America, which

Related links

Vehicle Websites

- Ford Escape
- Ford Fusion
- Focus Electric
- Ford Explorer
- Ford Fiesta
- Ford Econoline
- Ford Taurus
- Ford Mustang
- Ford F-150
- Ford Super-Duty
- Ford Flex

translates to more than 17.8 pounds per vehicle on average across our North American fleet.

These parts not only increase our use of recycled materials, they can also have additional benefits. For example, fabric rear-wheel liners, which contain 30 percent to 40 percent recycled content, are 50 percent lighter than plastic wheel liners, and they absorb sound, which improves noise vibration and harshness performance while potentially reducing the need for sound-deadening insulators, sprays and foams. We continue to expand the use of recycled plastics into additional parts where they meet performance and cost requirements.

We are using post-consumer recycled nylon in many underhood parts, including air cleaner housings, engine fans, fan shrouds, HVAC temperature valves, engine covers, cam covers and carbon canisters. We are using nylon resin made from recycled carpets for cylinder head covers in the Ford Escape, Fusion, Mustang and F-150. So far, we have recycled nearly 4.1 million pounds of carpet into cylinder head covers, the equivalent of a carpet the size of more than 150 football fields. Use of this recycled material has prevented the use of more than 430,000 gallons of oil.

In Europe, we strive to use recycled polymers in all of our vehicles, when such materials provide a more sustainable solution. In addition to recycled content in our new vehicle parts, we are also recycling damaged parts collected by dealers. In the U.K., we are recycling bumpers that have been damaged in accidents or replaced in service. Ford dealers collect the bumpers, which are recycled into new bumpers and other plastic parts. Previously, dealers had to pay to dispose of these bumpers as waste. Currently, dealers store them in a container that is collected by Ford for free.

In the U.S., 2013 marks the 10-year anniversary of our Core Recovery Program, through which we have been reusing and recycling parts removed at dealership service centers for use in the production of new Ford vehicles. We have continually expanded the number of parts that we reuse or recycle through this program. The program works similarly to bottle recycling programs available in many U.S. states. Ford dealership service centers are charged a fee when they order a new part from Ford, but this fee is refunded if the dealer recycles the old part through the Core Recovery Program. When we collect a part from a dealership we determine whether it is fit for refurbishment and placement into a new Ford vehicle. Parts that can be remanufactured are cleaned, machined and tested to meet Ford quality standards before being used in new Ford vehicles. If a part cannot be remanufactured, we send it to a third party where it is broken down into small pellets that are eventually shipped back to Ford for use in the new-vehicle manufacturing process. During the last 10 years, the program has saved approximately 120 million pounds of vehicle waste from being buried in landfills or being sent to junkyards. In addition to reducing waste, this program has also saved Ford money.

Across our global operations, we are also using recycled materials for interior parts. This can be much more challenging than using recycled materials for underbody, subsurface and exterior black parts, because it is a challenge to achieve the necessary appearance and performance using recycled materials. We are continuing to expand our use of recycled seat fabrics and seat components that meet all appearance and performance requirements.

Since the 2009 model year, the seat fabrics in most of our new or redesigned North American vehicles are made from at least 25 percent post-industrial or post-consumer recycled content. Thirty-seven different fabrics meeting the requirements have been developed and incorporated into Ford vehicles. In addition, many of our non-woven headliner fabrics now contain 50 to 75 percent recycled yarns, depending on the color.

Ford is the first automaker to use REPREVE – a hybrid fiber made from recycled plastic water bottles and post-industrial waste – for seating fabric. This fiber was introduced on the 2012 Ford Focus and is used on the 2013 Ford Fusion. Each Focus uses seat fabric made from approximately 22 plastic, 16-ounce water bottles, while the Fusion S and SE models use approximately 39 plastic bottles per vehicle. Ford partnered with the yarn manufacturer Unifi to collect bottles at the North American International Auto Show in Detroit, the Consumer Electronics Show in Las Vegas and other events throughout 2012 for use in the Focus Electric seat fabric.

The following table highlights some of the recycled-content interior materials in our recent vehicles:

Vehicle	Material	Partner	Benefits
2013 Ford Escape (North America)	Carpet: 100 percent recycled content from post-consumer and post-industrial recycled yarns	Reiter	• Uses material from approximately 25 20-ounce plastic bottles for each Escape
	Seat fabric (XLS model): 27 percent post-industrial recycled yarns	JCI/Thierry	• Reduces waste, water and CO_2 emissions
2013 Ford Fusion S and SE Series	Seat fabric bolster: 100 percent recycled content from post-consumer and post-industrial recycled yarns	Sage Automotive Interiors, Unifi	• Reduces consumer and industrial waste • Reduces depletion of natural resources • Reduces energy consumption • Uses closed-loop system for recycling manufacturing

	Seat fabric insert: 37 percent recycled content from post-consumer and post-industrial recycled yarns		waste
2013 Ford Fusion Hybrid and Sport Series	Seat fabric: 100 percent recycled content from post-consumer and post-industrial recycled yarns	Sage Automotive Interiors, Unifi	• Reduces consumer and industrial waste • Reduces depletion of natural resources • Reduces energy consumption • Uses closed-loop system for recycling manufacturing waste
2012 Ford Focus Electric	Seat fabric: 100 percent recycled content from post-consumer and post-industrial recycled yarns	Unifi, Sage Automotive Interiors	• Uses material from approximately 22 recycled plastic bottles in each vehicle • Reduces consumer waste to landfill • Reduces depletion of natural resources
2011–12 Ford Fiesta (North America)	Seat fabric: 25 percent post-consumer recycled yarns	Aunde	• Reduces consumer waste • Reduces depletion of natural resources
	Non-woven headliner: 75 percent post-consumer recycled yarns	Freudenberg	• Reduces consumer waste • Reduces depletion of natural resources
	Carpet: 100 percent recycled content from post-consumer and post-industrial recycled yarns	Peltzer	• Reduces waste, energy consumption and depletion of natural resources
2011–13 Ford Explorer XL and XLT	Seat fabric insert: 25–30 percent post-industrial recycled yarns Seat fabric bolster: 30 percent post-industrial recycled yarns	Aunde, Guilford, IAC	• Reduces waste, water and energy consumption and depletion of natural resources
	Carpet backing (base series): carpet insulation 40 percent post-industrial recycled yarns Carpet backing (limited series): carpet insulation 25–28 percent post-industrial recycled yarns	IAC	• Reduces energy consumption by at least 20 percent • Reduces waste by at least 17 percent • Reduces CO_2 emissions by at least 14 percent • Reduces water use by at least 9 percent
2011–13 Ford Econoline	Headliner fabric: 50–75 percent post-consumer recycled content	Freudenberg	• Reduces consumer waste • Reduces depletion of natural resources
2011–13 Ford Super Duty	Headliner fabric: 50–75 percent post-consumer recycled content	Freudenberg	• Reduces consumer waste • Reduces depletion of natural resources
	Seat fabric insert: 25 percent post-industrial recycled yarns Seat fabric bolster: 30 percent post-industrial recycled yarns	Sage Automotive Interiors, Guilford, Aunde	• Reduces waste • Reduces depletion of natural resources
2010–13 Ford Taurus SHO	Seat fabric insert: 100 percent post-consumer recycled yarns	Miko Fabrics	• Reduces waste • Reduces energy required for yarn manufacturing by 64 percent and manufacturing-related CO_2 emissions by 60 percent • Uses only neutral, nontoxic dyes and no harmful solvents in the fabric manufacturing process
2010–13 Ford Taurus SEL	Seat fabric insert: 25 percent post-industrial recycled yarns Seat bolster fabric: 30 percent post-industrial recycled yarns	Aunde	• Reduces waste • Reduces depletion of natural resources
2010–2014 Mustang Base Series	Seat fabric insert: 18 percent post-industrial recycled yarns Seat bolster fabric: 30 percent post-industrial recycled yarns	Sage Automotive Interiors, Guilford	• Reduces waste • Reduces depletion of natural resources

2010–13 Ford F-150 XL, XLT & FX4	Seat fabrics: 25 percent post-industrial recycled yarns FX4 model seat fabrics are 18 percent post-industrial yarns	Sage Automotive Interiors, Guilford, Aunde	• Reduces waste • Reduces depletion of natural resources
2010 European Ford Focus RS (fabric option)	Seat fabric insert: 100 percent post-consumer recycled content	Miko Fabrics	• Reduces waste • Reduces energy required for yarn manufacturing by 64 percent and manufacturing-related CO_2 emissions by 60 percent • Uses only neutral, nontoxic dyes and no harmful solvents in the fabric manufacturing process
2013 Ford Flex SE and SEL Series	Seat fabric insert: 35 percent post-industrial recycled yarns	Sage Automotive Interiors, Aunde	• Reduces industrial waste • Reduces depletion of natural resources • Reduces energy consumption
2013 Ford Fusion S and SE Series	Seat fabric bolster: 100 percent post-consumer and post-industrial recycled yarns Seat fabric insert: 37 percent post-consumer and post-industrial recycled yarns	Sage Automotive Interiors, Unifi	• Reduces consumer and industrial waste • Reduces depletion of natural resources • Reduces energy consumption • Uses closed-loop system for recycling manufacturing waste
2013 Ford Fusion Hybrid and Sport Series	Seat fabric: 100 percent post-consumer and post-industrial recycled yarns	Sage Automotive Interiors, Unifi	• Reduces consumer and industrial waste • Reduces depletion of natural resources • Reduces energy consumption • Uses closed-loop system for recycling manufacturing waste

We have also expanded the use of recycled materials in several visible exterior applications. For example, the 2011 Ford Super Duty used material derived from recycled battery casings on several aesthetic parts, such as license plate brackets, the 4x2's bumper valence panel and the fog lamp bezels. These parts are "molded in color" and color-matched to provide visual harmony. The Super Duty also used post-industrial and post-consumer recycled plastic for its fascia lower valence.

Recycled materials do not mean low-quality materials. Our researchers work to ensure that post-industrial and post-consumer recycled plastic materials have the same level of quality and same material specifications as the virgin material parts. In some cases, we are working to recycle the materials from our auto parts right back into the same use. For example, we are developing methods for recycling and cleaning post-industrial recycled fascia and bumper scrap so that it can be molded into new fascias and bumpers. We are even working to "upcycle" certain materials – that is, recycle it into uses with higher material and performance requirements than the virgin material. For example, we are working on upcycling post-consumer laundry and milk bottles into blow-molded automotive components. In addition, we are developing a method to recycle polyurethane foam scrap to make new polyurethane foam components instead of landfilling it at the end of its life.

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Renewable Materials

Ford Motor Company has a long tradition of developing and using plant-based materials, which started with the Company's founder, Henry Ford. Mr. Ford passionately believed in a partnership between industry and agriculture, each using the products of the other. The first Ford vehicles used soybean oil in plastic body panels and paint, as well as wheat-straw-reinforced steering wheels. We are continuing this legacy today.

We are actively researching and developing renewable materials and applications that will reduce our dependence on petroleum and reduce our carbon footprint, while providing superior performance. Research scientists at Ford's Research and Innovation Center in the U.S., Ford's Research Center in Aachen, Germany, and Ford of Brazil are focused on developing automotive foams, plastics and composites that are derived from renewable resources. Ford is now a recognized leader in bringing high-performance, durable, plant-based materials to millions of vehicles every year.

Since 2002, our researchers have pioneered the research and development of soy-based polyurethane foams for automotive applications. The use of soy foam reduces CO emissions,

decreases dependency on petroleum oil and increases the utilization of renewable agricultural commodities. Soy foam also offers the potential for cost savings as well as insulation from petroleum product price swings.

In 2007, Ford was the world's first automaker to implement this innovative technology (on the seat cushions and seat backs of the 2008 Ford Mustang), and we have since migrated its use across all of our vehicle lines produced in North America. As of 2011, all Ford Motor Company vehicles built in North America have soy foam in their seat cushions and backs. In addition, 75 percent of headrests produced in North America have soy foam, and the headliner on the Ford Escape is made from sustainable bio-based foam.

Ford currently has soy foam seats in more than 8 million vehicles on the road, which reduces petroleum oil usage by more than 5 million pounds annually. Lifecycle analyses that compare soy foams with traditional petroleum-based foams show a net decrease of 5.5 pounds of CO_2 per pound of soy oil used. Ford's use of soy foam reduces our annual CO_2 emissions by 20 million pounds – the annual equivalent of emissions from more than 1,500 typical American households. We continue to investigate new applications for soy foam, such as for underhood and energy-absorbing foams.

Ford and our supplier partner Recycled Polymeric Materials (RPM) continue to expand the use of new "green" seals and gaskets that incorporate both bio-renewable soybean oils and post-consumer, recycled tires. This material is currently used in 14 of our vehicle lines, including the Ford Escape, F-150, Focus, Mustang and Taurus. The use of these greener gaskets and seals has diverted more than 2 million pounds of used tires from landfills and has used approximately 1.4 million pounds of soybean oil.

Ford has also pioneered the use of soy oil in rubber. By using renewable soy oil as a 25 percent replacement for petroleum oil, Ford researchers more than doubled the rubber's "stretchability" and at the same time reduced its environmental impact. Soy-based rubber parts – such as radiator deflector shields, air baffles, cup holder inserts and floor mats – are under consideration for future Ford vehicle programs.

We have continued to expand our use of sustainable elastomer applications. Scientists within Ford Research have developed a patented technology using soy-based rubber in plastic applications. And we are currently researching the potential of soybean oil in exterior rubber parts, with funding from the United Soybean Board. In 2002, Ford joined a university- and industry-based collaborative effort called the Program of Excellence in Natural Rubber Alternatives, to investigate and develop new technologies related to alternative sources for rubber and latex.

We have introduced plant-based castor oil foam in the instrument panel of the 2012 Ford Focus and 2013 Ford Escape. The castor oil foam, which includes more than 10 percent renewable content, provides a more sustainable interior foam solution than petroleum-based foam and does not compete with food sources. It also reduces scrap due to improved flow and processing characteristics, is more durable than the materials it replaces, and reduces production time by more than 40 percent.

We also use renewable materials to reinforce plastic and for other applications in vehicle materials. For example, the average Ford vehicle sold in Europe uses between 10 and 20 kilograms of renewable materials, depending on the vehicle size class. Almost 300 parts used across Ford's European vehicles are derived from sources such as cotton, wood, flax, hemp, jute and natural rubber. Also in Europe we use Lignotech, a compression-molded polypropylene and wood material in the door panels of the Ford Focus and Fiesta. And we use kenaf to reinforce compression-molded plastic in door parts. We have used this material in Europe for many years in door-panel inserts. For example, the Ford Mondeo uses a mixture of 50 percent kenaf plant fiber and 50 percent polypropylene in the compression-molded interior door panel.

We also use kenaf to reinforce plastic in North America – in particular in the door interior bolsters on the Ford Escape. Kenaf, which is a tropical plant that looks similar to bamboo and is related to cotton, replaces some of the oil-based resin in the plastic. The use of kenaf in this part offsets 300,000 pounds of oil-based resin per year in North America. In addition, the material reduces the weight of the door bolsters by 25 percent, which translates into better fuel efficiency. In North America we also use a coconut-fiber trunk liner in the 2012 Focus Electric.

In 2009, Ford introduced the world's first application of wheat-straw-reinforced plastic, which we developed in conjunction with the Canadian BioCar initiative, in the third-row storage bins of the Ford Flex. For this application, wheat straw is used to replace the glass fibers or minerals commonly used to reinforce plastic parts. The use of wheat straw is a highly efficient use of natural fiber, because it is a byproduct of growing wheat that is typically discarded or burned. The use of wheat-straw-reinforced plastics in the Flex reduces our petroleum usage by some 20,000 pounds and our CO_2 emissions by about 30,000 pounds annually. The material weighs up to 15 percent less than plastic reinforced with glass or talc. Additional applications of wheat-straw-reinforced plastics under consideration by the Ford team include console bins and trays, climate-control air ducts, door trim panel components and armrest liners.

The injection-molding technique that Ford first pioneered to include wheat straw in interior parts is now being adapted by Ford researchers for use with other natural fibers such as hemp and sisal. These new processes will allow us to make increasingly complex components including natural fibers and increase the number of natural-fiber-reinforced applications. The environmental benefits of natural-fiber-reinforced plastics can include reducing component weight (especially when replacing glass fibers) and allowing lower production temperatures (approximately 40 degrees lower than conventional plastic). Using the fibers can also have social benefits. Sisal, for example, which thrives on marginal land in hot and arid conditions, is of major economic importance to some developing countries and communities.

We are using engineered wood technology, which comes from a certified, sustainably managed forest and is a renewable resource, on several interior applications in North American vehicles. This wood, which is harvested under strict guidelines, is assembled into a composite and then stained to give it a warm, rich appearance. In addition, the use of engineered wood eliminates many of the extra processing steps necessary in producing solid wood automotive trim parts, and the processing required is more environmentally friendly. For example, water-based stain can be used instead of solvent-based, and a solvent wash to remove oils is not needed. Additional bleaching and sealing operations are eliminated, which greatly reduces the production of VOCs. Engineered wood technology uses input materials more efficiently, so less waste material is sent to landfills.

Engineered ebony wood was implemented on the 2008 Lincoln Truck, the 2008 and 2009 Navigator, the 2008 MKX and the 2009 MKS. The 2012 and 2013 Lincoln MKX, MKZ and Navigator use California plantation-grown swirl walnut veneer. This locally grown veneer is manufactured with a warm lacquer process that reduces the number of topcoats required and thereby lowers related VOC emissions from the production process.

For the past few years, Ford has been working with forest products leader Weyerhaeuser to develop a plastic composite material that uses cellulose fibers from trees in place of fiberglass or mineral reinforcements. The cellulose fibers in this new composite come from sustainably grown and harvested trees and related byproducts, such as wood chips, which reduces the material's environmental footprint. In addition, replacing fiberglass, minerals and/or petroleum with a natural, plant-based material can sequester CO_2 and ultimately lead to a smaller carbon footprint. So far, we have found that Weyerhaeuser's cellulose-based plastic composite materials meet our stringent requirements for stiffness, durability and temperature resistance. Furthermore, the components weigh about 10 percent less and can be produced 20 percent to 40 percent faster and with less energy when made with cellulose-based materials compared with fiberglass-based materials. These weight and process savings can enable equivalent or reduced component costs. Several prototype parts are currently being tested.

In 2012, Ford joined with The Coca-Cola Company, H.J. Heinz Company, NIKE, Inc., and Procter & Gamble to form the Plant PET Technology Collaborative (PTC), a strategic working group focused on accelerating the development and use of 100 percent plant-based PET materials. The partnership will build on the success of The Coca-Cola Company's PlantBottle™ packaging technology, which is partially made from plants and has demonstrated a lower environmental impact when compared to traditional PET plastic bottles. The overall goals of the partnership are to research and develop commercial solutions for PET plastic made entirely from plants and to drive the development of common methodologies and standards for the use of plant-based plastic, including lifecycle analyses and universal terminology.

In conjunction with Ohio State University, Ford Research has initiated a project to develop sustainable sources of materials to replace synthetic rubber. We are looking at two sources – dandelion root and guayule (a plant grown in the Southwest U.S.) – as possible replacements for natural and synthetic rubber in our plastic materials. Rubber-modified plastics are common, especially in interior applications where low temperature impact is important.

Finally, Ford researchers are continuing to work with polylactic acid (PLA) – a biodegradable plastic derived completely from the sugars in corn, sugar beets, sweet potatoes, sugar cane, Indian grass and other plants. When plastic parts made from PLA reach the end of their useful life, they can biodegrade in 90 to 120 days. In contrast, traditional petroleum-based plastics are projected to remain in landfills for hundreds of years. Several technical issues must be overcome before these compostable plastics and fabrics meet our stringent wear, performance and durability requirements, but they hold great promise for future vehicles.

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Lightweight Materials

We are actively pursuing the development and use of cutting-edge materials – including high-strength steels, lightweight metals such as aluminum and magnesium, and composite materials – to reduce the weight of our vehicles and improve their fuel economy without compromising safety

or performance. For more information on our use of lightweight materials, please see Weight Reductions in the Sustainable Technologies and Alternative Fuels plan section.

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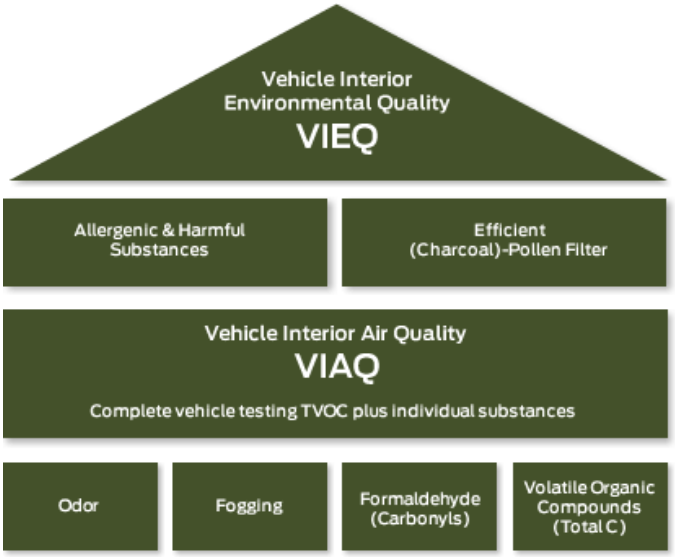
Improving Vehicle Interior Environmental Quality and Choosing Allergy-Tested Materials

As part of our effort to deliver vehicles that are safe, green, smart and high quality, Ford is proactively addressing society's growing concern about vehicle interior environmental quality, including air quality and allergens. Consistent with our ONE Ford global integration plan, a global cross-functional team at Ford focuses on selecting interior materials to reduce allergens and volatile organic compounds. This team is committed to investigating and developing comprehensive global approaches and strategies to address issues relating to vehicle interior air quality. The team has established global design guidelines for materials and filtration and is migrating those guidelines across Ford's product lines.

Specifically, this team has been working since 2007 to develop a set of Vehicle Interior Air Quality (VIAQ) specifications that require the consideration of the air quality and allergen impacts of the materials and components in our vehicles. Under this standard, engineers test materials used on components with direct skin contact for allergy issues. The complete VIAQ standards include requirements for fogging, odor, aldehydes, substances of concern, total carbon at the component level, and air filtration. Many vehicles are also equipped with high-performance pollen filters to prevent allergenic pollens from entering the vehicle. Initially, the requirements were applied to European-based vehicles, and we are now phasing them into the U.S. We plan to implement them in our South American and Asia Pacific and Africa operations in the future.

The following graphic shows our overall approach to improving vehicle interior environmental quality, including our allergen and VIAQ specifications.



Looking ahead, we are researching ways to use in-vehicle communication systems to help drivers monitor and maintain their own health and wellness. We want to change the paradigm that in-car connectivity systems such as SYNC® can only be used for information and entertainment purposes. We recently introduced an Allergy Alert® app for Ford SYNC AppLink™ that allows drivers to check current and upcoming pollen and other health risk conditions with simple voice commands while keeping their hands on the wheel and eyes on the road. This app came out of research Ford began in 2012 to assess in-car health and wellness-connected services that could work with SYNC, such as medical device connectivity, cloud-based health management services and mobile app integration. As part of this research, we are also working with Microsoft,

Healthrageous and BlueMetal Architects to develop additional systems that extend health management into the personal vehicle in a nonintrusive fashion.

We are also working on systems that can use Ford's hands-free SYNC communication technology to capture biometric and vehicle data as the basis for real-time health and wellness advice and monitoring. For example, a driver could provide voice inputs, detailing important aspects of his or her health routine – such as the number of glasses of water consumed during the day, or what pills have been taken. Working with partner companies, the data received from the driver could be uploaded into the driver's approved health data cloud and processed with other health data to create graphical reports the driver could access after having left the vehicle.

As part of our efforts to deliver healthy vehicle interiors, we are also researching microbial populations on vehicle interior surfaces with the goal of creating a cleaner, more aesthetically pleasing environment for our customers. Microscopic organisms, including mold and mildew, can spread over a variety of surfaces, leading to discoloration and even unpleasant odors. We worked with a team from the University of Michigan to evaluate the concentration and growth of microbes in vehicles. After identifying the hot-spot locations for microbial growth, we are now developing and testing part-coating formulations that could resist and potentially even reverse microbial growth, including silver-ion, ammonium salt and polyolefin wax with a nano-silver coating. Parts with the antimicrobial-treated coating are now undergoing real-world testing in a number of Ford development vehicles, and the coating is being evaluated for potential use in future Ford vehicle programs.

Eliminating Undesirable Materials

For more than 20 years, our Restricted Substance Management Standard has spelled out materials to be avoided or eliminated in Ford operations and in the parts and materials provided by suppliers. This and other materials-management tools are helping us to meet and exceed customer expectations and ensure compliance with regulations.

ON THIS PAGE

Eliminating Mercury

Ford has decreased the use of mercury-containing components, which can pose problems at the end of a vehicle's life. In 2001, we eliminated mercury-containing switches, which accounted for more than 99 percent of the mercury used in our U.S. vehicles. Since that time, we have continued to focus on mercury reduction, eliminating mercury in navigation system screens and family entertainment system screens and reducing the use of mercury in high-intensity discharge headlamps. All Ford and Lincoln vehicles in the U.S. are now mercury-free.

In addition, we helped to forge a collaboration between the U.S. Environmental Protection Agency (EPA), states, auto dismantlers, auto scrap recyclers, steelmakers and environmental groups to recycle mercury switches from end-of-life vehicles. This effort was rolled out across the U.S. in 2007 and now has more than 9,400 participants joining the effort from the recycling industry. By the end of 2012, more than 5.3 tons of mercury from these switches had been recovered. An online database tracks the number of participants in the program as well as the number of switches collected by state.

In Europe, an EU End-of-Life Vehicle directive and a Battery directive prohibit the use of the heavy metals lead, cadmium, hexavalent chromium and mercury, with limited exceptions. These regulations also include broad manufacturer responsibility for disposing of vehicle parts and substances, including taking vehicles back without charge for disposal and recycling requirements. This legislation has triggered similar regulatory actions around the globe, including, for example, in China and Korea and possibly in India in the near future. Ford is complying with all of these regulations.

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Eliminating Chromium and Lead

Hexavalent chromium – "hex chrome" for short – is a corrosion coating (used, for example, on nuts, bolts and brackets in cars and trucks) that the U.S. Occupational Safety and Health Administration lists as a potential lung carcinogen. We did not wait for global regulations banning the use of hex chrome to take effect: we phased out its use worldwide. By 2007, Ford eliminated all hex-chrome-containing parts in Europe and North America. Replacement coatings have been thoroughly tested to ensure that they meet Ford's performance requirements.

In North America, Ford has also completed the transition away from lead wheel weights. In addition, Ford's Customer Service Division no longer offers lead wheel weights for sale to dealers, offering steel wheel weights instead.

Related links

This Report
- Materials Management

External Websites
- REACH

Ford has joined the EPA and other stakeholders in a commitment to reduce the use of lead in wheel weights through participation in the National Lead-Free Wheel Weight Initiative. Through this initiative, Ford has shared its experience with lead wheel weight phase-out with aftermarket wheel balancers, and encourages all stakeholders to discontinue the use of lead in wheel weights.

In mid-2003, Ford of Europe phased out lead in valve seats in all new vehicle models approved for launch in the European Union. Also in Europe, we phased out the use of lead wheel weights and reduced the lead content in aluminum in new and serviced vehicles in mid-2005, and phased out lead in pyrotechnic initiators by mid-2006. We further reduced the lead content in aluminum in 2008. A study by the Oeko Institute in Germany calculated that, between 2000 and 2005, lifecycle emissions from lead had been reduced by 99.6 percent, from hexavalent chromium by 99.99 percent and from cadmium by 96 percent in Europe.

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Reducing Undesirable Chemicals

Ford is one of the first automotive companies to begin efforts to reduce a range of undesirable chemicals that are monitored by the EU, U.S. and Canadian governments. These chemicals include hexabromocyclododecane (HBCDD), a chemical that has been identified as a substance of concern under the European Union's REACH regulations (Registration, Evaluation, Authorization and restriction of CHemicals). Ford is also working to reduce decabromodiphenyl ether (Deca-BDE), another substance of concern that the EPA has proposed to regulate. Ford is working to eliminate these substances ahead of the timelines defined by governmental regulations by working with suppliers to develop new and "greener" alternative materials that will make our products more environmentally friendly.

More and more countries are adopting chemical and substance-of-concern regulations like REACH. Turkey and Romania adopted their own versions of REACH in 2009; China adopted its own version in October 2010. In 2011, Japan adopted REACH-like regulations to manage their chemicals. South Korea will adopt REACH regulations in 2013 and will begin implementation in 2015. In the U.S., the federal Senate and House both proposed bills in 2010 to overhaul the Toxic Substances Control Act. The state of California is finalizing a Safer Consumer Products law, which will take effect in 2013. And in January 2009, the United Nations implemented regulations requiring a globally harmonized system of classification and labeling of chemicals.

Regulatory requirements for the phase-out of undesirable chemicals need to be prioritized and implemented in a workable manner. Government and industry resource constraints mean that not all chemicals of concern can be addressed at once. Moreover, manufacturers and suppliers need adequate lead-time to identify replacement substances that are more environmentally friendly than the ones they replace, and also to design and engineer components that incorporate these new substances. Ford will continue to work with regulatory agencies to help develop rules that target the highest-priority chemicals first, and that drive steady progress toward the elimination of chemicals of concern in an effective and efficient manner.

For more on Ford's efforts to manage materials and chemicals please see the Materials Management section.

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End of Life

Automobiles are one of the most highly recycled consumer products in the world. All vehicles contain parts and materials – particularly iron, steel and aluminum – that can be recovered at the end of their useful lives. In North America, about 95 percent of vehicles that go out of registration are processed by a dismantler or scrap metal recycling facility, with approximately 86 percent of the vehicle by weight recovered for reuse, remanufacturing or recycling.

In theory, end-of-life vehicles are more than 95 percent recoverable. In practice, however, the cost in energy and labor to recover the final fractions often exceeds the value of the materials, and recent independently reviewed environmental studies suggest that such efforts offer no value to the environment. Ford focuses on achieving the highest economically viable and environmentally sound recovery percentage through a number of means, including selection of materials, labeling and providing information to dismantlers on materials and methods for treatment.

In the EU, automakers are required by EU Directive 2000/53/EC to ensure a cost-free take-back of vehicles (that they put on the market) at the end of their lives. This directive also requires that end-of-life vehicles (ELVs) are treated in an environmentally responsible manner. Since 2002, Ford has been at the forefront of providing return networks in the EU member states that have established regulations. Ford now has ELV take-back and recycling networks for Ford brand vehicles in 19 EU markets and participates in collective ELV recycling systems in another 10. Ford was the first major manufacturer in the U.K. to put in place a comprehensive plan that met the European Commission's ELV directive. By working with Cartakeback.com, Ltd., we have a network of nearly 230 facilities providing unrivaled convenience to the last owner for the professional take-back, receipt and treatment of end-of-life vehicles.

In May 2007, Ford became one of the first European automakers to be certified in compliance with ELV requirements by demonstrating to external authorities that the Ford processes properly manage the reusability, recyclability and recoverability aspects of vehicles. In 2012, this certification was extended by another two years and now comprises all of Ford Motor Company operations globally. All Ford vehicles marketed in Europe are now certified as reaching recyclability of 85 percent and recoverability of 95 percent. An increasing number of vehicle models produced and designed in the U.S. are also following this approach. For example, all U.S. models exported to South Korea are providing self-certification documents meeting the 85–95 percent recoverability requirement.

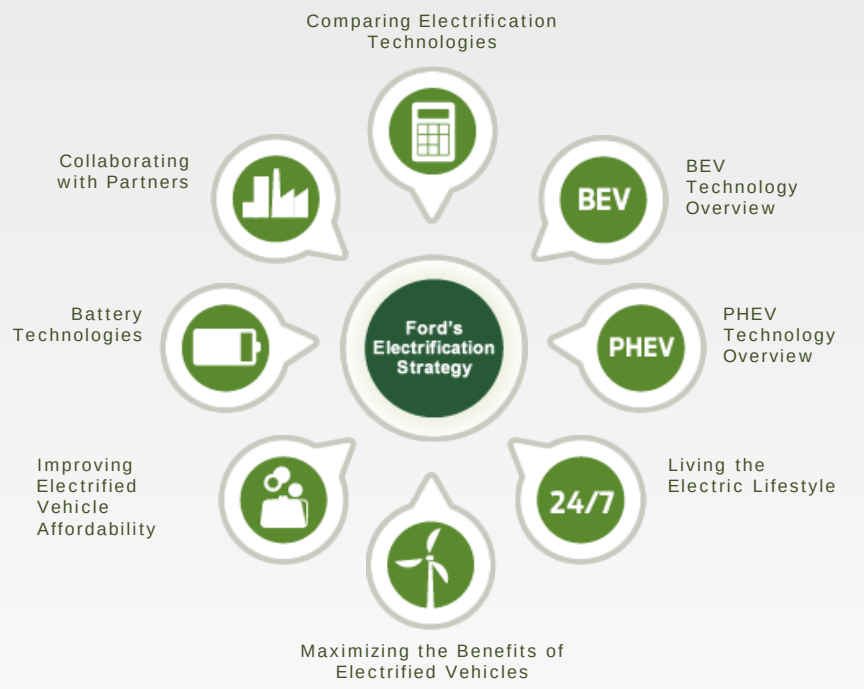
Ford has participated in research into alternative treatments for end-of-life vehicles. Most of the plastic, foam and other nonmetal vehicle materials end up being shredded. Most of this "auto shredder residue" (ASR) ends up going to landfill. We have been working to assess the environmental impacts of burning ASR for energy. Together with other European automotive manufacturers, we sponsored a fully ISO 14040-compliant lifecycle assessment that showed that – from a purely environmental point of view – using recycled ASR for energy recovery is as beneficial as recycling it.

Related links

External Websites

- European End of Life Vehicles

Electrification: A Closer Look



Consumer interest in and demand for electrified vehicles – which include hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs) and full battery electric vehicles (BEVs) – has been growing. And recently, the rate of growth has increased significantly.

From 2000 to 2011 (i.e., the first 11 years that HEVs were available from major automakers in the U.S.), sales of electrified vehicles grew to just 2 percent of the total U.S. passenger vehicle market. But from 2011 to early 2013, the market for electrified vehicles doubled; it now totals approximately 4 percent of U.S. passenger vehicle sales.

To meet this growing demand, most major automakers now offer some form of electrified vehicle. Ford offers six models, including three HEVs, two PHEVs and one BEV, as part of our "power of choice" strategy for delivering leading fuel economy for consumers regardless of what type of vehicle or powertrain technology they prefer. At the same time, utilities are working to understand how to provide power to plug-in vehicles in a way that is effective in meeting consumer needs, efficient for electricity providers and environmentally sound. And a variety of organizations are developing infrastructure for charging vehicles at homes, at work and in other public places.

Why the rise in interest and activity in electrified vehicles? As gas prices remain high, consumers are increasingly interested in alternative and less-expensive fueling options, such as electricity. In addition, the cost of electrified vehicles continues to come down, due in part to rapidly advancing electrified vehicle technology. Other benefits can include lower greenhouse gas (GHG) emissions during vehicle use, increased use of domestic energy sources, decreased pressure on petroleum stocks and reduced urban air pollution. With the advanced information technologies and "smart grids," electrified automobiles can even improve the efficiency of the power grid – thereby lowering electricity costs – and facilitate the use of renewable energy sources, such as wind and solar.

Still, many challenges remain. For example, even though the purchase prices of electrified vehicles (especially HEVs) are beginning to become more competitive, they remain relatively high. In addition, consumers continue to have concerns about the driving range of PHEVs. And for

Living the Electric Lifestyle

To help drivers make the transition to electric vehicles (EVs), and get the most out of their EVs, we are offering more than just the vehicle. We are delivering a total electric vehicle lifestyle.

Related links

This Report

- Sustainable Technologies and Alternative Fuels Plan

electrified vehicles to achieve their full potential to cut lifecycle automotive GHG emissions, low-carbon electric generation must make up a greater part of the total energy supply, and electric vehicles must become functioning parts of smart grids. Also, battery technologies are still evolving, and the cost of new-generation batteries remains high. We are also assessing supply-chain issues associated with the materials needed to manufacture batteries, including lithium and rare earth metals. Furthermore, customer demand for electric vehicles must continue to grow for these vehicles to have a significant effect on overall transportation-sector emissions without the use of subsidies and incentives.

We discuss all of these issues in more detail throughout this section, which provides an overview of Ford's electrification strategy. The section also compares different electrification technologies and their environmental benefits. For more detail on Ford's electric-vehicle technologies and other fuel-efficiency, advanced powertrain and alternative-fuel technologies, please see the Sustainable Technologies and Alternative Fuels Plan.

Ford's Electrification Strategy

Ford's electrification strategy foresees a future that includes different types of electrified vehicles, depending on customers' needs. There will not be a one-size-fits-all approach, but a diverse and smart range of applications of different types of electrified vehicle technologies. Our strategy includes the following elements.

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"Power of Choice": Bringing a Range of Electrified Vehicles to Market

Electrified vehicles are an important part of Ford's overall sustainability strategy and our commitment to reducing the carbon dioxide (CO_2) emissions of our fleet. We are pursuing an aggressive electrified-vehicle strategy that we call "power of choice." We believe that offering a range of electrified vehicles is the best way to reduce CO_2 emissions, deliver leading fuel economy across our lineup and meet different customers' transportation needs.

To do this, we are electrifying global vehicle lines rather than creating a single, special electrified vehicle model. This allows our customers to choose from a variety of electrified vehicle powertrains – including hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs) and full battery electric vehicles (BEVs) – in a range of vehicle segments, including sedans, utility vehicles and luxury vehicles.

Ford Fusion Hybrid, Lincoln MKZ Hybrid, and Ford C-MAX Hybrid

As of June 2013, we offered three HEVs: the Ford Fusion Hybrid, the Lincoln MKZ Hybrid and the new C-MAX Hybrid (based on the successful C-MAX in Europe), all of which deliver leading fuel economy. These HEVs are ideal for customers who cover a range of distances in varied driving conditions. The most significant benefits come under urban stop-and-go driving conditions, in which braking energy is stored and reused. But these HEVs should also appeal to drivers who do a mix of city and highway driving; the Fusion and C-MAX Hybrids available in the U.S. both have a U.S. Environmental Protection Agency (EPA) estimated rating of 47 mpg in the city, on the highway, and combined.[1] For more information about our hybrid vehicles and technology, please see the Hybrid Electric Vehicles section.

Ford's Michigan Assembly Plant is the first in the world to build vehicles with five different fuel-efficient powertrain technologies on the same production line.

Related links

Vehicle Websites

- Focus Electric
- C-MAX Energi
- Fusion Energi
- Fusion Hybrid
- C-MAX Hybrid
- Lincoln MKZ Hybrid

Ford Websites

- Electrified Vehicles
- Plug into Ford

In the spring of 2012, we launched the Focus Electric, a BEV version of the new Ford Focus, to retail customers in North America. The Focus Electric has an EPA-estimated fuel- efficiency rating of 110 miles per gallon equivalent (MPGe) city and 99 MPGe highway.[2] By using innovative technologies, the Focus Electric can be fully charged in 4 hours. The Focus Electric has an EPA-certified driving range of 76 miles on a single charge and can go up to 100 miles on a charge depending on driving habits. (The average driver in the U.S. drives 29 miles a day, according to the Bureau of Transportation Statistics.) For more information about our battery electric vehicles and technology, please see the Battery Electric Vehicles section.

Ford Focus Electric

Ford C-MAX Energi and Ford Fusion Energi

In North America, we also now sell two PHEVs: the C-MAX Energi, launched in 2012, and the Fusion Energi, a plug-in hybrid version of our all-new Fusion that launched in early 2013. The C-MAX Energi and Fusion Energi both have an EPA-estimated rating of 108 city/92 hwy/100 combined MPGe.[3] The C-MAX Energi has an EPA-estimated 620 mile range.[4] For more information about our PHEVs and technology, please see the Plug -In Hybrid Electric Vehicles section.

All of our electrified vehicles use next-generation lithium-ion batteries, as discussed in the Battery Technologies section.

We plan to expand our electrified vehicle lineup to Europe in late 2013, beginning with the Focus Electric. We will also launch hybrid vehicles in Europe in coming years.

Sales of our electrified vehicles are increasing, and Ford recently became the second-leading seller of electrified vehicles. As of April 2013, we held an 18 percent market share in the U.S. electrified vehicle market, up from approximately 3 percent in 2012. HEVs make up a significant portion of our total electrified-vehicle sales. In the five months from December 2012 to April 2013, we sold more HEVs than in any full year since we began selling hybrids in 2004. The C-MAX and Fusion Hybrids are proving particularly effective at bringing new people to Ford-brand vehicles. As of April 2013, 64 percent of C-MAX Hybrid customers and 68 percent of Fusion Hybrid customers were new to the brand.

To meet the ever-growing demand for electrified vehicles, we are tripling our electrified vehicle production capacity by the end of 2013. This increase is based on our expectation that gas prices will rise over time and continue to drive increased demand for more fuel-efficient vehicles, including HEVs, PHEVs and BEVs. We expect HEVs to make up about 70 percent of our share of electrified vehicle sales. In 2012, HEVs made up approximately 1.6 percent of Ford's total U.S. sales.

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Using Global Platforms

We are basing our electrified vehicle products on our highest-volume global platforms. This approach offers tremendous opportunities for production economies of scale. For example, the Focus Electric, C-MAX Energi and C-MAX Hybrid are based on Ford's next-generation compact, or "C-car" platform, and are being built alongside gas-powered Focus models at Ford's Michigan Assembly Plant. This plant is the first in the world to build vehicles with five different fuel-efficient powertrain technologies on the same line.

Globally, we expect to build as many as 2 million vehicles per year on the C-car platform. The new Fusion Hybrid and the Fusion Energi PHEV are based on our global mid-sized platform. This flexibility allows us to switch production between different vehicles as needed to meet changing consumer demand. We also share many of the electrified components between the different vehicles. These strategies are key to making electrified vehicles affordable.

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Delivering a Complete Electrified-Vehicle Lifestyle

Electrified vehicles have many advantages for consumers. But they also require drivers to make changes to their driving routines and may cause some new considerations to arise in regard to how a driver uses a car. For example, BEV drivers have to plan for their car to have enough charge to get to the next destination. BEV and PHEV drivers have to consider where they will charge their vehicles. Even HEV drivers can make changes to their driving routines to maximize the efficiency of their vehicles. To help drivers make the transition to electric vehicles (EVs) and get the most out of their EVs, we are offering more than just the vehicle. We are delivering a total electrified-vehicle lifestyle.

In the U.S., for example, our electrified vehicles have advanced in-vehicle communications and innovative applications for wireless devices that help drivers maximize the efficiency and range of their vehicles. Our tools for BEVs and PHEVs also help drivers to find charging stations along their planned routes, and to know how far they can go until the next charge based on their own driving style. For example, our innovative MyFord Mobile® app, developed using MapQuest® and Xatori technology, allows owners to control charging and other in-vehicle operations remotely. The app can “wake up” to pre-heat or pre-cool the cabin while the car is plugged in, to help reduce battery usage for these energy-intensive functions. Owners can use MapQuest to find their way to a new destination and Xatori’s PlugShare to find public recharging stations. We have also developed a comprehensive approach to vehicle charging that makes it fast, easy, affordable and environmentally responsible. Our goal is to deliver electric vehicles that are as engaging, easy to use and empowering as other forms of consumer electronics like smartphones.

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Bringing EVs to Market Thoughtfully

Ford is taking a proactive approach to making PHEVs and BEVs successful in the marketplace. We are working with utilities, municipalities, dealers and customers to make the transition to these EVs as smooth as possible.

For instance, we have developed extensive training materials to educate dealers’ sales personnel on the unique features and functionality of electric vehicles so that they are able to assist customers with their purchase decisions. As part of these preparations, dealers who sell BEVs and PHEVs are required to install two EV charge stations at their facilities – one in the service area and another in the customer-facing area. These dealers are also participating in a “green dealer onsite facility assessment” to identify energy- and cost-saving opportunities, with a goal to improve energy efficiency, lower operating expenses and reduce the dealership’s carbon footprint. As of March 2013, we have certified more than 600 dealers in 48 states to sell our electrified vehicles and have more than 200 additional dealers signed up to undergo the certification process during the remainder of 2013. This is more than triple our original estimate for certified EV dealers – another sign of growing interest in these vehicles. For more information, please see the Dealers section.

We have also developed websites, videos and brochures to help consumers understand our electrified vehicle offerings and incorporate BEVs and PHEVs into their lifestyle. For example, our electrified-vehicle website helps consumers understand the key features of and differences between electrified vehicle options, and our www.plugintoford.com site helps customers understand how to get the most from their electric vehicle. We have also developed videos on vehicle features such as MyFord Mobile, how to charge the vehicle or set the charge time, and how to have a charging station installed.

In addition, we targeted our initial BEV offerings in markets that were able to take advantage of the full range of BEVs’ benefits right away. We initially introduced the Focus Electric in the largest electrified vehicle markets – New York, New Jersey and California – which have some of the most established, fastest-growing charging station infrastructures and government support. We followed this initial vehicle launch with a rollout in the fall of 2012 to 15 additional U.S. metropolitan areas, which were chosen based on several criteria, including commuting patterns, existing hybrid purchase trends, utility company collaboration and local government commitment to electrification.

As part of our collaboration with dealers, utilities and local governments, Ford is helping to develop consumer outreach and education programs as well as share information on charging needs and requirements to ensure that the electrical grid can support customers’ needs. For example, we launched a “Go Further” tour in 14 cities around the country as part of this effort. This tour promotes

Ford's electric-vehicle strategy, solidifies our collaborations with local utilities and municipalities to make BEVs and PHEVs a success, and educates consumers about what to expect from electrified automobiles and what is needed from the public and private sector to support this new technology. In 2012, we also held more than 25 consumer education events in key BEV and PHEV markets around the country; some were standalone Ford events and some were larger sustainable-lifestyle events in which we participated. These consumer education events included educational exhibits about Ford's electrified-vehicle offerings, the benefits of BEVs and PHEVs, and recharging options, as well as live demonstrations of the MyFord Mobile technology and the opportunity to test drive Ford vehicles. We are continuing our consumer-education efforts in 2013 with at least 27 additional events and a goal of providing at least 10,000 test-drive experiences.

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Collaborating with Partners

The development and diffusion of electrified vehicle technologies is a global challenge. Major advances have already been made on the electrical technology at the core of next-generation electrified vehicles, and there's more to come. We are working with a coalition of other automotive manufacturers and other stakeholders to develop technologies, standards and cost efficiencies to commercialize electrified vehicles. It will take a collaborative approach of automakers, battery producers, suppliers, fuel producers, utilities, municipalities, educators and researchers, as well as policy makers and opinion shapers, to help us make the transition and realize the full benefits of electrification.

Traditional automotive suppliers, transforming themselves for electrification, are being joined by new suppliers adapting electronics to the automotive environment. Significant possibilities exist for innovation in battery technology, power electronics and the development of motors, generators, high-voltage systems and other components, as well as the information technology necessary to maximize the potential of electric vehicles.

Ford's plan calls for strategic partnering with key suppliers who bring technical expertise, financial solidity and collaborative spirit. We believe that working with a range of partners will allow us to gain greater understanding of the connectivity of vehicles to the electric grid, promote the necessary infrastructure and bring down the costs of the technology to make it more accessible for consumers. We are partnering with companies that are already the best in their fields, instead of attempting to recreate products, services and technologies internally, to offer customers the best-possible suite of electrified vehicle-related products, services and technologies.

In January 2013, Ford launched the MyEnergi Lifestyle project, a collaboration with representatives of the consumer-appliance, renewable-energy and power-management industries to demonstrate how plug-in vehicle technology can be applied across household appliances and renewable energy generation for an energy- and money-saving lifestyle. Current partners include Whirpool, Easton, SunPower and Georgia Institute of Technology. For more information on this partnership, see Collaborating with Partners

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1. Actual mileage will vary.
2. EPA-estimated rating of 110 city/99 hwy/105 combined MPGe. Actual mileage will vary. MPGe is the EPA equivalent measure of gasoline fuel efficiency for electric mode operation.
3. Actual mileage will vary. MPGe is the EPA equivalent measure of gasoline fuel efficiency for electric-mode operation.
4. EPA-estimated rating of 44 city/41 highway/43 combined. 14 gallon tank; 21 miles electric. Range calculations based on www.fueleconomy.gov. Actual mileage will vary.

Comparing Electrification Technologies

Electrified vehicle technologies range from conventional gas-engine vehicles with a start-stop function (sometimes referred to as micro hybrids), to hybrid electric vehicles (HEVs), plug-in electric vehicles (PHEVs), and battery electric (or "all-electric") vehicles (BEVs). These technologies have different benefits and different ideal driving conditions. We believe it is important to offer customers a range of fuel-efficient and reduced-emission vehicles, including efficient traditional gas-powered vehicles and electrified vehicle options. We are also committed to helping customers understand the relative advantages of different vehicle options based on their driving needs. We call this approach the "power of choice."

In a recent national survey, we found that nearly half of Americans are confused about green vehicle options, with 46 percent not knowing the difference between a hybrid, plug-in hybrid and all-electric vehicle. This Sustainability Report is one of the key mechanisms we use to inform customers about the different electrified-vehicle options. We are also working with SHFT.com on a series of short films aimed at clarifying the different technologies for consumers. Ford also has an electrified-vehicle website to help consumers understand the key features of and differences between electrified-vehicle options. And, we explain the range of interactive tools available to drivers of our electrified vehicles on our www.plugintoford.com website. We are also reinforcing our power-of-choice product offerings through a "Go Further" tour that helps consumers learn more about electrified vehicles in an engaging, interactive atmosphere. Through all of these communication channels, we seek to help customers decide what vehicle technology is best for them.

The chart below compares a range of vehicle types, from conventional gasoline to pure battery electric. In the near term and mid-term, the largest volume of electrified vehicles will likely be hybrid electric vehicles, which use both a gasoline engine and a battery electric motor but do not plug into the electric grid. In the U.S., HEVs made up approximately 2.8 percent of the market for new vehicles in 2012. In the longer term, electrified vehicles that get some or all of their energy directly from the electric grid – including PHEVs and BEVs – are likely to play an increasingly significant role. The table below provides a generalized overview of the relative benefits and impacts of these different electrified vehicle technologies, based on typical compact C-class vehicles similar to those Ford currently offers (e.g., the Ford Focus, C-MAX Hybrid, C-MAX Energi and Focus Electric). Because no single Ford model is available with all of these alternative propulsion concepts, these values are approximate for comparison purposes only and do not reflect values for actual products.

	Conventional Internal Combustion Engine Vehicle (ICEV)	Conventional ICEV with Start/Stop Technology[1]	Hybrid Electric Vehicle (HEV)	Plug-in Hybrid Electric Vehicle (PHEV)	Battery Electric Vehicle (BEV)
Technology overview	Traditional gas or diesel engine.	Traditional gas or diesel engine and powertrain with stop-start capability, which shuts down the engine when the vehicle is stopped and automatically restarts it before the accelerator pedal is pressed to resume driving. Regenerative brake recharging improves fuel economy.	Uses both an internal combustion engine and an electric motor. Can run exclusively on battery power, exclusively on gas power or on a combination of both. Also has stop-start capability and regenerative braking.	Uses a high-capacity battery that can be charged from an ordinary household 120-volt (V) outlet or a 240V charging station. When the battery is depleted, the PHEV runs like a regular HEV.[2]	Uses only a battery-powered electric motor, no gas or diesel engine. Runs entirely on electricity from batteries, which can be charged from household outlets or specialized charging stations.
Ideal driving conditions	Flexible for a wide range of uses.	Flexible for a wide range of uses. Improved fuel economy in urban driving.	Flexible for a wide range of uses. Excellent urban fuel economy and improved highway fuel	Flexible for a wide range of uses. Dramatically improved fuel economy. Suitable for customers who	Ideal for customers with access to a charging station at home or work who have shorter,

Related links

Ford Websites

- Electrified Vehicles
- Plug into Ford

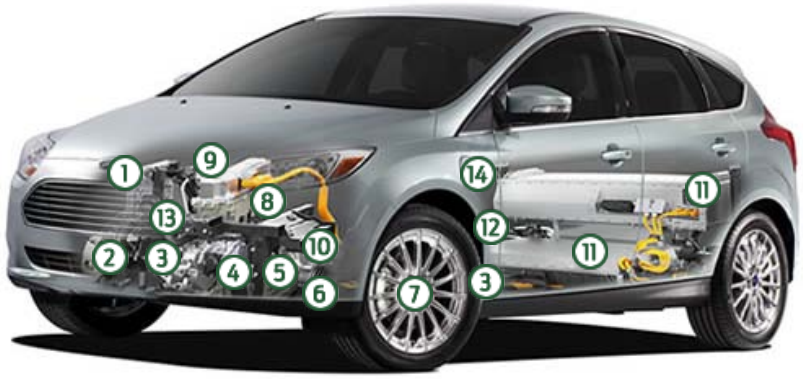
			economy.	have access to a 120V outlet or 240V charging station at home and/or the office. Can provide approximately 20 miles in pure electric mode, but is flexible for longer trips as well.	predictable daily trips of less than 80 miles (between charges).
Technology Benefits/Costs Based on a Typical Compact or "C-class" Sedan[3]					
Fuel economy[4]	~31mpg	~32 mpg	~47 mpg[5] combined city and highway	100 MPGe[6] (combined city and highway) in electric mode. Similar to HEV when running on gasoline in hybrid mode.	105 MPGe[7]
Range on tank/charge[8]	~380 miles/tank	~470 miles/tank	~570 miles/tank	~620 miles on combined gas and electric power. More than 1,200 miles between visits to a gas station in typical use.	Up to 76 miles on a charge
Fueling/charging time	Minutes	Minutes	Minutes	Minutes for gasoline; 2.5 hours with a 240V outlet and 7 hours with a 120V outlet.	4 hours with a 240V outlet if equipped with a 6.6 kW charge port
CO_2 emissions[9]					
Well to tank[10]	~50 g/km	~50 g/km	~35 g/km	~40 g/km	n/a
Tank to wheels[11]	~165 g/km	~160 g/km	~110 g/km	~110 g/km	n/a
Total CO_2[12]	~215g/km	~210 g/km	~145 g/km	~145 g/km[13]	~130 g/km
Annual fuel cost	~$1,200–1,900[14]	~$1,200–1,900[15]	~$800–1,300[16]	~$600–900 ($400–700 for gasoline + $200 for electricity)[17]	~$400[18]

1. Some automakers consider this a form of hybrid vehicle. However, Ford views and is implementing these technologies as part of our strategy to improve the fuel economy of conventional internal-combustion-engine vehicles. We assume start-stop technology can provide up to 6 percent fuel economy improvement in city driving.
2. Another type of PHEV, often called an Extended-Range Electric Vehicle, runs entirely on battery power until the battery is depleted, and then the onboard gas-powered engine runs to recharge the battery. The wheels are driven only by the electric motor, and the engine's sole purpose is to recharge the battery.
3. These numbers are for comparison purposes only. They are based on modeling and testing calculations and do not necessarily represent the numbers that would be achieved in real-world driving conditions, nor do they represent actual products that Ford currently makes or may produce.
4. The internal-combustion engine fuel-economy estimate is based on the calculation used by the U.S. Environmental Protection Agency to develop combined fuel-economy (city/highway) values for the labels affixed to new vehicles. The combined fuel-economy value is intended to represent the approximate fuel economy that most consumers can expect based on a typical mix of city and highway driving. Estimates for the other technologies are based on the metro-highway drive cycle used for the U.S. fuel-economy regulations. Fuel-economy calculations for all of the technologies are based in U.S. gallons and on U.S. drive cycles.
5. In general, HEVs deliver approximately 40?50 percent better fuel economy than comparably sized non-hybrids.
6. MPGe or miles per gallon equivalent for electric vehicles is calculated based on the 33.7 kWh energy content of a gallon of gasoline.
7. MPGe or miles per gallon equivalent for electric vehicles is calculated based on the 33.7 kWh energy content of a gallon of gasoline.
8. All estimates are based on a 13.5-gallon tank except for the BEV, which has no fuel tank.
9. In vehicles using internal combustion engines, the fuel feedstock is assumed to be petroleum gasoline.
10. Well-to-tank emissions represent the CO_2 generated by excavating feedstocks and producing and distributing the fuel.
11. Tank-to-wheels emissions represent the CO_2 generated by burning the fuel in the vehicle.
12. Total CO_2 is the sum of the well-to-tank, tank-to-wheels and electricity generation emissions. The PHEV total CO_2 emissions are weighted by the share of miles traveled in electric and gasoline modes.
13. Total CO_2 for the PHEV assumes an all-electric range of 20 miles and a utility factor of 48 percent (SAE J2841). The utility factor indicates the percentage of distance the vehicle is driven using electricity.
14. Based on 12,000 miles/year, 31 mpg and $3–5/gallon.
15. Based on 12,000 miles/year, 32 mpg and $3–5/gallon.
16. Based on 12,000 miles/year, 47 mpg and $3–5/gallon.
17. Based on 12,000 miles/year, 50 percent in electric mode at 3.5 miles/kWh (midpoint of range of 3–4 miles/kWh in electric mode) and 12 cents/kWh, and 50 percent in gasoline-engine mode at 43 mpg and $3–5/gallon.
18. Based on 12,000 miles/year, 3.5 miles/kWh (midpoint of range of 3–4 miles/kWh for a typical BEV) and 12 cents/kWh.

BEV Technology Overview

Ford All-Electric Vehicle

1. Motor Controller and Inverter
2. High Voltage Electric HVAC Compressor
3. Electric Water Pump
4. Traction Motor
5. Electric Power Steering
6. Transmission
7. Regenerative Braking
8. Electric Vacuum Pump
9. High-Voltage Electric Coolant Heater and Controller
10. Powertrain Control Module
11. Battery Pack
12. AC Charger
13. DC-DC Converter
14. Charge Port Light Ring



1 Motor Controller and Inverter

The motor controller monitors the motor's position, speed, power consumption and temperature. Using this information and the throttle command from the driver, the motor controller and inverter convert the DC voltage supplied by the battery to three precisely timed signals used to drive the motor.

2 High Voltage Electric HVAC Compressor

The high-voltage air-conditioning system is specifically designed for electric-vehicle applications, drawing electrical energy directly from the main battery pack.

3 Electric Water Pump

The electric-drive water pump circulates coolant for the traction motor, inverters, battery and climate-control system.

4 Traction Motor

The traction motor performs the conversion between electrical and mechanical power. Electric motors have efficiencies three times higher than that of a standard gasoline engine, minimizing energy loss and heat generation.

5 Electric Power Steering

An electro-hydraulic steering pump was installed to assist a retuned steering rack. It is tuned to deliver the same driving dynamics as the gasoline-powered Focus.

6 Transmission

The transmission has the identical role as in a conventional gasoline-powered vehicle; however, it has different design considerations due to the higher RPM range available from the electric motor and the increased emphasis on efficient and silent operation. The transmission is a single-speed unit.

7 Regenerative Braking

More than 95 percent of the energy normally lost through braking can be recovered and stored in the battery.

8 Electric Vacuum Pump

The vacuum pump provides energy-efficient power-assisted braking.

9 High-Voltage Electric Coolant Heater and Controller

Heating systems are specifically designed for electric vehicle applications using energy-efficient technology to heat the coolant that circulates to the passenger car heater. Heat also may be circulated to the battery to optimize performance.

10 Powertrain Control Module

The powertrain control module monitors and controls each vehicle system, and manages the energy and mechanical power being delivered to the wheels to maximize range.

11 Battery Pack

The battery pack is made up of 86 cells for a total of 23 kWh of power. The batteries are liquid cooled. The pack includes an electronic monitoring system that manages the temperature and state of charge of each of the cells.

12 AC Charger

Power electronics are used to convert the off-vehicle AC source from the electrical grid to the DC voltage required by the battery, thus charging the battery to its full state of charge in a matter of hours. The current charger is air cooled. The production design will accommodate both 110 and 220 voltage sources.

13 DC-DC Converter

A DC-DC converter allows the vehicle's main battery pack to charge the on-board 12V battery, which powers the vehicle's various accessories, headlights and so forth.

14 Charge Port Light Ring

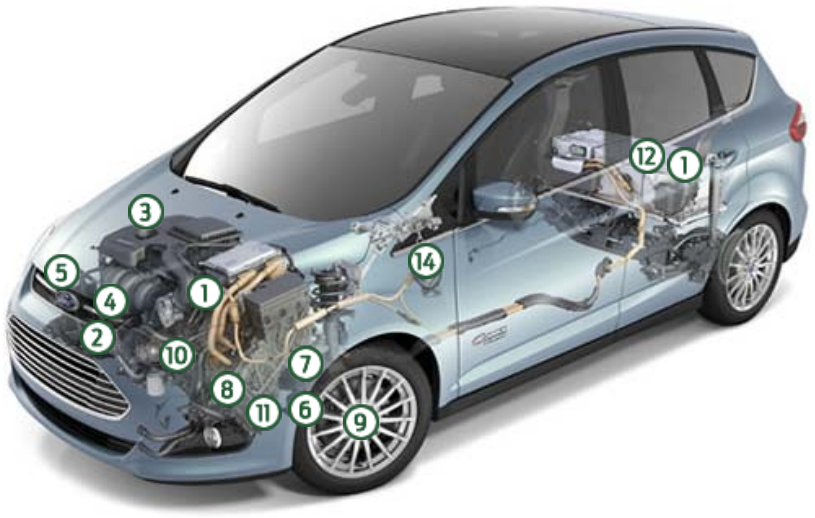
A standard SAE J1772 plug interface is used for charging. Ford's charge port "light ring" provides an external indicator of charging status.

PHEV Technology Overview

Below is a detailed look at the components that are used in the Ford C-MAX Energi, one of our plug-in electric vehicles (PHEV).

Ford C-MAX Energi Plug-In Hybrid

1. Inverter System Controller
2. Air Conditioning Compressor
3. 2.0L Atkinson-Cycle Gasoline Engine
4. Electric Water Pumps
5. Electric Heater
6. Electric Power Steering
7. Hybrid Transmission
8. Transaxle Oil Pump
9. Regenerative Braking
10. Electric Vacuum Pump
11. Engine Control Module
12. Advanced Lithium-Ion Battery Pack
13. Onboard Charger Module
14. Charge Port Light Ring



1 Inverter System Controller

The inverter system controller manages hybrid powertrain control, including DC-to-AC conversion, driving the electric motors in the transmission for optimal fuel economy while providing the performance drivers want.

2 Air Conditioning Compressor

Specifically designed for electrified-vehicle application, the compressor draws energy directly from the high-voltage battery pack, which allows the engine to turn off more frequently to save fuel while enabling cabin cooling to continue.

3 2.0L Atkinson-Cycle Gasoline Engine

This all-new, high-efficiency, advanced four-cylinder engine has independent variable camshaft timing and delivers fuel efficiency and performance.

4 Electric Water Pumps

The main electric water pump provides engine cooling. Smaller pumps provide inverter system controller cooling and heater core coolant circulation when the engine is off.

5 Electric Heater

The electric heater is an energy-efficient technology that heats coolant; it is specifically designed for use on electrified vehicles.

6 Electric Power Steering

The electric power steering is tuned to deliver class-leading steering feel. It also is available with the Active Park Assist feature.

7 Hybrid Transmission

The PHEV's hybrid transmission includes an electric traction motor capable of providing 88 kW of power, coupled with a

generator in a powersplit transaxle. It provides an electronically controlled, continuously variable transmission function, which harmoniously manages power from the gasoline engine.

8 Transaxle Oil Pump

The oil pump provides powersplit transaxle cooling, which is required by increased electric-only driving.

9 Regenerative Braking

With the regenerative-braking technology, more than 95 percent of the energy normally lost through braking is recovered and stored in the battery via the electric drive.

10 Electric Vacuum Pump

The electric vacuum pump provides energy-efficient, power-assisted braking.

11 Engine Control Module

The engine control module manages engine control systems to maximize fuel economy and minimize emissions.

12 Advanced Lithium-Ion Battery Pack

The advanced lithium-ion battery pack provides total energy of 7.6 kWh with air cooling for thermal management. It also includes a control module that manages temperature and state of charge, and a DC-to-DC converter that provides 12V battery to power vehicle accessories (headlights, etc.).

13 Onboard Charger Module

Packaged in the battery pack, an onboard charger module converts AC utility power to DC battery storage energy.

14 Charge Port Light Ring

A standard SAE J1772 plug interface is used for charging. Ford's charge port "light ring" provides an external indicator of charging status.

Living the Electric Lifestyle

Enhanced In-Vehicle Information with MyFord Touch®

Remaining distance calculation
The MyFord Touch® system is customizable; it shows the distance to the next required charge point, among other options.

Remaining charge calculation
The Focus Electric will continuously analyze a driver's style, recalculate range and distance to required charge, and show how driving behavior affects the vehicle's energy "budget."

Efficiency coach
The Focus Electric will continuously analyze a driver's style and show how driving behavior affects the vehicle's energy "budget." The system can also coach drivers on how to drive more efficiently to maximize their electric driving range.

View power demands of vehicle accessories
The MyFord Touch system will provide vehicle data, such as the electrical demands of vehicle accessories – including air conditioning, which influences the electric driving range.

Fast, Flexible and Easy Charging

Charging status display lights around port
We are making charging easier with an easy-to-read light ring around the charge port. When the plug is connected, the light loops around the port twice. The light ring then illuminates in quadrants as the vehicle charges.

Completely recharge at home in just four hours
The Focus Electric uses a 6.6 kW charger, which enables an at-home charge time of four hours when using a 240 V charge station installed in the customer's garage.

The only plug-and-play charging system
Ford is currently the only auto manufacturer to offer a "plug-and-play" charging system that is easy to install and portable, so you can take it with you if you move.

Smart charge schedule charges during off-peak rates
U.S. drivers can customize charging preferences and times based on when utility rates are lowest in their area. Customers reduce their electricity costs by taking advantage of off-peak or other reduced utility rates without a complicated set-up process.

Remote Control with MyFord Mobile™

Remote locking and unlocking
Like any Ford vehicle equipped with MyFord Touch, our electric vehicles allow drivers to remotely start the vehicle and remotely lock and unlock the car doors using their smartphone.

Monitor your charge and receive alerts
Drivers can monitor the car's state of charge and current range, get alerts when it requires charging, remotely program charge settings and download vehicle data for analysis from their smartphone or a secure Ford website.

Compare driving efficiency with friends
MyFord Mobile for EVs also adds a social element. Drivers can compare their driving efficiency to friends and other EV drivers.

Locate your vehicle
Like any Ford vehicle equipped with MyFord Touch, our electric vehicles allow drivers to locate the vehicle with GPS.

Find charge stations
Working with MapQuest®, MyFord Mobile can communicate the location of a charge station to the Focus Electric using SYNC®'s Traffic, Directions and Information.

To help drivers make the transition to electric vehicles (EVs), and get the most out of their EVs, we are offering more than just the vehicle. We are delivering a total electric-vehicle lifestyle. In the U.S., for example, our EVs have advanced in-vehicle communications that help drivers maximize the efficiency and range of their vehicles, find charging stations along their planned routes, and know exactly how far they can go until the next charge based on their own driving style. We have also enabled drivers to link their smartphones to our vehicles so that they can control charging and other in-vehicle operations remotely. And, we have developed a comprehensive approach to vehicle charging that makes charging fast, easy, affordable and environmentally friendly. Our goal is to deliver electric vehicles that are as engaging, easy to use and empowering as other forms of consumer electronics like smartphones. Our "Plug Into Ford" website provides customers with an in-depth look at how to make the most of the electric-vehicle lifestyle.

Enhanced In-Vehicle Information through SYNC® with MyFord Touch® and Smart Gauge® with EcoGuide

We designed our battery electric and plug-in hybrid vehicles to provide more range at full charge than most Americans will use each day. But we know that, at least initially, driving range between charges will be an important factor for consumers. So we have designed in-vehicle communications to make on-board energy management a rewarding and fun part of the ownership experience.

In several regions, including the U.S., our electric vehicles include an enhanced version of SYNC® with MyFord Touch® – Ford's driver interface technology – that includes next-generation Smart Gauge® with EcoGuide. Smart Gauge with EcoGuide gives drivers real-time feedback on the efficiency of their driving habits and tips on driving more efficiently. The system also helps drivers plan the most environmentally responsible route and manage the battery-recharge process. For example, the system can provide vehicle data such as the electrical demands of vehicle accessories – including air conditioning, which influences the electric driving range. It also provides information on the battery's state of charge, distance to charge points, "energy budget" and expected range surplus.

The system even analyzes individual driving styles, as well as climate control and other options, to provide tailored information about range and remaining charge. Drivers who drive slowly and smoothly can get an increased range out of their car than those who drive more aggressively. The Focus Electric continuously analyzes a driver's style, recalculates range and distance to required charge, and shows how driving behavior affects the vehicle's energy budget. The vehicle recognizes drivers by their key fobs so that the data provided takes into account their unique driving style. The system can also coach drivers on how to drive more efficiently to maximize their electric driving range.

SYNC® with MyFord Touch® with next-generation Smart Gauge® gives drivers real-time feedback on the efficiency of their driving habits and tips on driving more efficiently.

The system also includes a trip-planner feature to help drivers plan their trip based on the available battery range and the location of charging stations. The trip-planning system integrates information about driving style and the driving efficiency "coach" to help drivers go farther on their remaining charge by maximizing regenerative braking, turning down the air conditioning or other efficient driving actions.

Related links

Ford Websites

» Plug into Ford

The Focus Electric's in-vehicle information is also customizable. For example, information can be viewed in three different modes: Energy Budget, which shows the remaining charge; Range, which shows the distance to the next required charge point; and Surplus View, which shows drivers how much energy or range they are saving by using different options and driving efficiently. The system also uses a variety of simple graphics like an energy "budget cup" and surplus energy "butterflies" that make it easy for drivers to quickly interpret information.

Finally, Smart Gauge also includes EV+, a program that learns drivers' frequent destinations and adjusts how the electric power stored in the vehicle's high-voltage battery is used to power the vehicle. If EV+ determines the vehicle is within a radius of 1/8 mile, or 200 meters, of a frequent stop, the vehicle has increased capability to stay in electric-only mode, the internal combustion engine stays off, and an "EV+" light appears on the dashboard, further reducing fuel use.

Remote Control with MyFord Mobile™

Drivers in the U.S. and Canada can manage their Ford Focus Electric, C-MAX Energi and Fusion Energi remotely using the Ford-developed MyFord Mobile™ app. This app allows drivers to locate the vehicle with GPS, remotely start the vehicle and remotely lock and unlock the car doors using their smartphone. On our electric vehicles, the MyFord Mobile app provides a suite of additional remote communications. Working with MapQuest, for example, the MyFord Mobile app can find the location of a charge station on the driver's smartphone and send that location to the Focus Electric using the Traffic, Directions and Information program in the Ford SYNC system. For the Focus Electric, C-MAX Energi and Fusion Energi, the MyFord Mobile app uses PlugShare to provide users with the most comprehensive database of public charging stations; it includes reviews, photos and station locations from crowd sourcing as well as location and availability information from charge-station providers in the U.S. and Canada. Drivers can also get instant vehicle status information, monitor the car's state of charge and current range, receive alerts when it requires charging, remotely program charge settings and review vehicle data for analysis – all using their smartphone or the MyFord Mobile website. All of the vehicle's screens and control panels are integrated into the MyFord Mobile app's smartphone display, so that drivers can move seamlessly from their car to their phone displays.

The MyFord® Mobile app provides a suite of remote communications features to help drivers manage their electric vehicles.

The MyFord Mobile app also allows drivers to program their vehicle to use electricity from the grid to heat or cool the battery and cabin while the vehicle is still plugged in. This "preconditioning" of the vehicle's temperature is a key strategy drivers can use to maximize their driving range.

The MyFord Mobile app for EVs also adds a social element. Through PlugShare, drivers can compare their driving efficiency to that of friends and other EV drivers through seamless connections to popular social platforms like Facebook and Twitter. In addition, the system gives drivers virtual awards and badges for improvements in driving efficiency.

The remote vehicle monitoring and management features of MyFord Mobile were honored with the Innovation Design and Engineering Award at the 2012 Consumer Electronics Show; they also won the 2013 IxDA (Interaction Design Association) Interaction Award for Optimizing category, which honors technologies that make daily activities more efficient.

For more information, see the MyFord Mobile features video demonstration.

Fast, Flexible and Easy Charging

Charging is one of the most important changes drivers have to get used to with a battery electric vehicle (BEV) or plug-in hybrid electric vehicle (PHEV). We have gone to great lengths to make our charging systems fast, easy and economical.

The Focus Electric uses a 6.6 kW charger, which enables an at-home charge time of four hours when using a 240 V charge station installed in the customer's garage. The 6.6 kW charger also allows drivers to get more range out of "quick stop" charging during the course of their driving day. The Focus Electric can get approximately 30 miles of range per "charge hour," while our C-MAX Energi and Fusion Energi can get approximately 15 miles per charge hour with their 3.3 kW charge port.

In the U.S., Ford EV drivers can also customize their charging preferences. Drivers can choose the times when their car is charged up and ready to go and set a charging schedule that dictates when the charging starts and stops to meet those needs. They can also control vehicle charging using Value Charging, a system that sets up charging times based on when utility rates are lowest in their area. With Value Charging, customers can reduce their electricity costs by taking advantage of off-peak or other reduced utility rates without a complicated setup process. Customers can thus "set it and forget it," knowing their vehicle will only charge when utility rates are at their lowest. Ford electric vehicles are the first to work with this charge management system. And, our faster charge times make it easier to get a complete charge within the time periods of the lowest utility rates. Our system also sends vehicle owners reminders if their vehicle is not plugged in for a programmed charge time or if their vehicle is unplugged or stops charging unexpectedly during charging.

We are also making charging easier with an easy-to-read "light ring" around the charge port. When the plug is connected, the light loops around the port twice to acknowledge charge initiation. The light ring then illuminates in quadrants as the vehicle charges, where each quadrant lit represents 25 percent of the battery's state of charge. Flashing quadrants signify that the charge is in progress. When the ring is solidly lit, the vehicle is fully charged. Drivers can also find out their vehicle's state of charge by pressing a button on their key fob; in response, the light ring indicates the amount of charge by lighting the appropriate number of segments of the "light ring."

Similar to our "power of choice" approach to providing customers a range of fuel-efficient and advanced technology vehicle options, we also offer drivers a range of choices for charging their BEV or PHEV. In the U.S., our recently refined process gives drivers the choice of two charging station installation methods. Customers can opt to just purchase the charging station and install it themselves or use an electrician of their choice. Or, customers can choose a full installation option, in which installation services are provided through an experienced national network of electricians who handle every aspect, from site survey to completed installation. With the full installation option, charging stations can be installed in as quickly as one day, at a time and date selected by the customer.[1] The customer can use either a website or call center (1.888.219.6747) to schedule and track their purchase and installation. In Europe, we offer a similar service through a relationship with Schneider Electric. Electric vehicle buyers will be registered online at the dealership for a consultation to determine the appropriate installation based on their home electrical system.

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1. Assumes standard installation in an attached garage. Installation times may vary depending on site conditions and local permitting requirements. Other restrictions may apply. Contact installer for complete details.

Maximizing the Environmental Benefits of Electrified Vehicles

Full battery electric vehicles (BEVs) are considered "zero emission" because they don't release greenhouse gases or other pollutants during use. But that term can be misleading, because it takes electricity to charge the vehicle, and the power plant generating the electricity may also generate emissions. Electric vehicles do reduce pollutants generated by burning petroleum fuel in the vehicle, in proportion to the reduction in vehicle fuel consumption. However, replacing gasoline with electricity generated from coal, for example, results in emissions at the power plant, including carbon dioxide (CO_2), nitrogen oxides, sulfur dioxide, volatile organic compounds, carbon monoxide and particulate matter. As a result, the environmental benefits of BEVs and plug-in hybrid electric vehicles (PHEVs) depend largely on the fuels used to power the electrical grid. Operating a PHEV or BEV on the current average U.S. electrical grid, which relies heavily on coal power, results in well-to-wheel emissions that are similar to those of a hybrid electric vehicle (HEV). (See the well-to-wheels CO_2 emissions values on the Comparing Electrification Technologies page.)

In some regions of the country, however, where electrical power is derived largely from cleaner and/or renewable sources, the emissions benefits of PHEVs and BEVs can be much greater, because renewable energy sources produce significantly fewer emissions than coal and natural gas. We believe that, over time, the emissions benefits of PHEVs and BEVs will continue to improve as states undertake efforts to improve the emissions profiles of their electrical grids. Already, many states have portfolio standards that require the use of renewable sources of electricity. "Smart grids" that include grid-to-vehicle communications would enable utilities to make even more-efficient use of electricity supplies, potentially reducing emissions and electricity costs. (See MyEnergi Lifestyle for an example of how connected technologies can improve the efficiency of vehicles, homes and electric power generation.)

To help customers think through the relative lifecycle carbon emissions of different vehicle options, Ford has developed a carbon emissions calculator. Currently used by Ford's National Account Managers with their fleet customers, this calculator helps customers assess the well-to-wheels emissions benefits and fuel costs of alternative fuel vehicles. The calculator allows the customer to input factors such as vehicle type (e.g., hybrid, battery electric, diesel, flex-fuel), electricity source by U.S. region or fuel (e.g., coal, nuclear, renewables, natural gas) and likely driving patterns (e.g., stop-and-go city traffic, highway driving or a mix). These key factors help determine the relative environmental benefits the customer may achieve with each type of vehicle and fuel. For a customer deciding where to place an EV in their fleet, the calculator shows that the Focus Electric emits about 70 g CO_2/km using electricity from the low-carbon California grid but more than twice as much, about 150 g CO_2/km, in the more coal-intensive Southeast U.S.

Energy Security Benefits of Electrified Vehicles

The current energy demand for transportation is almost exclusively met by petroleum. Globally, approximately 94 percent of transportation energy demand is provided by petroleum. The near-complete dependence of a vital economic sector on what in many places is an import-dominated energy resource is clearly an issue of concern. One of the major benefits of increasing the proportion of electrified vehicles is that it will diversify the transportation energy demand and provide increased energy security. Hybrid electric vehicles (HEVs) reduce petroleum demand by increasing efficiency. PHEVs reduce petroleum demand by increased efficiency and also by switching some of the energy demand from petroleum to other sources. PHEVs offer flexibility in fuel choice, while BEVs remove entirely the need for petroleum.

The U.S. currently imports just under 50 percent of its petroleum consumption, though this figure is declining as U.S. oil and gas production increases. The increased electrification of the U.S. vehicle fleet will decrease petroleum demand and accelerate the transition to a more energy-secure future.

Maximizing Vehicle Efficiency

Electric vehicles are inherently more efficient than gasoline vehicles. Electric motors are approximately 3–4 times more efficient than traditional internal combustion engines. In addition, electric-drive vehicles do not consume energy while at rest or coasting, and more than 93 percent of the braking energy is recaptured at each stop.

Ford has made it a priority to further maximize the efficiency of our electric vehicles. We optimized every system in the vehicle to ensure it would be as efficient as possible. In addition to using the latest technology for the battery and the rest of the electric-drive components, we have maximized efficiency through improved aerodynamics and low rolling resistance. And, we used our knowledge from two generations of hybrid electric vehicles to enhance the Focus Electric's range and efficiency through regenerative braking.

Maximizing Driving Efficiency

Our in-vehicle information systems also help drivers to increase the distance they can go on a single charge and reduce the overall costs of operating an EV by helping them drive as efficiently as possible. Our electric vehicles can coach drivers on how to maximize efficiency by focusing on the "ABCs" of efficient driving: acceleration, braking and cruising. These tools also help drivers to maximize their driving range. See Living the Electric Lifestyle for more information.

Maximizing Charging Efficiency

As mentioned above, the most important strategies for maximizing the efficiency and environmental benefits of electric vehicle charging require changes to the electrical grid and the fuels used to power it. While these issues are mostly beyond Ford's control, we are working with utilities and municipalities to make the most of electric vehicles' advantages, as discussed below. (See also the Collaborating with Partners section.)

Using Renewable Energy: As the power-generation sector continues to improve its fuel mix, the environmental impact of driving a plug-in vehicle will diminish substantially – perhaps even toward zero. But adding more renewable fuel sources to electrical grids will take time. As this evolution takes place, smart vehicle-to-grid communication systems can help utilities better use the renewable energy sources that are accessible. For example, such systems can allow vehicles to charge when wind power is most available (usually at night) or during the day from solar arrays, depending on the renewable source available and its output.

In addition, home-based solar power is becoming more affordable. Solar power in general has dropped from approximately $6 per watt of capacity in 2011 to $2–3 per watt in early 2013. In states with home solar power incentives, customers may be able to lease solar energy systems at a price that is lower than their current monthly electric bill, with no upfront cash.

Ford is working with utility partners to develop home-based solar recharging stations that will allow EV owners to obtain the power they need to charge their vehicles from renewable sources, even if the overall electricity grid has not changed. Specifically, we have partnered with SunPower Corp. to offer customers the Drive Green for Life program, which includes a home rooftop solar system that can provide enough clean, renewable energy to offset the electricity used to charge the car. The 2.5 kW rooftop solar system is backed by a 25-year limited warranty and produces an average of 3,000 kilowatt hours of electricity annually. The high-efficiency panels generate approximately 50 percent more electricity than conventional panels and utilize a smaller footprint on the roof. The system is sized to provide the electricity needed to drive about 1,000 miles per month or 12,000 miles per year. We worked closely with SunPower to ensure the unit would be available below a $10,000 price point (including incentives), which makes it the most affordable rooftop solar system of its kind and allows us to make the benefits of solar charging available to more of our customers.

"Smart Grids and Smart Charging:" The development of smart grid technologies, which can provide utilities and customers with real-time information on energy use and energy prices, is a key enabler of the efficient integration of electric vehicles and grids, and an important strategy for maximizing EV efficiency and environmental benefits. Smart grids will help make the electrical grid and electrical vehicle charging more efficient by channeling vehicle charging to times when electrical grid resources are currently underutilized. Since demand for electricity fluctuates (generally peaking in the afternoon and dropping off at night), utilities typically use a mix of fuels and power plant types to meet demand. That means the environmental impacts of electric vehicle use will vary depending on where and when the vehicles are charged. During certain seasons and particularly at night, utilities generally have excess generation capacity – unused resources that create financial inefficiency. Charging PHEVs and BEVs during these off-peak hours, when this excess capacity is available, can increase the overall efficiency of the electric grid – potentially reducing CO_2 emissions, as well as the cost of electricity. If PHEVs and BEVs are charged at peak times, that could create increased CO_2 emissions from power generation and also create demand for additional power plants. Utilities have a role to play in educating electrified-vehicle users and providing them with incentives to charge their vehicles at the most beneficial times.

Smart meters are a key element of smart grids. Smart meters allow two-way communication between homes and their electric utility, and also between “smart” equipment in customers’ homes (such as plug-in vehicles) and the utility. Smart meters facilitate “smart vehicle charging” during lower-cost, off-peak times. Approximately 45 million homes in the U.S., or about one third of households, were equipped with a smart meter as of December 2012, and experts predict that 65 million households will be equipped by December 2015.

Value Charging: Value Charging, which is available on Ford’s electrified vehicles in the U.S., also helps to maximize the efficiency of charging and the environmental benefits of EVs. This system contains information on local utility rates and off-peak times to charge, which helps to prevent the need for infrastructure upgrades to support added energy demand and reduce the production of additional CO_2. Ford will to continue to work with utility partners and municipalities to help further develop systems to maximize the effectiveness of electric vehicles and their interaction with the electricity grid.

A Holistic Environmental Approach

Reducing emissions and maximizing vehicle efficiency are just some of the elements of our strategy to maximize the environmental benefits of EVs. We are also using green power and green technologies to manufacture our EVs, as well as green materials in our electrified vehicles and charging stations.

The Michigan Assembly Plant, for example, which produces the Focus Electric, C-MAX Energi and C-MAX Hybrid, in addition to the standard gas-powered Ford Focus, is powered by one of the largest solar arrays in the state of Michigan. We partnered with DTE Energy to install this solar panel system at the plant. We are also working with DTE Energy to develop a stationary battery energy storage system that will store excess power produced by the solar array until it is needed in the plant. This battery storage system uses electric vehicle batteries that have reached the end of their useful lives in vehicles. This approach provides a second life for vehicle batteries, which reduces waste and maximizes the efficiency of solar power. The Michigan Assembly Plant also uses power generated from the methane released from decaying trash at a nearby landfill, which reduces emissions of this potent greenhouse gas. And the plant uses battery-electric-powered tugs, converted from diesel power, to move vehicles and parts around the plant. The tugs are powered directly from the solar array, and when not in use the remaining energy stored in the tug batteries is discharged into the 750 kW battery bank.

The Michigan Assembly Plant – which produces the Focus Electric, C-MAX Energi, C-MAX Hybrid and gas-powered Ford Focus – is powered by one of the largest solar arrays in the state of Michigan.

Ford is also using green materials in our HEVs, BEVs and PHEVs, as well as many of our other vehicles. For example, our existing HEVs use recycled-content seat fabrics. Since 2011, all of our U.S. vehicles, including our electrified vehicles, have used soy foam. For more information about our use of green materials in vehicles, please see the Sustainable Materials section.

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Improving Electrified Vehicle Affordability

The current cost to make plug-in vehicles is substantially higher than that of conventional vehicles, largely due to the cost of batteries. Depending on the price of electricity and gasoline, however, the energy cost to operate an all-electric car is in the range of 3 to 4 cents per mile, compared to about 8 to 16 cents per mile[1] for a conventional gasoline-powered vehicle. So, lower operating costs can help to offset the higher initial purchase price of electric vehicles (EVs).

To develop next-generation electrification technologies and electrified vehicles, automakers and their suppliers will need to invest billions of dollars. In addition, utilities will need to invest to increase electricity generation and transmission capacity, with generally higher costs for green electricity sources. Governments will also need to invest by encouraging and facilitating the development of technology and infrastructure and providing incentives for consumers to buy EVs. At present, Ford is doing what it can to reduce the costs of manufacturing and operating EVs.

Reducing Vehicle Production Costs

We have planned our electric vehicle strategy based on our highest-volume global platforms, which can help to reduce the costs of electric vehicles by creating economies of scale. For example, the Focus Electric, C-MAX Hybrid and C-MAX Energi plug-in hybrid are all based on our global C-platform, which we expect to underpin 2 million vehicles annually.

We are using best-in-class flexible manufacturing technology in our Michigan Assembly Plant, which produces the Focus Electric, C-MAX Hybrid and C-MAX Energi, as well as the gas-powered Focus. Flexible manufacturing allows us to switch production between different vehicles to meet changing customer demand without retooling our plant or assembly lines – a significant cost reduction. This is important in helping us respond nimbly to a changing market.

Ford is working with a range of battery suppliers and other partners to develop next-generation battery technologies that will help to bring costs down. Please see the Battery Technology section for more information on advanced batteries for EVs.

Reducing Vehicle Operation Costs

The fuel costs of battery electric vehicles (BEVs) are significantly lower than for gasoline-powered vehicles. EVs require less energy to move a given distance, compared to conventional gas-powered vehicles. The average price for residential electricity in the U.S. is about 12 cents per kilowatt-hour. The fuel cost to travel 80 miles in a Focus Electric with a combined fuel economy of 105 MPGe is about $3. Driving 80 miles in a highly fuel-efficient, competitive gasoline-powered vehicle that gets 40 mpg would cost about $8 (assuming $4 per gallon of gasoline) – over three times more than the EV. If drivers use Ford's Value Charging, the cost of traveling 80 miles in the Focus Electric drops even further to just less than $1 to travel 80 miles.

We are taking a range of steps to further reduce the operating costs of EVs to help offset their higher purchase price.

Through Value Charging, for example, we are helping EV owners find the most efficient times to charge their vehicles. This system helps customers reduce their electricity costs by taking advantage of off-peak or other reduced utility rates without a complicated setup process.

The MyFord Touch®-based in-vehicle communications systems on our electric vehicles, described in Living the Electric Lifestyle, also help reduce EV operating costs by enabling drivers to maximize their driving efficiency and in-vehicle energy use.

Our BEVs will also have lower maintenance requirements than gas-powered vehicles. The Focus Electric eliminates more than two-dozen mechanical components that would normally require attention during the life of the vehicle. So, for example, drivers won't have to change oil, oil filters,

fuel filters or spark plugs, or worry about a worn-out muffler or serpentine belt. Based on a regular oil change maintenance schedule, Focus Electric owners will save approximately $500 over the 150,000-mile life of the vehicle on oil change costs alone.

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1. Assuming an energy consumption of about 3 to 4 miles/kWh at 12 cents/kWh for the electric vehicle, and a fuel economy of 40 miles/gallon at $3–5/gallon for the gasoline vehicle.

Battery Technologies

Until recently, hybrid electric vehicles (HEVs) ran on nickel metal hydride batteries, which offer significant improvements over traditional lead-acid batteries. For example, nickel metal hydride batteries deliver twice the power output for the weight (energy density) compared to lead-acid batteries. Nickel metal hydride batteries have worked well in (non-plug-in) hybrid electric vehicles (HEVs), as these batteries are designed to allow for constant discharging and recharging and are not expected to store and provide large amounts of energy. However, they are reaching the end of their advancement potential.

Plug-in hybrid electric vehicles (PHEVs) and pure battery electric vehicles (BEVs) make significant additional demands on battery technology that nickel metal hydride batteries are not equipped to handle. Unlike HEVs, which maintain a narrow state of charge window, PHEV batteries are intended to be depleted to a low level when they are the primary energy source for the vehicle. And BEVs are designed to run solely on battery power. The batteries used in PHEVs and BEVs must function well in a wide range of conditions; tolerate running until nearly depleted and then being fully charged; store and provide a lot of power; last a minimum of 10 years or 150,000 miles; and, ideally, be compact and lightweight. Because nickel metal hydride batteries have significant limitations for such applications, automakers, including Ford, are now offering lithium-ion batteries for current-generation HEVs and for PHEVs and BEVs. These batteries are lighter and smaller than nickel metal hydride batteries. Even so, the technology is still evolving, as discussed below, and costs are still relatively high.

It is also important to have a plan for recycling batteries at the end of their useful lives to minimize the material going to landfill.

Battery Evolution

Battery technology has been evolving. The following table shows how new battery technologies, such as the nickel metal hydride batteries used in previous HEVs and the lithium-ion battery technology in the current generation of electrified vehicles, compare to the traditional 12-volt lead-acid battery.

	Lead-Acid	Nickel Metal Hydride (Ni-MH)	Lithium-Ion (Li-ion)
First commercial use	1859	1989	1991
Current automotive use	Traditional 12-volt batteries	Developed for first-generation hybrid vehicles	Developed for current-generation hybrid electric and battery electric vehicles
Strengths	Long proven in automotive use	Twice the energy for the weight compared to lead-acid; proven robustness	About twice the energy content of Ni-MH and better suited to plug-in electrified vehicle applications; by taking up less space in the vehicle, provides far greater flexibility for automotive designers
Weaknesses	Heavy; its lower energy-to-weight ratio makes it unsuitable for electrified vehicle usage	High cost (four times the cost of lead-acid); limited potential for further development	Expensive until volume production is reached
Specific	30–40	65–70	100–150

Related links

This Report

- Supply Chain
- Water

energy (watt hours per kilogram)			
Recyclability	Excellent	Very good	Very good

Ford's Approach to Advanced Technology Batteries

All of Ford's newest electrified products use lithium-ion batteries, which offer a number of advantages over the nickel metal hydride batteries we used in the past. For example, they are generally 25 to 30 percent smaller and 50 percent lighter, making them easier to package in a vehicle.

The Focus Electric is powered by a lithium-ion battery system that utilizes cooled and heated liquid to regulate battery temperature, extend battery life and maximize driving range. The innovative thermal management technology helps the Focus Electric operate efficiently in a range of ambient temperatures. Advanced thermal management of lithium-ion battery systems is critical to the success of all-electric vehicles, because extreme temperatures can affect performance, reliability and durability.

Ford is also assisting in developing end-of-life recycling infrastructure in the U.S. for nickel metal hydride and lithium-ion batteries, both of which are high-voltage batteries. For example, we are providing educational material on battery removal, transportation and recycling, as well as a call center for end-of-life vehicle dismantlers through the End of Life Vehicle Solutions Corporation (ELVS). (The ELVS, of which Ford is a participating member, was created by the automotive industry to promote the industry's environmental efforts in recyclability, education and outreach, and the proper management of substances of concern.) We are also connecting scrap buyers with dismantlers who have high-voltage batteries to recycle. In addition, Ford is working with DTE Energy to develop stationary energy storage systems from vehicle batteries that have reached the end of their useful life in vehicles. Ford engages with all the parties that handle end-of-life batteries, including customers, local authorities, emergency services (e.g., tow trucks and first responders), dealerships, independent workshops and garages and vehicle recyclers. Customers can recycle their batteries with local recyclers or bring them to any Ford or Lincoln dealer for no-cost recycling.

Supply Chain Issues

As the widespread electrification of automobiles moves closer to reality, a new set of concerns is emerging regarding the environmental and social impacts of extracting and processing key materials needed to make electric vehicles. For example, there are concerns about rare earth metals, which are used in electric motors for vehicles, wind turbines and other advanced technologies; also, a better understanding of mining processes is required.

Significantly accelerating the production of electric vehicles is likely to require the use of much greater quantities of lithium and rare earth metals. Currently, production of these resources is concentrated in a few countries, including Chile, Bolivia and China, which has led to questions about the adequacy of the supply of these resources and the potential for rising and volatile prices as demand puts pressure on existing supplies. In addition, there are concerns about geopolitical risks posed by the limited availability of these materials. Could we be trading dependence on one limited resource (petroleum) for another? Attention is also focusing on the possibility of risks such as bribery and corruption and the potential for environmental and human rights abuses. Finally, the use of water in the production of these materials needs to be considered.

We take these concerns very seriously. With scientists at the University of Michigan, we have conducted and published a study of lithium availability and demand. We found that there are sufficient resources of lithium to supply a large-scale global fleet of electric vehicles through at least the year 2100.[1] We are now conducting a study of rare earth element availability and demand with scientists at the Massachusetts Institute of Technology. Ford generally does not purchase raw materials such as lithium and rare earth metals directly – they are purchased by our suppliers (or their suppliers) and provided to us in parts for our vehicles. As described in the Supply Chain section of this report, our contracts with suppliers require compliance with the legal requirements of Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility and the adoption of a certified environmental management system (ISO 14001). We are working in our supply chain to build the capability of our suppliers to provide sound working conditions in their operations, and we assess compliance with our Code in target markets. We ask the suppliers we work with to take similar steps with their suppliers. We are also working cooperatively with other automakers to extend this approach through the entire automotive supply chain.

As part of our water strategy, we are working with colleagues at the Georgia Institute of Technology to evaluate the water requirements and impacts of powering vehicles with conventional fuels, biofuels and electricity. This work includes a study of the water requirements of lithium extraction and processing, which, based on our understanding of the extraction of lithium from brines in arid areas, we anticipate will be low.

We will continue to monitor and assess these issues for their potential impact on our electrification strategy and our sustainability commitments.

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1. P. Gruber, P. Medina, S. Kesler, G. Keoleian, M.P. Everson, T.J. Wallington, Global Lithium Availability: A Constraint for Electric Vehicles?, J. Industrial Ecology, 15, 760 (2011).

Collaborating with Partners

Clearly, electric vehicles (EVs) will have an impact on electric utilities and on consumers' use of electricity in their homes. We are working with utilities and municipalities to address impacts of EVs on the electrical grid. We are also working with other industry partners to maximize the efficiency and benefits of charging EVs for vehicle owners.

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Working with Utilities and Municipalities

If EVs are charged during times of peak electricity demand, they may stress the current grid and require the construction of additional electricity supply. Furthermore, charging vehicles during peak demand would significantly reduce the operating cost benefits expected from electric vehicles. To maximize recharging efficiency and minimize stress to the grid, "smart grid" technology that allows communication between recharging vehicles and the electrical grid will be required. Automakers and utilities must continue to work together to develop this "smart" vehicle-to-grid communication system. Overcoming these challenges will require significant collaboration between automakers, electric vehicle supply equipment manufacturers, electric utilities, regulatory agencies and legislators.

Because utilities and automakers have not had to work together in the past, effective collaboration requires developing new relationships and learning about each other's business and regulatory challenges. For example, utilities and automakers have very different business models: utilities operate regionally and have little to no direct competition within their markets, while automakers operate and compete globally. Furthermore, automakers are primarily regulated at the national level, while utilities face more local and state regulations, which increases the difficulty of establishing a national strategy for vehicle-to-grid interaction. It will be important for automakers and utilities to understand and address these kinds of differences as they work together on vehicle electrification issues.

In 2007, Ford was awarded $10 million by the U.S. Department of Energy as part of an effort to identify a sustainable path toward the successful mass production of plug-in hybrid electric vehicles. This included collaboration with the Electric Power Research Institute (EPRI) and several utility partners in the evaluation of a demonstration plug-in hybrid prototype fleet. Real-world driving and charging performance was evaluated in different geographical locations. This demonstration was completed in December 2012, having successfully logged over 800,000 miles. Many of the results from this demonstration have been made publically available through collaboration with Idaho National Laboratories (INL). The INL has analyzed the vehicle data collected from nearly 20,000 charge events and 50,000 drive events and created summary reports which are available on the INL advanced vehicle technologies website.

All plug-in hybrid electric vehicles in this demonstration fleet were equipped with vehicle-to-"smart-meter" communication capability. Working with a collaborating utility, EPRI conducted vehicle-to-grid connectivity testing and successfully demonstrated that vehicle-to-smart-meter communications are feasible. Lessons learned from this testing, as well as from the entire demonstration, helped support the production introduction of our two plug-in hybrid electric vehicles: the Ford C-MAX Energi and the Ford Fusion Energi.

We are also working with utilities, municipalities and states across the country to develop and facilitate the use of EV implementation best practices. Some of the key issues we are working on with local utilities and municipalities include the following:

- Time-of-use electricity rates: We are encouraging utilities to adopt a "time-of-use" rate

structure, which would enable them to charge different rates at different times of the day based on overall electricity demand. Under a time-of-use structure, electricity rates would be lower at night when there is lower demand on the electrical grid. Since most EVs charge at night, this increases the benefits of electrified vehicles for consumers. For example, a 20-mile trip on electricity at national rates of 0.12 cents/kWh costs about $1. If a customer is able to switch to a time-of-use rate, this trip could cost as little as 50 cents. Time-of-use rates also help utilities by giving customers an incentive to charge at times when electrical demand is already low, which helps to balance out utilities' electrical loads.

- Maximizing the publicly accessible recharging infrastructure: We are working with municipalities and utilities to develop additional public recharging stations and to encourage a thoughtful and holistic approach to planning for publicly accessible charging. PlugShare, a website that tracks publically accessible charging stations, currently includes at least 12,000 public charge stations in cities throughout the U.S. and Canada, up from about 5,000 a few years ago. This is an important step in fostering electrified vehicle use. However, the placement and design of publicly accessible charging stations requires careful consideration to maximize their usefulness to EV drivers. We are endorsing a holistic urban-planning approach to charging station development in which local officials actively plan the locations for publicly accessible EV charging based on traffic patterns and the locations of other charging stations. This kind of approach will result in charging locations that are used more often and will make more-efficient use of investment dollars. We are also encouraging standard rules and signage for public refueling infrastructure that would tell drivers what type of charging is available, the hours when EVs can use charging stations, the length of time an EV can remain plugged in and how rules for charging stations are enforced.

- Standards for private, third-party charging stations and the resale of electricity: In many cases, publicly available refueling stations will be installed and run by private businesses, such as gas stations and restaurants. In most states, when a third party resells their electricity, as they would to an EV driver, they are considered a regulated utility and face the same stringent regulations a utility must follow. We are working with states to encourage updating regulations so that reselling electricity for transportation would not be subject to utility-like regulations. This will encourage the development of more publicly accessible recharging stations.

- Home EV charging station permitting process: Homeowners are required to get a permit from their municipality and/or utility to install a home EV charging station. Historically this process can take more than two weeks. We have been working with utilities and municipalities to encourage modifications to streamline the permitting process to make it easier and shorter for consumers.

- Promoting EV incentives: Through our work with cities and utilities, we have identified a range of actions that will help consumers make the transition to electrified vehicles – for example, infrastructure incentives to offset a portion of customer costs for hardware and installation.

- Building codes for new construction: We are working with municipalities to develop codes for new building construction that would make them "EV ready," with best practices such as wiring for EV chargers.

We are working on these issues in a variety of ways, including with utilities and municipalities in key EV markets across the U.S. We are also serving in a formal advisory role to utilities in several states. Ford is also an active member of the Electric Drive Transportation Association, an industry group that is working to implement EVs in the U.S. And, we are testifying before state legislatures around the country to endorse legislation that will facilitate the successful implementation of EVs.

Our collaborations with utilities and municipalities are yielding key lessons that we are incorporating into our continued efforts to make electrified vehicles successful in the real world. Some of the key learnings so far include the following:

- Electric vehicles provide additional impetus to develop smart communication systems between vehicles and grids. These systems will allow the consumer to know if and when lower electricity rates are available and help prevent additional loads on the infrastructure. Smart communication systems could alleviate the need for expensive infrastructure upgrades, the costs of which may be passed back to customers by utilities (e.g., if a transformer needs to be upgraded).

- Smart vehicle charging will require that utilities and automakers develop a common standard for vehicle-to-grid and grid-to-home meter communications. Currently, utilities tend to operate regionally, but electric vehicles will increase the need for common national and even international standards. We have worked to develop a common charging standard in the U.S., and we are now focused on fostering the development of an internationally common charging standard.

- Widespread use of electric vehicles will likely require that vehicle power consumption be

measured separately from home electricity use, requiring either additional meters or smart meters. In addition, the pooling of electrified vehicles in a particular region may require upgrades to the transformers and/or substations that form the electrical grid in that area. Utilities are already installing smart meters at a rapid pace: As of early 2013 approximately 42 million smart meters had been installed in the U.S., up from about 36 million in spring 2012. Currently about 30 percent of the 130 million homes in the U.S. have smart meters; utilities in 16 states have fully deployed the technology.

- There are interesting possibilities for vehicle-to-grid and vehicle-to-home power flow. However, there are also significant challenges to making these possibilities a reality. For example, technical, safety, codes/standards compliance, legal, robustness and business case issues need further study prior to commercialization.

- Vehicle owners will likely want to be able to charge their vehicles at any geographic location and – in those cases where another payment method isn't used – have the cost applied to their home energy bill. In addition, vehicle identification and home meter association must be seamless for the customer. This kind of mobile or remote billing for vehicle charging services will require a paradigm shift in the utility industry's current billing processes and tools.

- Automakers and utilities both benefit from working together on outreach to local, state and federal regulators and legislators. Ford and our utility partners are already working with legislators and regulators on national standards for vehicle charging infrastructure, and incentives and strategies to bring costs down.

- Utilities and automakers need to work together to educate consumers about the differences between electric vehicles and traditional vehicles so that consumers understand how to make the most of electric vehicles and charging infrastructure.

We are also working to develop common charging technology for electric vehicles so that all electric vehicles will be able to use a common plug-in charging system for both AC and DC fast charging. In North America, the Society of Automotive Engineers, with Ford's participation, successfully developed and approved a standard charge connector and communication protocol, enabling all plug-in vehicles to use common charge points. This will be a key enabler for adoption in North America; the same connector is under consideration in other global markets.

In January 2013, we signed onto the U.S. Department of Energy's pledge to increase vehicle charging infrastructure available in workplaces across the country. The Workplace Charging Challenge is a collaborative effort to increase the number of U.S. employers offering workplace charging by tenfold in the next five years. To fulfill this pledge, Ford is assessing our workforce electrified vehicle charging demands, and developing and implementing a plan to install workplace charging infrastructure for at least one major worksite location. By installing stations for use by employees and visitors to supplement, not replace, their home charging, this program will help EV owners maximize their miles driven and increase the usability of their vehicles.

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Working with Other Industries through the MyEnergi Lifestyle Project

The continued adoption of plug-in vehicles that share the same energy source (electricity) as the home creates a unique convergence between the transportation and residential sectors. In 2013 we launched the MyEnergi Lifestyle project to demonstrate how plug-in vehicle technology can be applied in conjunction with efficient household appliances and renewable energy generation for an energy- and money-saving lifestyle.

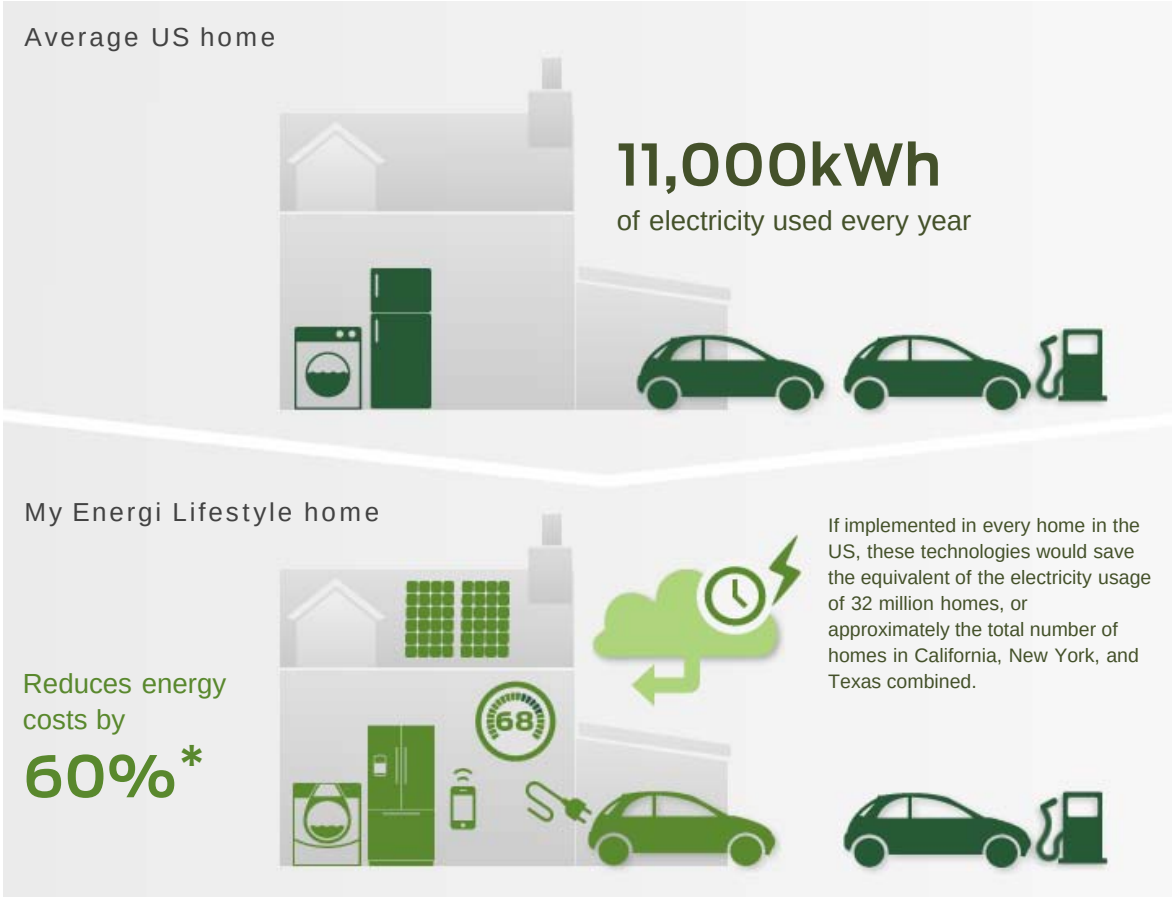
The Ford-led project, which currently includes Whirlpool, Eaton, SunPower and the Georgia Institute of Technology, shows that more efficient and coordinated use of home electricity for appliances and electric vehicles can, on an annual basis, reduce a home's electricity use by up to 55 percent, reduce users' electricity bills by up to 60 percent, and reduce electricity-based home carbon dioxide emissions by up to 56 percent.

These results are based on computer simulation of an average American home developed in partnership with the Georgia Institute of Technology. The model compares two scenarios: (1) an average home with appliances from 1995, two gasoline vehicles with a fuel economy of 25 miles per gallon each, no solar power, and no intentional off-peak electricity usage, and (2) a home with 5 kW of SunPower solar panels installed on the roof, one gasoline vehicle replaced by a Ford Focus Electric, all appliances replaced by 2012 Whirlpool appliances (including refrigerator, hot water heater, dishwasher and clothes washer/dryer), and a shift in home energy usage (including EV charging) to take advantage of time-of-use (Value Charging) reduced rates.

These improvements would be hugely significant if implemented on a broader scale. If every home in the U.S. were to implement these energy-saving technologies, it would be equivalent to eliminating the electricity usage of more than 32 million homes (or all the homes in California, New York state and Texas combined).

My Energi Lifestyle

New technology is enabling American families to reduce their electricity bills and CO_2 footprint by integrating a plug-in vehicle, energy-efficient appliances, renewable energy sources and cloud computing that takes advantage of lower off-peak electricity rates.



* Comparing 1995 appliances and a 25 mpg vehicle to 2012 appliances and a Ford C-MAX Energi plug-in hybrid vehicle with value charging.

The next step in the project is to apply these changes to real-world homes, which we will choose through a still-to-be determined contest. The real-world homes will receive a package of appliance upgrades, renewable energy installations, other energy efficiency retrofits, and Ford Focus Electric and C-MAX Energi vehicles to parallel the changes made in our computer simulations of an average home.

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Greening Our Operations

We have adopted a rigorous and holistic approach to reducing the overall environmental impacts of our manufacturing facilities. We have established global facility environmental targets that address the range of our environmental impacts, including energy use, emissions, water use and waste generation.

Each Ford facility has a comprehensive set of environmental targets and uses a detailed scorecard to report against these targets, so that we can track and accelerate improvements. Progress toward the targets is reviewed throughout the year by senior management at regular Business Plan Review meetings. In addition, these targets become part of the performance review metrics for every plant manager and regional manufacturing manager, as well as others in the management hierarchy up to the executive vice president of manufacturing and labor affairs. These targets include reducing greenhouse gas emissions from our manufacturing facilities by 30 percent on a per-vehicle basis from 2010 to 2025 and reducing average energy consumption per vehicle globally by 25 percent from 2011 to 2016. Our targets and progress are shown in the Goals, Commitments and Status chart.

To facilitate performance tracking, we launched the Global Emissions Manager database (GEM) in 2007. This industry-leading database provides a globally consistent approach for measuring and monitoring environmental data, which helps us track and improve our efforts to reduce water consumption, energy use, carbon-dioxide (CO_2) emissions and the amount of waste sent to landfill. GEM also provides a library of environmental regulations relevant to each plant, significantly increasing the efficiency of tracking and meeting those regulations.

This section reports on our facilities' environmental performance, including operational energy use and greenhouse gas emissions, non-CO_2 facilities-related emissions (including volatile organic compounds), water use, waste management, sustainable land use and biodiversity, compliance and remediation.

Related links

This Report

- Ford's Goals, Commitments and Status

Operational Energy and Greenhouse Gas Emissions

Ford has been a leader in facilities-related greenhouse gas (GHG) and energy-use reductions, public reporting of our GHG emissions and participation in GHG-reduction and -trading programs.

In 2010, we adopted a goal to reduce our facility carbon-dioxide (CO_2) emissions by 30 percent by 2025 on a per-vehicle basis. This CO_2 goal, which is also based on our stabilization commitment, complements our longstanding facility energy-use reduction targets. The U.S. Environmental Protection Agency (EPA) awarded Ford a Goal Setting Certificate for this strategy at its inaugural Climate Leadership Awards Ceremony.

GHG Reporting Initiatives

- Ford is officially "Climate Registered" after publishing its complete North American carbon inventory since 2010 with The Climate Registry (TCR), a voluntary carbon-disclosure initiative that links several state-sponsored GHG emissions-reporting efforts, including the California Climate Action Registry and the Eastern Climate Registry. Ford was the first automaker to join TCR and is one of only two automakers to be officially Climate Registered. As TCR members, we must demonstrate environmental stewardship by voluntarily committing to measure, independently verify and publicly report GHG emissions on an annual basis using the TCR's General Reporting Protocol.
- We were the first automaker to participate in GHG reporting initiatives in China, Australia, the Philippines and Mexico. In Mexico, Ford's first report was used as the template for subsequent reporting in that program. Ford of Mexico's GHG report has also been third-party verified, and was recognized by Mexican authorities for this achievement.
- We voluntarily report GHG emissions in the U.S., Canada, Argentina, Australia, Brazil, China, Mexico, Taiwan and Venezuela.
- Since 2005, GHG emissions from our European manufacturing facilities have been regulated through the EU Emissions Trading Scheme. These regulations apply to five Ford facilities in the UK, Belgium and Spain.
- In the U.S., the EPA issued a final rule on September 22, 2009, establishing a national GHG reporting system. Facilities with production processes that fall into certain industrial source categories, or that contain boilers and process heaters and emit 25,000 or more metric tons per year of GHGs, are required to submit annual GHG emission reports to the EPA. Many of our facilities in the U.S. are subject to the reporting requirements and submit reports as required.

Our participation in these reporting, emissions-reduction and trading schemes has played an important role in accelerating our facilities' GHG emissions-reduction activities.

Performance

In 2012, Ford established a five-year objective to improve our operational energy use per vehicle globally by 25 percent by the end of 2016 based on a 2011 baseline normalized for weather and production. In 2012, we improved global energy efficiency by 6.4 percent against a 2011 year baseline normalized for weather and production levels.

We reduced our overall facilities-related CO_2 emissions by approximately 47 percent, or 4.65 million metric tons, from 2000 to 2012. During this same period, we reduced facilities-related CO_2 emissions per vehicle by 37 percent. Our total CO_2 emissions increased from 2011 to 2012 by 1 percent, while CO_2 emissions per vehicle decreased by 1 percent during that period.[1]

The Company has met its commitment to reduce U.S. facility emissions by 10 percent per vehicle produced between 2002 and 2012, as part of an Alliance of Automobile Manufacturers program.

Please see the Climate Change and the Environment data section for more detail.

Related links

This Report

- Climate Change

Energy Management Initiatives

Ford has achieved these efficiency improvements and energy-use reductions using the variety of initiatives described in this section. We regularly look for new technologies, approaches to the identification and definition of potential projects, funding mechanisms and means to implement plant energy-efficiency projects.

Since 2007, we have been using a utility metering and monitoring system to collect electricity and natural gas consumption data at the plant level for all Ford plants in North America. We are currently expanding this system, called the Global Departmental Level Metering (GDLM) initiative, globally and working to provide more detailed information down to the department level. We use this near-real-time information to create energy-use profiles for plants and to improve decisions about nonproduction shutdowns and load shedding, which involves shutting down certain prearranged electric loads or devices when we reach an upper threshold of electric usage. We are also upgrading and commonizing the Building Management Systems we use at our facilities. These information management initiatives will provide common reporting tools linked with production and other data sets, and with facility maintenance and control systems. These efforts will greatly improve the amount of energy data we have and the speed and quality of our energy analyses, which will help us identify energy-reduction opportunities more effectively and reduce the time required to make system changes.

We are also continuing to roll out an Energy Management Operating System (EMOS), which is aligned with our Ford Production System (FPS) and ISO 14000/50001 principles. The EMOS leverages existing lean manufacturing principles, incorporates Plan-Do-Check-Act (PDCA) protocols and uses Six Sigma tools. We developed our EMOS using a cross-functional approach that includes multiple disciplines and all operating regions of the Company. The EMOS is our mechanism for integrating energy-efficient principles into the facility design, manufacturing/engineering processes, and operations of Ford Manufacturing, Office and Engineering facilities. The system provides a common and global structure to support and maintain energy-reduction changes, to achieve the corporate goal of improving global energy use per vehicle by 25 percent between 2011 and 2016.

The EMOS is divided into four major sections:

- Plant Energy Teams – primary engagement with facilities and occupants to effect change
- Facility Changes – planning for the future (both facility and process) and getting the standards embedded into future product/project plans
- Data Management – ensure robust data for reporting and analysis
- Energy Supply and Quality – ensure reliable and low cost energy

We are currently rolling out the EMOS as part of our expanded FPS, including establishing a standardized format for Plant Energy Team meetings, Plant Energy Roadmaps, Energy Health Assessments and Energy Reporting.

In North America, Ford continues to use energy performance contracting as a financing tool to upgrade and replace infrastructure at its plants, commercial buildings and research facilities. Through these contracts, Ford partners with suppliers to replace inefficient equipment, funding the capital investment over time through energy savings. Projects have been implemented to upgrade lighting systems, paint-booth process equipment and compressed air systems, and to significantly reduce the use of steam in our manufacturing facilities. We are also expanding the use of performance contracting to global facilities using global supplier partners to accomplish the 25 percent energy-efficiency improvement objective.

In 2012, we upgraded the lighting at several of our commercial, research and manufacturing facilities through “Mega Lighting” performance contracts. These upgrades included replacing old lighting technologies with high-efficiency (T8 and T5H) fluorescent lighting. As a result, we have reduced annual energy consumption at these buildings by 11.5 million kWh. We are developing other “Mega Lighting” projects for eight additional manufacturing sites, which we predict will reduce our annual electricity consumption by another 5 million kWh. We are also working to identify other “Mega” type projects to leverage single common actions such as lighting upgrades, compressor controls, steam conversion and enhanced Building Management Systems, in partnership with our global performance contracting partners.

Since 2000, Ford has invested more than $246 million in plant and facility energy-efficiency upgrades. In 2012 alone, we invested more than $20 million in energy-efficiency or related upgrades to our global manufacturing base. We are working across divisions and regions to ensure that energy efficiency is being addressed in our daily operations and incorporated into the manufacturing processes and facilities, as part of our future vehicle program plans.

We are continuing to replicate Ford’s state-of-the-art “Three-Wet” paint process. This technology is called “Three-Wet” because the advanced chemical composition of the paint materials used allows for the three layers of paint – primer, base coat and clear coat – to be

applied while each layer is still wet, which eliminates the stand-alone primer application and dedicated oven required in the conventional painting process. The Three-Wet process also saves the electricity used by the blowers that are typically needed to circulate massive volumes of air through paint booths, and reduces the amount of natural gas needed to heat the air and ovens. As a result, Three-Wet painting reduces CO_2 emissions by 15 to 25 percent and volatile organic compound emissions by 10 percent compared to either conventional high-solids solvent-borne or waterborne systems.

In addition to these environmental benefits, this process maintains industry-leading quality and reduces costs. For example, Three-Wet reduces paint processing time by 20 to 25 percent, which correlates to a significant cost reduction. The paint formulation contains new polymers and other additives to prevent running and sagging during the application and curing processes. Ford's laboratory tests show that this high-solids, solvent-borne paint provides better long-term resistance to chips and scratches than waterborne paint systems. In short, the process delivers reduced costs per vehicle, reduced CO_2, improved energy efficiency and improved quality.

Ford initially implemented the Three-Wet process at our Ohio Assembly Plant 2007 in the U.S. Since then, we have expanded implementation across our global operations when we build new facilities or refurbish existing ones.

> We have implemented the Three-Wet paint process at facilities in the United States, India, Romania, Mexico, China and Thailand. We now use the Three-Wet system at eight of our facilities globally and are expanding it to an additional four plants (two in North America, one in China and one in Spain). Three-Wet conversion will be considered for plant refurbishment actions being planned in line with the corporate business plan.

We are continuing implementation of a new parts-washing system developed in partnership with our supplier, ABB Robotics. Conventional parts-washing systems remove dirt chemically by spraying parts with high volumes of water and detergent at low pressure. Our new standard system, in contrast, cleans parts mechanically by moving them in front of specialized high-pressure nozzles with a robotic arm. This new system represents a significant leap forward in energy efficiency that also improves quality, flexibility, productivity and cost because it uses a smaller pump and lower operating temperatures. We are now using this technology as standard for all engine and transmission final wash applications globally, ensuring that the energy and cost savings will be realized by all future vehicle programs.

We are also continuing to refine our Paint Emissions Concentrator (PEC) system (formerly referred to as "fumes to fuel,") which reduces the CO_2 emissions associated with our paint shop emissions-treatment process. In traditional paint shop emissions treatment, the volatile organic compound (VOC) emissions from solvent-based paints are captured and destroyed in a regenerative thermal oxidizer using natural gas as a fuel. Our PEC technology concentrates VOC emissions from the painting process by approximately 1,500:1. In this super-concentrated state, the VOCs can be burned as a fuel source, significantly reducing the amount of natural gas necessary to destroy them. By reducing the need for natural gas, the PEC system has the potential to reduce CO_2 emissions by 70 to 80 percent, compared to traditional abatement equipment. We are also investigating opportunities to reform super-concentrated VOCs into hydrogen, which can then be used as a fuel source for a fuel cell. For more information on the PEC technology, please see the Facilities-Related Emissions section.

Other efforts to improve the energy efficiency of Ford's plant operations include:

- aggressively curtailing energy use during nonproduction periods,
- updating facility lighting systems by replacing inefficient high-intensity discharge fixtures with up-to-date fluorescent lights and control systems, and
- installing automated control systems on plant powerhouses and wastewater treatment equipment to increase energy and process efficiency.

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1. Total CO_2 emissions from facilities increased slightly from 2011 to 2012 due to increases in production. However, CO_2 emissions per vehicle decreased slightly, reflecting greater efficiency.

Renewable Energy

Ford is actively involved in the installation, demonstration and development of alternative sources of energy.

Ford's Dagenham Diesel Engine Assembly line in the UK was the first automotive plant in the world to obtain all of its electrical power needs from two on-site wind turbines, which have been in operation since 2004. A third two-megawatt wind turbine was installed in 2011.

A few miles from Dagenham, Ford's Dunton Technical Centre is also powered by electricity from renewable sources. Since March 2009, electric power on the 270-acre site, which is home to a team of approximately 3,000 engineers, has been purchased from 100 percent renewable sources. The majority of the electricity, supplied by GDF, is sourced from a combination of hydro, wind and waste-to-energy generation, and replaces energy from traditional sources that would have produced an estimated 35,000 metric tons of carbon-dioxide (CO_2) emissions annually.

Since 2008, we have been sourcing renewable electricity to cover the full electric-power demand of our manufacturing and engineering facilities at our Cologne plant in Germany. This includes the electricity needed for the assembly of the Ford Fiesta models at the plant. Through this initiative, the Company has reduced its CO_2 emissions by 190,000 metric tons per year.

In Wales, Ford's Bridgend Engine Plant was the first site retrofitted with one of the largest integrated, grid-connected solar/photovoltaic installations at a car manufacturing plant in Europe.

In North America, examples of installed renewable-energy technologies include a photovoltaic array and solar thermal collector at the Ford Rouge Visitors Center. The adjacent Dearborn Truck Plant has a "living roof" system, which uses a thick carpet of plants to reduce the need for heating and cooling, while also absorbing rainwater. At the Lima Engine Plant in Lima, Ohio, a geothermal system provides process cooling for plant operations as well as air tempering for employee comfort. This system uses naturally cooled 40°F water from two abandoned limestone quarries located on the plant site. The installation cost was comparable to that of the traditional chiller and cooling tower design that it replaced. This award-winning project eliminates the emission of 4,300 metric tons of CO_2 each year. At our Michigan Assembly Plant we partnered with DTE Energy and the state of Michigan to build a solar photovoltaic array to provide power to the plant and to build an energy storage system to store energy produced by the solar array until it is needed. The energy is stored in a large battery system that in turn recharges electric material-handling vehicles used on site. These vehicles were converted from diesel engines to electric vehicles to move parts between buildings at the site. The Michigan Assembly Plant also uses methane released from decaying trash at a nearby landfill to heat one of the buildings on site, which reduces emissions of this potent greenhouse gas. In 2012, we installed a solar-powered trash compactor at our Michigan Proving Grounds in Romeo, Michigan, which compresses waste more efficiently than the previous one. The resulting compacted waste is sent to an incinerator where it is converted into power for local residents. Please see the Waste section for more information on this technology.

In India, we have been using solar thermal heating at the Chennai plant to heat water for cooking in the main cafeteria since 2011. Using this system, sterilized water is pumped through thermal solar panels and then taken to the cafeteria for cooking at approximately 50°C higher than water that was previously used in cooking boilers. This system has reduced boiler diesel consumption by approximately 420 liters per day. The system is expected to pay itself back in four years.

Non-CO_2, Facility-Related Emissions

We report on a variety of non-carbon-dioxide (CO_2) facility emissions in the Climate Change and the Environment Data section. In this section, we discuss how we are reducing emissions of volatile organic compounds (VOCs) at our facilities. VOCs are a significant aspect of Ford's manufacturing operations due to the size and number of paint shops that we operate.

Since 2000, Ford's North American operations have cut VOC emissions associated with the painting process (by far our largest source of VOC emissions) by more than 35 percent. In 2012, these operations emitted 18 grams of VOCs per square meter of surface coated, down from 20 grams in 2011. Because the control equipment used to reduce VOC emissions consumes significant amounts of energy, we have worked to identify innovative approaches to painting that meet cost, quality and production goals while allowing us to reduce energy use significantly and maintain environmental compliance.

Ford developed a Paint Emissions Concentrator (PEC) technology (formerly referred to as "fumes-to-fuel"), which uses a fluidized bed adsorber and desorber and condensation equipment to collect and concentrate solvent emissions into liquid form. The PEC system was first developed at a research facility we built at our assembly plant in Oakville, Canada, in 2008 with support from the Canadian government. The site contains a production-scale version of the equipment. The intent of the technology is to collect a portion of the VOCs from the spray-booth exhaust, super-concentrate them in the paint emissions concentrator, then condense and store them on site for use as fuel source. In this way, the solvent emissions are recycled back into the production process and overall VOC emissions are reduced. In 2012, the PEC at our Oakville facility continued to run and generate solvent, allowing for the capture and recycling of more than 17,000 gallons of solvent material.

Our PEC technology has the potential to reduce CO_2 emissions by 70 to 80 percent compared to traditional abatement equipment. PEC technology coupled with the recycling of collected solvents also has the potential to eliminate nitrogen-oxide emissions compared to conventional abatement approaches, which involve the oxidation of the solvents. There is also the potential to reform the captured VOCs into hydrogen, which could be used as a fuel for fuel cells. We are working with a Canadian university to drive the development of the PEC technology and evaluate the potential for producing and using hydrogen fuel.

We are also continuing to use an innovative new windshield-attachment process that reduces VOC emissions. The typical method to attach a windshield – used currently at Ford and throughout the industry – is to first wipe the glass with a solvent cleaner, and then apply a primer and adhesive to secure the windshield to the vehicle. However, this method releases a small amount of highly undesirable solvent emissions. Ford's new patented technology eliminates the use of the solvents that contain VOCs and simplifies the manufacturing process by reducing steps, such as wiping the glass clean. Ford is working with Plasmatreat, an Illinois-based supplier, to implement the technology. The technology will be offered worldwide, first in equipment that Plasmatreat plans to sell or lease to Ford, then to other automakers, the heavy truck market, the motorhome and bus industries and other customers who want to use it.

Finally, we are reducing VOC emissions with an innovative paint process called "Three-Wet." This process reduces VOC emissions by 10 percent and has other environmental, financial and quality benefits. For more information on Three-Wet, please see the Operational Energy and Greenhouse Gas Emissions section.

Water Use

Water conservation is an integral part of Ford's sustainability strategy. Many vehicle-manufacturing processes require water, and water is used at every point in our supply chain. Our water-related risks come not only from being a direct water consumer, but from being a large purchaser of water-intensive materials, parts and components. Because this issue has increased in importance and focus for Ford in recent years, we now discuss it in its own separate Water section.

Related links

This Report

» Water

Waste Management

Ford's environmental goals include reducing the amount and toxicity of manufacturing-related wastes and ultimately eliminating the disposal of waste in landfills. Manufacturing by-products include both hazardous and nonhazardous wastes. In 2013, we introduced a new plan to reduce waste sent to landfill by 40 percent on a per-vehicle basis between 2011 and 2016 globally. We have already reduced global per-vehicle waste to landfill by 40 percent from 2007 to 2011. In 2012, Ford facilities globally sent approximately 50.6 metric tons of waste to landfill, a reduction of 17.4 percent from 2011.

In 2012, Ford facilities globally generated approximately 42,000 metric tons of hazardous waste, which is comparable to our 2011 hazardous waste-generation levels. We reduced hazardous waste on a per-vehicle basis by 2.6 percent compared to 2011 and by 19.6 percent over the last five years. Ford has chosen to target eliminating the landfill of hazardous waste first, because this provides the quickest and most cost-effective benefits to human health and the environment.

Ford's new five-year global waste reduction plan details how the company will lessen its environmental impact

5 Key Actions

Invest
Continue investing in new technologies that minimize waste

Identify
Identify the five largest volume sources of waste- to-landfill at each facility

Partner
Partner with suppliers to increase use of eco-friendly packaging

Standardize
Standardize how waste is tracked and sorted at each point

Enable
Enable local plants to affect waste management change

Current waste mix

- Wastewater sludge
- Recovered paint solids
- Packaging waste
- Used oils and waste solvent
- Grinding swarf (metallic particles, abrasives and oils)
- Other wastes

Fun fact

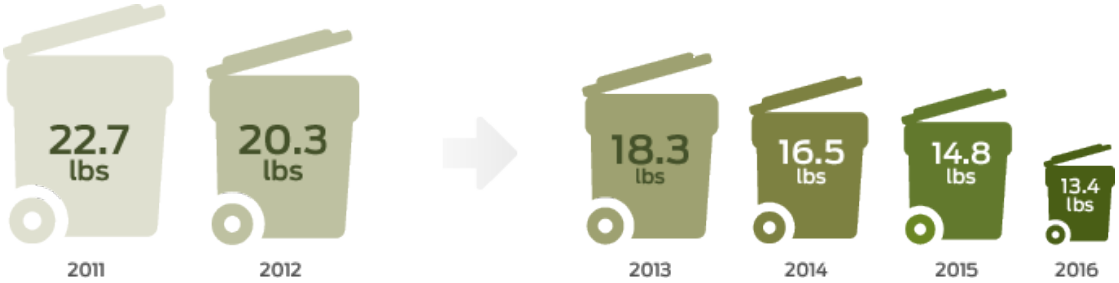
Van Dyke Transmission became a zero waste-to-landfill plant, helping cut the amount of waste-to-landfill generated per vehicle globally to 20.3 pounds in 2012

Progress

Ford cut the amount of waste-to-landfill generated per vehicle globally from 38 pounds in 2007 to 22.7 pounds in 2011

Goal

By 2016, Ford will reduce pounds of waste-to-landfill generated per vehicle globally to 13.4 pounds



We will reach our new waste-reduction goal and continue to build on our past success in waste reduction through many programs, including:

- Identifying the five largest-volume waste-to-landfill streams at each plant, developing plans to reduce each and tracking progress
- Minimizing waste by leveraging the Ford production system – a continuously improving, flexible and disciplined common global production system that encompasses a set of principles and processes to drive lean manufacturing
- Improving waste-sorting procedures to make recycling and reuse easier
- Investing in new technologies that minimize waste, such as dry-machining
- Expanding programs that deal with managing specific kinds of waste, such as metallic particles from the grinding process and paint sludge

The following Ford facilities have achieved zero waste to landfill:

- JMC Transit
- Chennai Assembly
- Lio Ho Assembly
- Genk Assembly
- Cologne Assembly
- Saarlouis Assembly
- Essex Engine
- Van Dyke Transmission
- Cologne Engine
- Cologne Die Cast
- Cologne Catarko Forging
- Chennai Engine
- JMC Engine
- Windsor Engine
- Ford Thailand Manufacturing

Some other successes of our waste-reduction efforts in 2012 include the following:

- We have recycled 710 tons of Recovered Paint Solids (RPS) from the Ford Flat Rock Assembly Plant in Flat Rock, Michigan, the Ford Michigan Assembly Plant in Wayne, Michigan, and the Chicago Assembly Plant in Chicago, Illinois, since early 2010. An estimated 710,000 KWh of energy – enough energy to power 87 residential homes for a year – were produced as a direct result of this program. The RPS replaced approximately 426 tons of coal at DTE, a local energy company.
- Our Broadmeadows Assembly Plant achieved a 35 percent decrease in waste to landfill, in part through recycling wastewater treatment plant “filter cake” and phosphate sludge.
- Our Cuautitlan Assembly Plant achieved a 59 percent decrease in waste to landfill in part by implementing an aggressive program for the identification, segregation and recovery of different plastic wastes; 100 percent recycling of cardboard; and changing other waste streams from landfill to co-processing disposal.
- Our Kentucky Truck Plant achieved a 22 percent decrease in waste to landfill in part by implementing a single-stream recycling program that resulted in almost 1 million pounds of recyclables being diverted from landfill disposal.
- Our Lima Engine Plant achieved a 55 percent decrease in waste to landfill in part by recycling eight-foot-long, 350-pound fabric coolant filters.
- Our Livonia Transmission Plant achieved a 74 percent decrease in waste to landfill in part by disposing of some waste through waste-to-energy programs.
- Our Pacheco Assembly Plant achieved a 78 percent decrease in waste to landfill by implementing improved waste segregation methods.
- Our Camacari Plant achieved a 44 percent decrease in waste to landfill, and 100 percent

of organic waste is now composted.

Sustainable Land Use and Biodiversity

Our activities have the potential to affect land use, nature and biodiversity, directly and indirectly. Our real estate portfolio includes properties for manufacturing and office use. The construction and operation of these facilities have direct impacts on land.

Ford's most significant potential impacts on land and biodiversity are indirect, occurring elsewhere in our value chain or arising from the use of our vehicles. Indirect impacts include the extraction of raw materials to make vehicle parts, habitat fragmentation from road construction, localized pollution from vehicles and the potential effects of climate change on biodiversity.

Many of our facilities have taken steps to improve biodiversity and wildlife habitat on their land, as follows.

Sustainable Landscapes

A highly visible example of Ford's commitment to sustainability can be seen on more than 70 acres of Ford-owned land throughout southeast Michigan, which is adorned with sunflowers and native prairie plantings. These plantings provide habitat for wildlife such as white-tailed deer, red fox, wild turkeys and coyote. All of these species have been spotted at Ford World Headquarters, which has about six acres of native prairie. These plantings also reduce mowing and fertilization costs. By replacing what otherwise would be traditional turf grass, the Company saves approximately 30 percent on the costs of labor, gas and fertilizer. We also use native plants in our landscaping whenever possible, as they are better adapted to local conditions and provide food and shelter for wildlife.

In 2012, we began recycling our landscaping debris as compost in Ford-owned farm fields throughout southeast Michigan. By allowing our leaves, grass and plant clippings to collect and decompose throughout the summer, we were able to add more than 3,000 cubic yards of nutrient-rich compost to our fields in lieu of a synthetic, petroleum-based fertilizer.

We are also installing "smart" irrigation systems at some of our Dearborn (Michigan) properties. These systems use site conditions – such as soil and plant types, evapo-transpiration rates and local weather data – to program watering only when it is needed. To date, systems at 35 sites have been completed and are providing water savings of just over 30 percent. Systems at an additional 12 sites will be completed this year, with the remaining 28 sites to be completed over the next three years.

We are also reducing emissions produced in normal lawn maintenance by using propane-fueled mowers, which produce approximately 24 percent fewer greenhouse gas emissions, 20 percent fewer nitrogen oxide emissions, and 60 percent less carbon monoxide than gasoline-powered mowers. Propane also eliminates fuel spills that often occur during the refueling of traditional gas mowers, and propane is nontoxic and soluble in water. In addition to these environmental benefits, the vast majority of propane is domestically produced and it is less expensive than gasoline. Propane also increases mower engine life and reduces maintenance because it burns cleaner than gasoline, which further reduces maintenance costs and resource use. Fairlane Grounds, which provides lawn-mowing services at Ford facilities in the Dearborn area, has already converted 10 mowers (or about a quarter of their mower fleet) to run on propane instead of gasoline. All future scheduled mower replacements will be propane mowers, until the entire fleet is propane-powered. In addition, Fairlane Grounds has piloted tested Ford F-350 trucks converted to run on propane by Roush CleanTech and is planning to replace a portion of its vehicle fleet with propane autogas fueled units. They are also in the process of adding an on-site propane fueling station for trucks and mowers.

Creating Wildlife Habitat

Ford has created wildlife habitats at many of our facilities. We are committed to maintaining our existing wildlife habitat sites and to creating as many new sites as possible in the future. Wildlife

habitats on Ford facilities range in size from five acres to more than 100 acres and include ecosystems as diverse as wetlands, woodlands, prairies, meadows and forests. Ford employees, often in partnership with local civic and education groups, develop and maintain the habitats, which host dozens of native plant and wildlife species. At many of the facilities, employees and other volunteers have built nature trails, erected bird and bat houses and planted wildflower gardens, in addition to establishing wildlife habitats. These facilities have also developed community education programs to encourage broader understanding of the importance of corporate wildlife sanctuaries.

In Europe, we have created large natural reserves at our facilities in Valencia, Spain, and Kocaeli, Turkey.

Our Mexican operations and dealers are also working to protect wildlife habitat and biodiversity. Since 1997, our Mexican operations have supported a Peninsular Pronghorn protection program. The Peninsular Pronghorn is an endangered species that lives only in the Baja California Peninsula. The program protects this species from hunting, depredation and the impoverishment of its natural habitat. After many years of effort, a captive population of the Pronghorn grew in size, and now they have been returned to their natural habitat. The program finished in May 2012.

Since 2007, Ford of Mexico and its dealers have been committed to promoting the importance of preserving protected areas through a communication project to inform and raise public awareness about the importance of biodiversity. The project, which included the production of video clips, printed articles and advertisements about seven major ecosystem types in Mexico (deserts, forests, rainforests, mountains, islands, reefs and wetlands), finished in December 2011. Ford of Mexico’s Civic Committee is currently working to identify and implement a new environmental program.

Green Buildings

Ford is a leader in green building and is committed to the sustainable design of our facilities and landscapes using the basic principles of resource effectiveness, lifecycle assessment, health, safety and environmental performance. In the past, we have included green building design principles into our buildings on a case-by-case basis. To help standardize and broaden our efforts in this area, we are currently developing corporate specifications for building new facilities that will focus on sustainability. These specifications require that new manufacturing facilities be designed and constructed using the best practices Ford has developed at plants all over the world. These standards will act to replicate best practices across our global operations and create efficient and sustainable plants. Some examples of best engineering practices that will be implemented in our new facilities include:

- Advanced water-treatment technologies, to allow the reuse of water and reduce water-supply requirements, water discharges, use of treatment chemicals and the generation of solid waste
- Energy-saving technologies, such as advanced control of air compressors, high-efficiency lights, variable-drive electric motors, skylights and daylighting, and white roofing materials
- Advanced paint shop technologies, to reduce emissions, energy use and waste, including wet-on-wet paint and advanced automated paint application equipment

Ford is a member of the U.S. Green Building Council (USGBC) and a supporter of its green building rating system, known as LEED® (Leadership in Energy and Environmental Design). The LEED system includes a series of standards used for certifying buildings as Silver, Gold or Platinum, and it is recognized as the industry standard for green building. Ford employees who are involved in the design, operation and maintenance of commercial and manufacturing facilities have obtained LEED Accredited Professional certification, which demonstrates their proficiency in the application of the LEED rating systems. Having this expertise in-house will continue to strengthen our knowledge and the speed at which we apply environmentally sustainable technologies and processes at our facilities.

Ford is evaluating existing buildings to achieve LEED certification. The LEED v3 Green Buildings and Operations Maintenance Rating System, or LEED GBOM, helps building operators measure operations, improvements and maintenance on a consistent scale, with the goal of maximizing operational efficiency while minimizing environmental impacts. The standards are intended to promote healthy and environmentally friendly buildings that are also durable, affordable and high-performing by focusing on six key areas: sustainable site management, water efficiency, energy and atmosphere impacts, materials and resource use, indoor environmental quality and innovations in operations.

Ford piloted the LEED Existing Building (LEED-EB) certification process on Corporate Crossings, an office building that Ford developed in 1999 in Dearborn, Michigan. In 2011 we achieved LEED-EB Silver Certification for this building, the first Ford Motor Company building certified under the LEED-EB program. We are now in the process of seeking LEED Existing Building Operations and Maintenance (LEED-EBOM) certification for our Research and Innovation Center (RIC) in Dearborn. In March 2013, RIC entered the “performance period” of the certification process. During this period, actual building performance is measured for at least three months, after all of the changes we are making to the building and its operation to obtain certification credits are implemented. These changes include energy-efficiency technology upgrades, operational policies and staff training. We hope to have the RIC facility LEED-EBOM certified in 2014.

Based on these experiences, Ford is evaluating the certification of the balance of our portfolio of commercial office buildings through the USGBC’s LEED for Existing Buildings: Operations and Maintenance Volume program. The LEED Volume Program was designed by the USGBC to meet industry needs for a streamlined approach to certifying similar buildings and spaces. The program, through the use of prototype standards, allows organizations to simplify the LEED documentation for multiple buildings or spaces of a similar type or management.

Related links

This Report

» Dealers

Our goal is to assure that the green building practices, procedures, policies and initiatives we have already developed will meet USGBC LEED-EB standards and help create a comprehensive sustainability program for our portfolio of commercial office buildings.

In 2012, Ford installed porous pavement systems in the parking areas of our Louisville Assembly Plant in Louisville, Kentucky. These systems reduce the amount of stormwater that runs off the site and into municipal storm sewer systems by allowing rainwater to infiltrate through porous pavement blocks and into the ground below. This project will help to reduce high flows in combined storm and sewage sewer systems during storm events and the resulting potential for sewage overflows into local stream and river systems. This project received an award from Ford's Environment Quality Office in 2012. We also use porous pavement systems at our Rouge Plant in Dearborn, Michigan, as described below.

Ford is also working to advance green building practices through partnerships with our building-related service providers. These partnerships help to educate service providers and provide a forum to exchange information on the concepts of sustainable design. For example, we have held training sessions on site selection, water efficiency, energy-use reductions, sustainable materials and resources, and indoor environmental quality.

We are also working with our dealers to help them improve the environmental performance of their facilities. For more information on our work to help "green" Ford and Lincoln dealerships, please see below and the Dealers section.

Some examples of Ford's green building projects include:

Green Dealership – Dagenham Motors, Barking, United Kingdom

Ford's Dagenham Motors dealership in Barking, England, recently built an all-new "green" dealership using the latest environmentally friendly materials and a number of sustainable and energy-saving features. The facility includes new and used car showrooms and a service center.

Water use at the facility is reduced by capturing rainwater runoff from the roof and storing it in a 3,500-gallon underground tank that supplies water for washing cars and flushing toilets. The rainwater-harvesting tank includes a UV sterilization unit and inline contaminate and particulate filters that enable the water to be suitable and hygienic for hand washing. In addition, waste oil from cars that have been serviced is reused for heating the premises by fueling an integrated used-oil burner on the site. In addition, a wind turbine was installed to generate up to 10 percent of the site's electricity, and the facility used green construction practices. Approximately 1,800 square meters of nonhazardous soil that was excavated from the site during construction will be reused to landscape the site rather than being transported to landfill.

Green Housekeeping Program

Ford promotes the use of environmentally friendly products in the operation and maintenance of its facilities. One example of this is the continued expansion of our "green housekeeping" program. Through this program, we are working with our Tier 1 suppliers and contractors to promote the use of environmentally friendly cleaning practices and water-based products that help to reduce the impact of facility operations on the environment. Our cleaning service providers use highly concentrated, water-based chemicals with more efficient packaging, which significantly reduces product waste and the amount of fuel required to ship products. These green housekeeping practices are now in use throughout our North American manufacturing locations and commercial office buildings.

Ford Rouge Center

Ford's largest green-building initiative was the redevelopment of the 600-acre Ford Rouge Center in Dearborn, Michigan, into a state-of-the-art lean, flexible and sustainable manufacturing center. The focal point of the center, the Dearborn Truck Plant, boasts a 10.4-acre living roof, part of an extensive stormwater management system that includes bio-swales and porous pavement to slow and cleanse the water. The Dearborn Truck Plant also features abundant skylights to maximize daylight in the facility. And, the Rouge Center features 100 acres of sustainable landscaping to help restore soils and support wildlife habitat.

Corporate Crossing (LEED-EB)

In 2011 we achieved LEED Existing Building certification for our Corporate Crossing office building, located in Dearborn, Michigan. This is the first Ford facility to achieve this LEED rating.

Rouge Visitor Center (LEED-Gold)

The redeveloped Ford Rouge Center includes the LEED-Gold certified Rouge Visitor Center, a 30,000-square-foot facility featuring two multi-screen theaters and an observation deck. The facility uses rainwater for plumbing and irrigation, and solar panels to produce energy. In

addition, “green screens” of shading vines cover some parts of the building to reduce energy use.

Fairlane Green (LEED-Gold)

Ford has developed a 1-million-square-foot green retail center on its 243-acre industrial waste landfill in Allen Park, Michigan, earning the national Phoenix Award for excellence in brownfield development. In addition, Fairlane Green Phase I received the nation’s first LEED-Gold certification for a core and shell retail development, for its use of retention ponds for irrigation, sustainable landscaping and white roofs, and for the preservation of natural areas. The buildings feature high-efficiency heating and cooling systems, added insulation and weather sealing, and efficient windows and doors.

Product Review Center (LEED-Silver)

Ford’s Product Review Center in Dearborn showcases Ford’s latest products and green building principles. The LEED-Silver-certified building incorporates an innovative system to recycle water for irrigation and cooling, large windows to maximize daylight and extensive use of local and recycled materials.

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Compliance

Manufacturing Plants Notices of Violation

Ford received three notices of violation (NOV) from government agencies in 2012. Two NOVs were in the U.S. and one was in Canada. The issuance of an NOV is an allegation of noncompliance with anything from a minor paperwork requirement to a permit limit, and does not mean that the Company was noncompliant or received a penalty.

Offsite Spills

In 2012, no off-site spills occurred at Ford manufacturing facilities.

Fines and Penalties Paid

In 2012, Ford paid no fines or penalties globally pertaining to environmental matters in our facilities

Remediation

Ringwood Mines Landfill Site

Ford Motor Company continues to address concerns raised in connection with Ford's prior disposal activities in Ringwood, New Jersey, including the adequacy of the prior investigation and cleanup. The Ringwood site was initially an iron mine owned most recently by the United States, and subsequently used for decades for disposal of a wide variety of wastes by residents and local governments. Ford used the site to dispose of waste materials (primarily cardboard, wood wastes and paint sludge from the former Mahwah Assembly Plant) from 1967 to the middle of 1971. Ford participated in remediation activities at the site in the 1980s and 1990s. In September 2004, Ford entered into an Administrative Order on Consent (AOC) and Settlement Agreement with the U.S. Environmental Protection Agency (EPA) regarding additional environmental activities at the Ringwood site. Ford entered into a second AOC with the EPA in May 2010 that obligates Ford to complete the remedial site investigations, human health and ecological risk assessments, as well as feasibility studies for each of the three soil operable units (OUs) and one groundwater OU. Ford, with the Borough of Ringwood's cooperation, is currently completing the necessary reports for the three soil OUs. It is anticipated that the EPA will select a final remedial approach for the three soil OUs later this year and construction could begin in late 2014 or early 2015.

Data

IN THIS SECTION

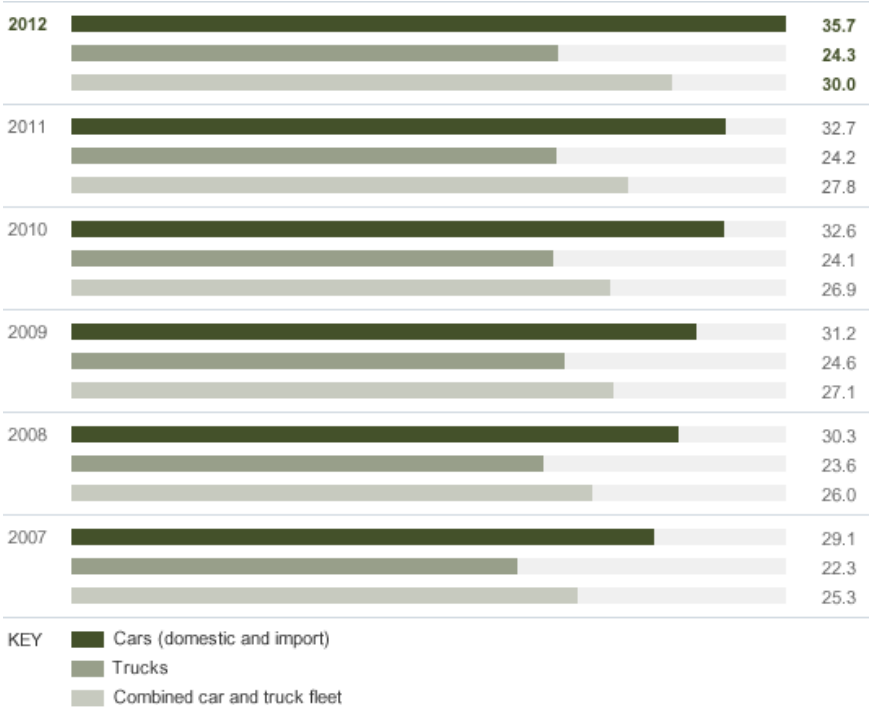
Data:

Fuel Economy and CO_2 Emissions

DATA ON THIS PAGE

A. Ford U.S. Corporate Average Fuel Economy

Miles per gallon



	2007	2008	2009	2010	2011	2012
Cars (domestic and import)	29.1	30.3	31.2	32.6	32.7	35.7
Trucks	22.3	23.6	24.6	24.1	24.2	24.3
Combined car and truck fleet	25.3	26.0	27.1	26.9	27.8	30.0

Related Links

This Report:

- Vehicle

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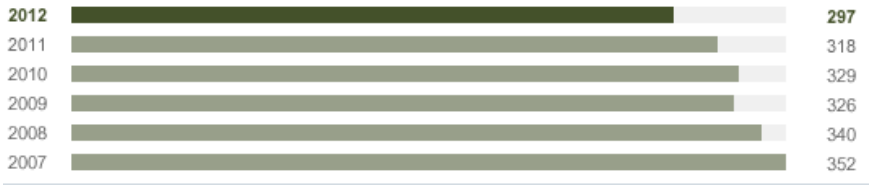
B. Ford U.S. CO_2 Tailpipe Emissions per Vehicle (Combined Car and Truck Fleet Average CO_2 Emissions)

Grams per mile



2007	2008	2009	2010	2011	2012
352	340	326	329	318	297

Notes to Data

Improvement is reflected in decreasing grams per mile. This is the first year that the CO2 data has come directly from Ford's official Greenhouse Gas report. Under the One National Program regulation, 2012 MY is the first year where a separate greenhouse gas compliance report is required, in addition to the annual CAFE report. The CO2 value includes FFV credits, but does not include credits/debits for air conditioning or off-cycle technologies or CH4/N2O compliance.

Related Links

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» Vehicle

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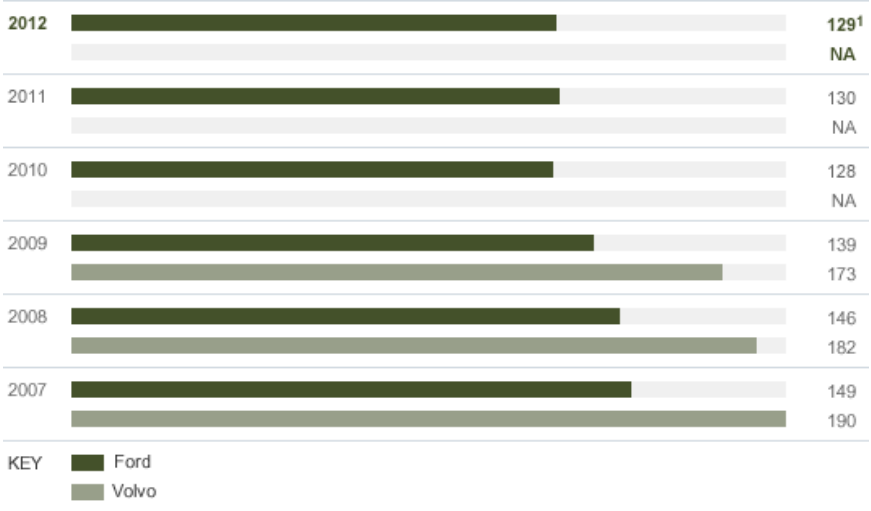
C. Ford Europe CO_2 Tailpipe Emissions per Vehicle

Grams per kilometer



	2007	2008	2009	2010	2011	2012
Ford	149	146	139	128	130	129 [1]
Volvo	190	182	173	NA	NA	NA

Notes to Data

1. This is preliminary data; official data from European Commission expected in November 2013.

Improvement is reflected in decreasing grams per kilometer. Based on production data for European markets. European and U.S. fleet CO2 emissions are not directly comparable because they are calculated in different units and because they are assessed based on different drive cycles. In 2009, we switched from reporting European vehicle CO2 emissions as a percent of a 1995 base to reporting actual fleet average CO2 emissions, to parallel our reporting for other regions.

Related Links

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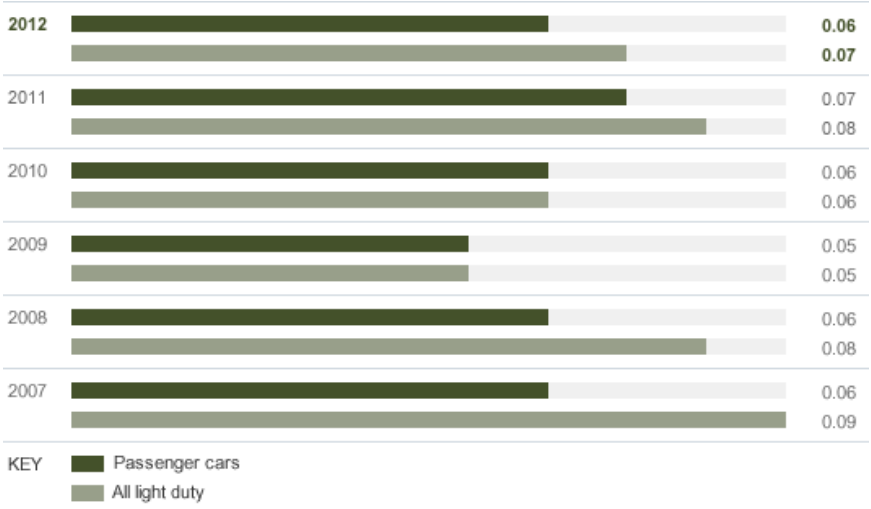
Data:

Tailpipe Emissions

DATA ON THIS PAGE

A. Ford U.S. Average NOx Emissions

Grams per mile



	2007	2008	2009	2010	2011	2012
Passenger cars	0.06	0.06	0.05	0.06	0.07	0.06
All light duty	0.09	0.08	0.05	0.06	0.08	0.07

Reported to regulatory authorities (EPA)

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- Non-CO_2 Tailpipe Emissions

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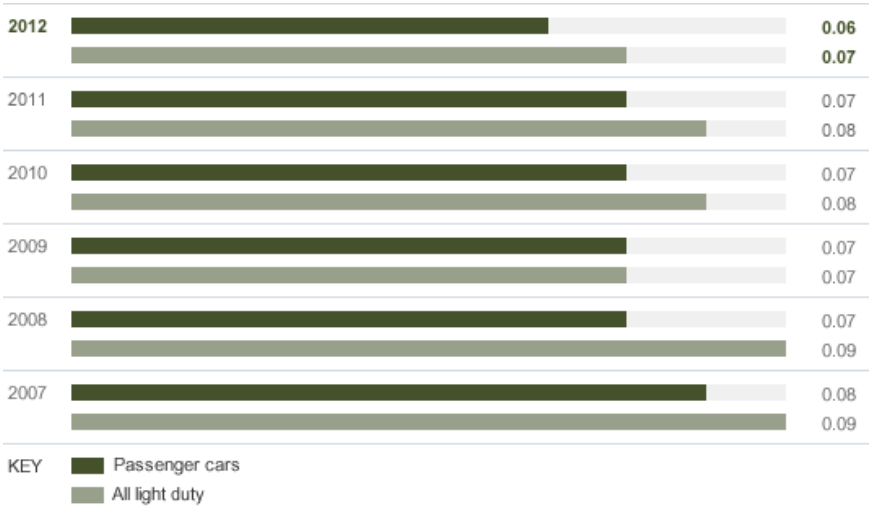
B. Ford U.S. Average NMOG Emissions

Grams per mile



	2007	2008	2009	2010	2011	2012
Passenger cars	0.08	0.07	0.07	0.07	0.07	0.06
All light duty	0.09	0.09	0.07	0.08	0.08	0.07

Reported to regulatory authorities (EPA)

Notes to Data

NMOG = Non-Methane Organic Gases

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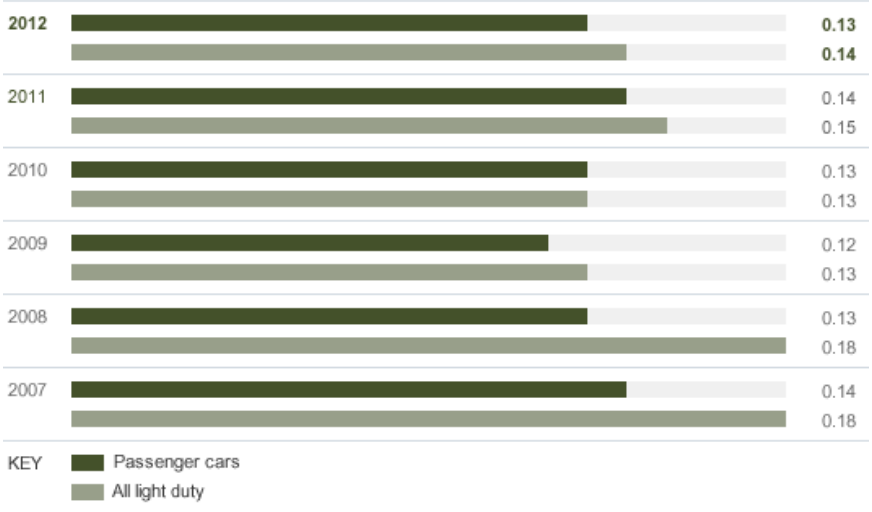
C. Ford U.S. Average Vehicle Emissions

Grams per mile



	2007	2008	2009	2010	2011	2012
Passenger cars (Grams per mile)	0.14	0.13	0.12	0.13	0.14	0.13
All light duty (Grams per mile)	0.18	0.18	0.13	0.13	0.15	0.14
Fleet Reduction (M Lbs)	NA	NA	NA	NA	-27.10	-27.5

Reported to regulatory authorities (EPA)

Notes to Data

Average vehicle emissions are the smog-forming pollutants from vehicle tailpipes, characterized as the sum of [(NMOG + NOx emissions) x volume] for all products in the fleet.

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- Non-CO_2 Tailpipe Emissions

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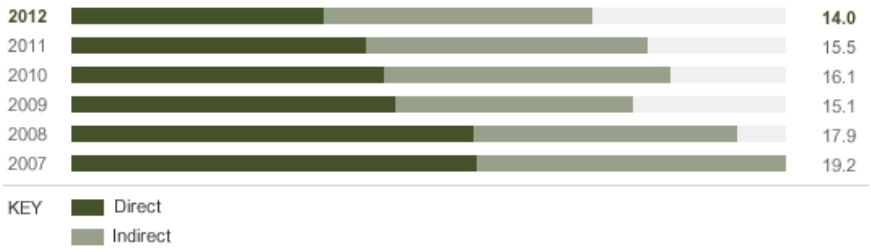
Data:

Operational Energy Use and CO_2 Emissions

DATA ON THIS PAGE

A. Worldwide Facility Energy Consumption

Billion kilowatt hours



	2007	2008	2009	2010	2011	2012
Direct	10.9	10.8	8.7	8.4	7.9	6.8
Indirect	8.3	7.1	6.4	7.7	7.6	7.2
Total	19.2	17.9	15.1	16.1	15.5	14.0

Data managed through the Global Emissions Manager database

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- Operational Energy and Greenhouse Gas Emissions

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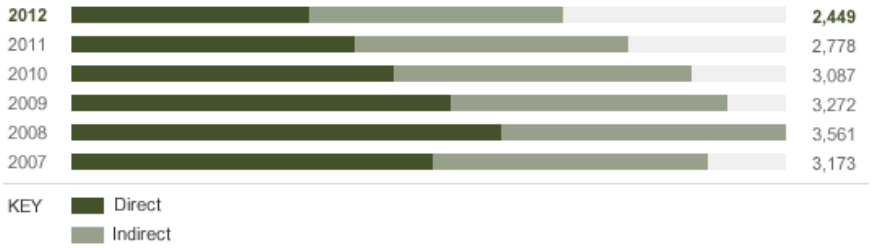
B. Worldwide Facility Energy Consumption per Vehicle

Kilowatt hours per vehicle



	2007	2008	2009	2010	2011	2012
Direct	1,804	2,142	1,891	1,609	1,408	1,186
Indirect	1,369	1,419	1,381	1,478	1,370	1,263
Total	3,173	3,561	3,272	3,087	2,778	2,449

Data managed through the Global Emissions Manager database

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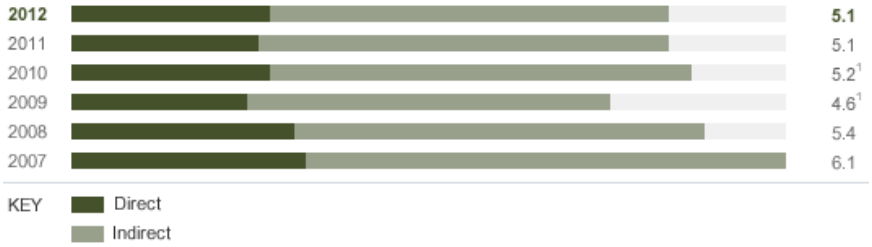
C. Worldwide Facility CO_2 Emissions

Million metric tons



	2007	2008	2009	2010	2011	2012
Direct	2.0	1.9	1.5	1.7	1.6	1.7
Indirect	4.1	3.5	3.1	3.6	3.5	3.4
Total	6.1	5.4	4.6[1]	5.2[1]	5.1	5.1

Third-party verified (North America and EU)[2]

Reported to regulatory authorities (EU). Voluntarily reported to emissions registries or other authorities in Argentina, Australia, Brazil, Canada, China, the Philippines, Taiwan and the U.S.

Notes to Data

1. We restated our 2009 and 2010 worldwide facility CO_2 emissions because the universe of facilities used to calculate worldwide facility CO_2 emissions was modified.
2. Over two-thirds of Ford's global facility greenhouse gas (GHG) emissions are third-party verified. From 1998-2010, all of Ford's North America GHG emissions data were externally verified by FINRA, the auditors of the NASDAQ stock exchange, as part o our membership in the Chicago Climate Exchange. Beginning in 2011, all of Ford's North American GHG emissions are now also verified under The Climate Registry, a nonprofit collaboration among North American states, provinces, territories and

Native Sovereign Nations that sets consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions into a single registry. In addition, all emissions data covered by the EU Emission Trading Scheme (EU-ETS) and voluntary UK Climate Change Agreements are third-party verified. All EU-ETS verification statements are provided to Ford by facility from BSI for UK facilities, Lloyds for Spain and the Flemish Verification Office for Belgium. North American facilities are verified against The Climate Registry's General Reporting Protocol. European facilities are verified against the EU-ETS rules and guidelines.

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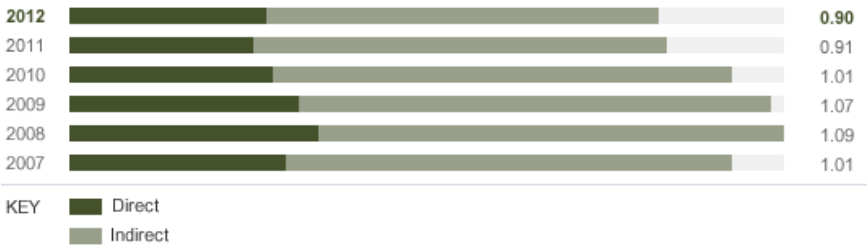
D. Worldwide Facility CO_2 Emissions per Vehicle

Metric tons per vehicle



	2007	2008	2009	2010	2011	2012
Direct	0.33	0.38	0.35	0.31	0.28	0.30
Indirect	0.68	0.71	0.72	0.70	0.63	0.60
Total	1.01	1.09	1.07	1.01	0.91	0.90

Data managed through the Global Emissions Manager database

Notes to Data

CO_2 emissions per vehicle declined for the fifth year, reflecting our focus on improving the energy efficiency of our operations. We are workging to meet our goal of reducing global facility CO_2 emissions per vehicle by 30 percent by 2025 from a 2010 baseline.

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E. Energy Efficiency Index

Percent

2007	2008	2009	2010	2011	2012
4.3	11.7	18.3	14.4	2.6	6.4

Notes to Data

The energy efficiency index is a normalized indicator of energy used per vehicle produced based on a calculation that adjusts for typical variances in weather and vehicle production. The Index is set at 100 for the baseline year to simplify tracking annual improvements. In 2012, we expanded our energy efficiency to include global energy use data. In previous years, it only included energy use at North American facilities. In 2012, we also reset the baseline year to 2011. A year 2000 baseline was used through 2006; the baseline was reset to year 2010 starting in 2011. The year 2012 improvement indexed against the year 2011 baseline was 6.4, indicating a 6.4 percent improvement in global energy efficiency per vehicle from 2011 to 2012. Higher percentage reflects improvement.

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Data:

Emissions (VOC and Other)

DATA ON THIS PAGE

A. North America Volatile Organic Compounds Released by Assembly Facilities

Grams per square meter of surface coated

2007	2008	2009	2010	2011	2012
24	24	21	22	20	18

Data managed through the Global Emissions Manager database

Analysis

VOC emissions in North America decreased by 11.7 percent between 2011 and 2012; we continue to exceed our goal of maintaining emissions at 24 grams per square meter of surface coated. We achieved this goal through, among other things, the use of mold-in-color plastics (which preclude the need for painting) and our fumes-to-fuel technology, which captures VOC emissions from our paint shops and uses them as an energy source.

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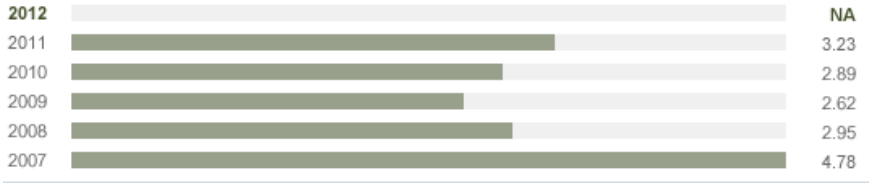
B. Ford U.S. TRI Releases

Million pounds



2007	2008	2009	2010	2011	2012
4.78	2.95	2.62	2.89	3.23	NA

Reported to regulatory authorities (EPA)

Notes to Data

Releases reported under the U.S. Toxics Release Inventory are all in accordance with the law, and many of them are subject to permits. The data shown are the most recent reported to authorities.

Analysis

Our U.S. Toxic Release Inventory releases increased from 2010 to 2011, due to an increase in production. However, U.S. TRI releases per vehicle decreased in this timeframe, reflecting more efficient production.

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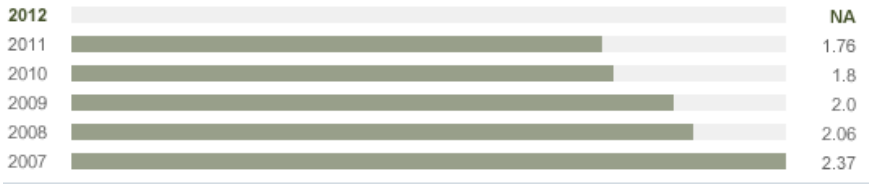
C. Ford U.S. TRI Releases per Vehicle

Pounds per vehicle



2007	2008	2009	2010	2011	2012
2.37	2.06	2.0	1.8	1.76	NA

Notes to Data

Releases reported under the U.S. Toxics Release Inventory are all in accordance with the law, and many of them are subject to permits. The data shown are the most recent reported to authorities.

Analysis

Our U.S. Toxic Release Inventory releases per vehicle decreased from 2010 to 2011, the sixth year in a row we have reduced these emissions. These reductions were achieved through material and process changes.

Related Links

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- Non-CO_2, Facility-Related Emissions

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D. Ford Canada NPRI Releases

Metric tonnes

2007	2008	2009	2010	2011	2012
1,127[1]	726	594	784	630	NA

Reported to regulatory authorities (Environment Canada)

Notes to Data

1. This figure was restated for our 2011-12 report due to an arithmetic error.

Releases reported under the Canadian National Pollutant Release Inventory are all in accordance with the law, and many of them are subject to permits. The data shown are the most recent reported to authorities.

Analysis

Our Canada National Pollutant Release Inventory releases decreased from 2010 to 2011. These reductions were achieved through material and process changes.

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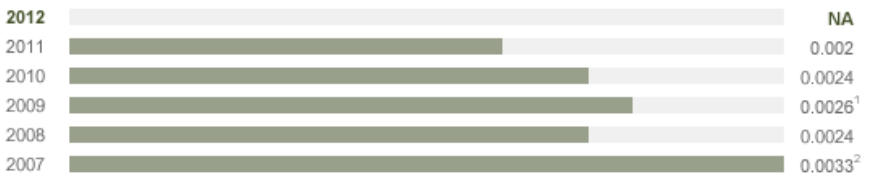
E. Ford Canada NPRI Releases per Vehicle

Metric tonnes per vehicle



2007	2008	2009	2010	2011	2012
0.0033[2]	0.0024	0.0026	0.0024[1]	0.002	NA

Notes to Data

1. This figure was restated for our 2011-12 report due to an arithmetic error.
2. The change in total NPRI releases (see above) resulted in the change in per vehicle releases.

Releases reported under the Canadian National Pollutant Release Inventory are all in accordance with the law, and many of them are subject to permits. The data shown are the most recent reported to authorities.

Analysis

Our Canada National Pollutant Release Inventory releases per vehicle continued to decrease from 2010 to 2011. These reductions were achieved through material and process changes.

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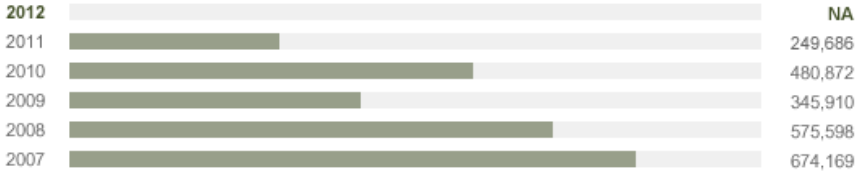
F. Australia National Pollutant Inventory Releases (Total Air Emissions)

Kilograms per year



2007	2008	2009	2010	2011	2012
674,169	575,598	345,910	480,872	249,686	NA

Reported to regulatory authorities (NPI)

Notes to Data

Releases reported under the Australian National Pollutant Inventory are all in accordance with the law, and many of them are subject to permits. The data shown are the most recent reported to authorities.

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Data:

Waste

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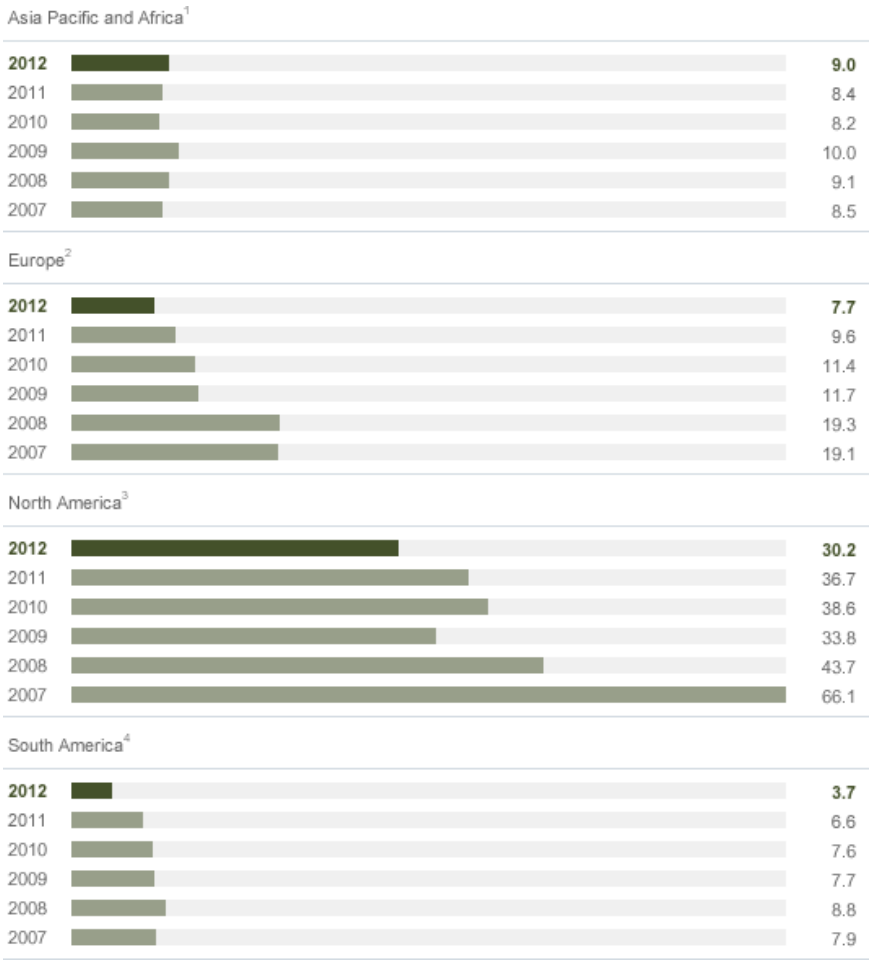
A. Regional Waste to Landfill

Million kilograms



	2007	2008	2009	2010	2011	2012
Asia Pacific and Africa [1]	8.5	9.1	10.0	8.2	8.4	9.0
Europe [2]	19.1	19.3	11.7	11.4	9.6	7.7
North America [3]	66.1	43.7	33.8	38.6	36.7	30.2
South America [4]	7.9	8.8	7.7	7.6	6.6	3.7

Data managed through the Global Emissions Manager database

Notes to Data

1. In 2012, waste to landfill was restated for 2011 to correct for misclassifications in disposal and recycling codes. In 2011, waste-to-landfill data was restated for years 2007-2011 because casting sands (a type of waste) associated with the Geelong foundry (located in the Asia Pacific region) have been removed from the waste-to-landfill totals.
2. In 2012, waste to landfill was restated for 2011 to correct for misclassifications in disposal and recycling codes.
3. In 2012, waste to landfill was restated for 2010 and 2011 to correct for misclassifications in disposal and recycling codes.
4. In 2012, waste to landfill was restated for 2011 to correct for misclassifications in disposal and recycling codes.

AutoAlliance International, our joint-venture plant in Flat Rock, Michigan that produces the Ford Mustang, is included beginning in 2009.

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Waste Management

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B. Waste to Landfill per Vehicle

Kilograms

2007	2008	2009	2010	2011	2012
17.0	15.6	15.2	13.3 [1]	11.2 [1]	9.0

Data managed through the Global Emissions Manager database

Notes to Data

1. In 2012, waste to landfill per vehicle data was restated for 2010 and 2011 to correct for misclassifications in disposal and recycling codes

In 2011, Waste-to-landfill per vehicle data was restated for all years because casting sands (a type of waste) associated with Geelong foundry (located in the Asia Pacific region) and Taubate foundry (located in the South America Region) have been removed from the waste-to-landfill totals for years 2007?2011.

AutoAlliance International, our joint-venture plant in Flat Rock, Michigan, which produces the Ford Mustang, is included beginning in 2009.

Analysis

In 2012, we reduced waste to landfill on a per-vehicle basis by about 19.6 percent, which reflects our focus on reducing waste produced per unit of production. We decreased waste to landfill primarily through aggressive efforts to generate less waste and recycle more, and through the use of waste-to-energy

incineration facilities.

Related Links

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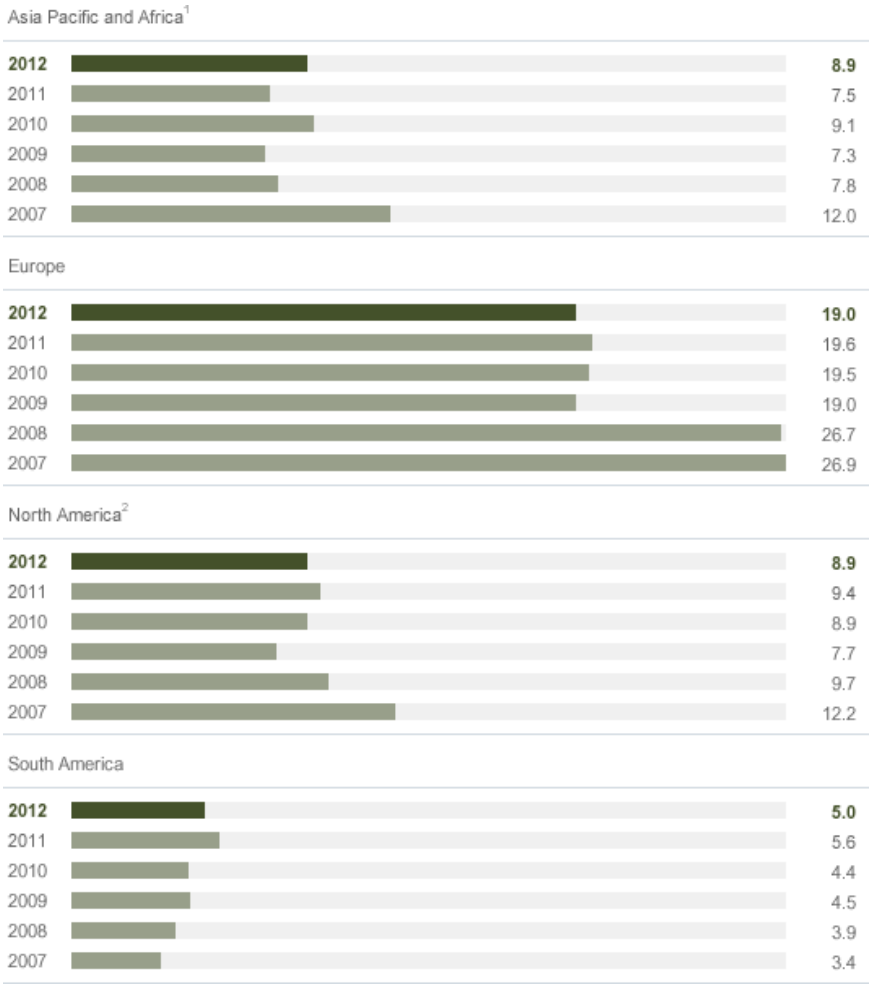
C. Regional Hazardous Waste Generation

Million kilograms



	2007	2008	2009	2010	2011	2012
Asia Pacific and Africa [1]	12.0	7.8	7.3	9.1	7.5	8.9
Europe	26.9	26.7	19.0	19.5	19.6	19.0
North America [2]	12.2	9.7	7.7	8.9	9.4	8.9
South America	3.4	3.9	4.5	4.4	5.6	5.0

Data managed through the Global Emissions Manager database

Notes to Data

1. In 2012, regional hazardous waste in Asia Pacific Africa for 2008, 2009, and 2010 was updated to reflect adjusted production.
2. In 2012, regional hazardous waste in North America was restated for 2011 to correct for misclassifications in disposal and recycling codes

Related Links

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D. Hazardous Waste Generation per Vehicle

Kilograms

2007	2008	2009	2010	2011	2012
9.1	9.3	9.3[2]	8.4[2]	7.7[1]	7.5

Data managed through the Global Emissions Manager database

Notes to Data

1. In 2012, hazardous waste per vehicle data was restated for 2011 to correct for misclassifications in disposal and recycling codes
2. In 2011, hazardous waste to landfill data for 2010 and 2009 was restated due to corrections in the data.

Analysis

In 2012, we continued a five-year improvement trend by reducing hazardous waste on a per-vehicle basis by 2.6 percent.

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Mark Lee

Executive Director SustainAbility

Nearly all the climate data coming at us reveal accelerating negative trends. The 13 hottest years on record have all occurred since 1998. The International Energy Agency says we're now at risk of locking in irrevocable climate change impacts by as early as 2017 and probably no later than 2022. Yet, we're not getting responses from national governments, and we have had very few strong responses from the markets. Investors, for example, do remarkably little to price carbon risk into their investments.

Industry thus far has relied heavily on a model of voluntary practices; I wonder if we're at a point where the limits of that model are being breached. We live in an "age of acknowledgment" in which increasing numbers of companies and private-sector leaders recognize and state sustainability challenges, from climate change to biodiversity, but don't do enough about them. In too many cases, corporate responsibility reporting, coupled with eco-efficiency, is seen as enough, leaving us awash in companies setting relative performance improvement targets rather than committing to absolute shifts. Also, we're still completely embedded in the good and bad of the fossil fuel energy system – from the real economic and social benefits to the enormous negative of global warming due to greenhouse gas emissions. To make progress, we'll have to replace the economic and social benefits that fossil fuel use provides while dramatically diminishing its ecological harm.

The big question, then, is how to enable business to make the changes this planet needs. I think there are some remarkable efforts out there, including Ford's development of a product plan that is based on stabilizing atmospheric carbon dioxide (CO_2) concentration at 450 parts per million (ppm), along with pledges made by consumer product companies and apparel makers, among others.

Companies need to step back and look holistically at climate change and the full range of impacts it can have on a business, from sourcing to production to consumer relationships to end-of-life issues. Companies also must think about climate change as much more than an environmental issue. It's a moral issue, a political issue and, of course, a business issue, and it's unproductive to try to isolate climate in just one of those categories.

It's worth noting that it isn't all doom and gloom, and we shouldn't overlook any pieces of good news. For example, between 2007 and 2012, there was a more than 6 percent decline in U.S. greenhouse gas emissions. And, yes, people will say that this was during a period of recession, which is true. But diminished economic productivity was not nearly the whole story, and we have to learn from and scale what was done right during this period.

My relationship with Ford, which has spanned well over a decade and more than one professional role for me personally, has given me a unique perspective into the automaker. Ford definitely stands out among a wave of early adopters that embraced a sustainability agenda even as the idea of sustainable development was still emerging.

This was partly due to the leadership of Bill Ford. But other striking examples were Ford's early decision to leave the Global Climate Coalition, and the Company's back-of-the-envelope calculation, in the early 2000s, about the direct and indirect climate impact of its operations and production. Ford's willingness to explore the data and understand its role in the global debate was

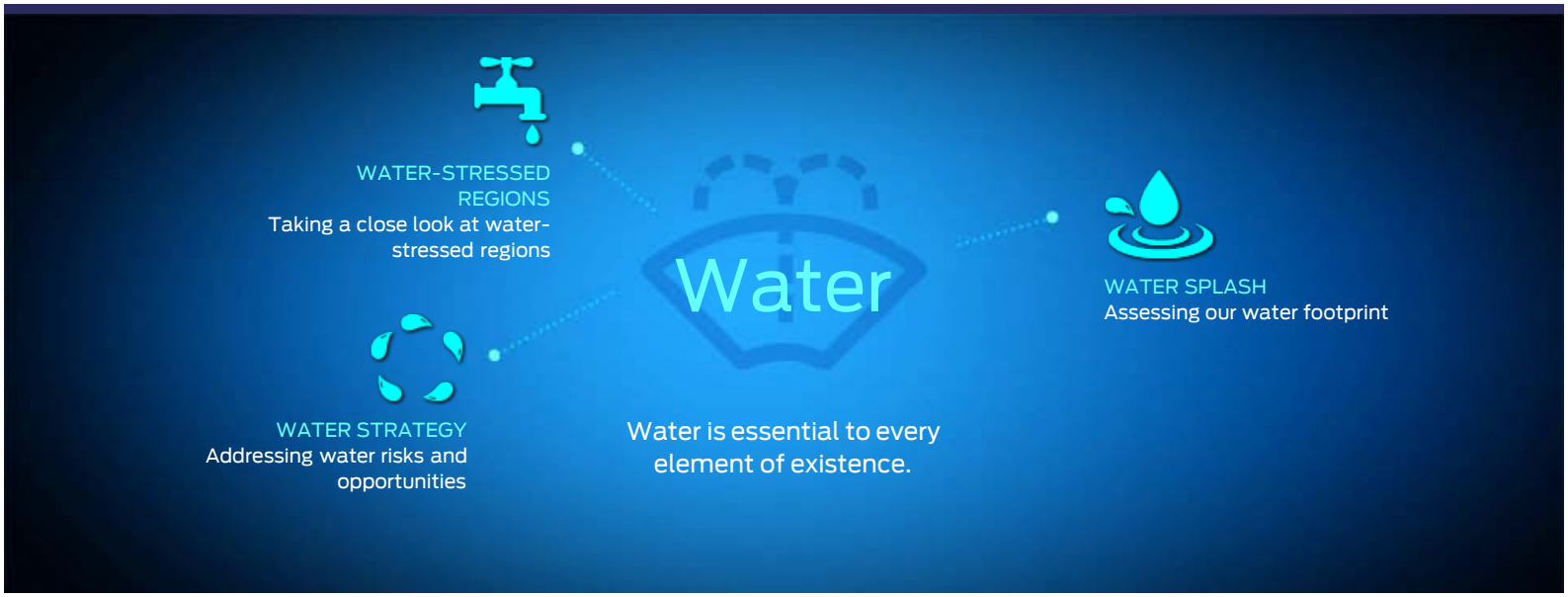
powerful in and of itself, and its willingness to publish that information helped shift the conversation.

The greatest testament, to me, however, is the Ford product plan based on stabilizing atmospheric CO_2 concentration at 450 ppm mentioned previously. People can argue about whether 450 ppm is the right number and worry about whether everyone else is aligning their businesses in a similar way. But Ford's plan is nonetheless light-years beyond where most others are in terms of putting their operations and impact in a larger economic and societal context.

Outside the environmental arena, Ford has consistently been a leader around human rights and labor rights – for instance, its early support of the United Nations Global Compact set it apart from its peers. This isn't to say that all is perfect under the Blue Oval. But it does leave me thinking that sustainability has come to be baked into everything Ford does.

One aspect that Ford and others can improve upon is shaping consumer demand. While I understand how incredibly difficult it is to influence consumer fancy, I'm concerned that Ford and other companies let the markets dictate production volumes of more sustainable products. The issues we face are too serious to leave entirely to the whims of consumers. Companies spend enormous sums of money on advertising, so they obviously must feel they can influence consumer choices. From a sustainability perspective, we need companies to deliver increasing numbers of more sustainable products – and we need consumers to buy them.

Another challenge is that more than 50 percent of our planet already lives in urban locations, and that we will be about 70 percent urban, as a species, by mid-century. Ford has flirted with the development and delivery of a comprehensive urban mobility platform over the years and has been on the edge of breakthrough leadership, but neither Ford nor anyone else in the industry has yet seized on this and made it their own. I'd love to see Ford and the industry push harder at the system challenges in the ways that will be necessary to deliver the accessible, affordable, low-carbon mobility system required.



The availability of high-quality water to meet the needs of humans and ecosystems is a critical global sustainability issue, the effects of which are felt locally. Water is essential to every element of existence. It is vital for health, indispensable for agriculture and biodiversity, necessary for industry and critical for community development. The need for clean water cuts across all social, economic, environmental and political boundaries.

We believe Ford can play a role in developing and implementing solutions to the global water challenge. We are committed to conserving water and using it responsibly. Many vehicle manufacturing processes require water, and water is used at every point in our supply chain. Our water-related risks come not only from being a direct water consumer, but also from being a large purchaser of water-intensive materials, parts and components.

Our comprehensive water strategy is based on an analysis of risks and opportunities throughout our value chain from environmental and social perspectives. To better understand our impacts, we have been assessing our water footprint throughout the lifecycle of our vehicles. We also have taken a close look at Ford operations located in water-stressed regions. We prioritize facility water reductions based on local needs, while using a global, company-wide approach. We are also participating in social programs that provide better access to water.

Our water strategy actions – including our water-use-per-vehicle reduction goal of 30 percent from 2009 to 2015 – aim to meet a number of objectives. These include:

- Minimizing water use and consumption at Ford facilities
- Finding ways to use alternative, lower-quality water sources
- Prioritizing our water technology investments based on local water scarcity and cost effectiveness
- Meeting either local quality standards or Ford global standards for wastewater discharge – whichever is more stringent
- Ensuring a stable water supply for our manufacturing facilities while working with local communities to minimize our impact

Approximately
1 billion
people around the world lack access to safe, clean drinking water.

About
2.5 billion
people globally lack sanitation facilities[1]

Reducing Water Use

Between 2011 and 2012, we reduced the average amount of water used to make each vehicle by 8.5 percent.

At Ford, we recognize water as a human rights issue – in other words, as a “right to water.” Companies that underperform on water issues will face scrutiny over human rights violations – especially those companies operating in water-stressed areas. Our Company’s water strategy complements our overall Code of Human Rights, Basic Working Conditions and Corporate Responsibility.

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1. Sources: UN-Water, WHO/UNICEF

Progress in Reducing Water Use

For more than a decade, Ford has been committed to decreasing our water use. We began our Global Water Management Initiative in 2000, setting a target of 3 percent year-over-year reductions. In late 2011, we announced a new water goal. We are now aiming to cut the amount of water used to make each vehicle by 30 percent globally from 2009 to 2015, which is currently equivalent to an average of 4 cubic meters (or 1,056 gallons) per vehicle.

We are on track to reach this goal, even as we grow our business, adding plants and expanding production to meet global consumer demand. Between 2011 and 2012, we reduced the average amount of water used to make each vehicle by 8.5 percent, putting us more than halfway toward our goal.

Between 2000 and 2012, we reduced our total global water use by 62 percent, or 10.6 billion gallons (see graphic below), by cutting the water we use in everything from cooling towers to parts washing to paint operations. That's equivalent to the water used annually by nearly 99,000 U.S. residences, based on figures from the U.S. Environmental Protection Agency, or enough to fill 16,000 Olympic-size pools. We decreased the total amount of water used around our global facilities from 64 million cubic meters per year to 24 million cubic meters.

Between 2000 and 2012, reduced total global water use by 62 percent, or

10.6 billion gallons

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10.6 billion gallons of water is:

the amount of water that flows over Niagara Falls in

3.9 hours*

equal to the amount of annual water use for about

99,000

U.S. residences*

16,000

Olympic pools*

265 million

loads of laundry**

* U.S. Environmental Protection Agency

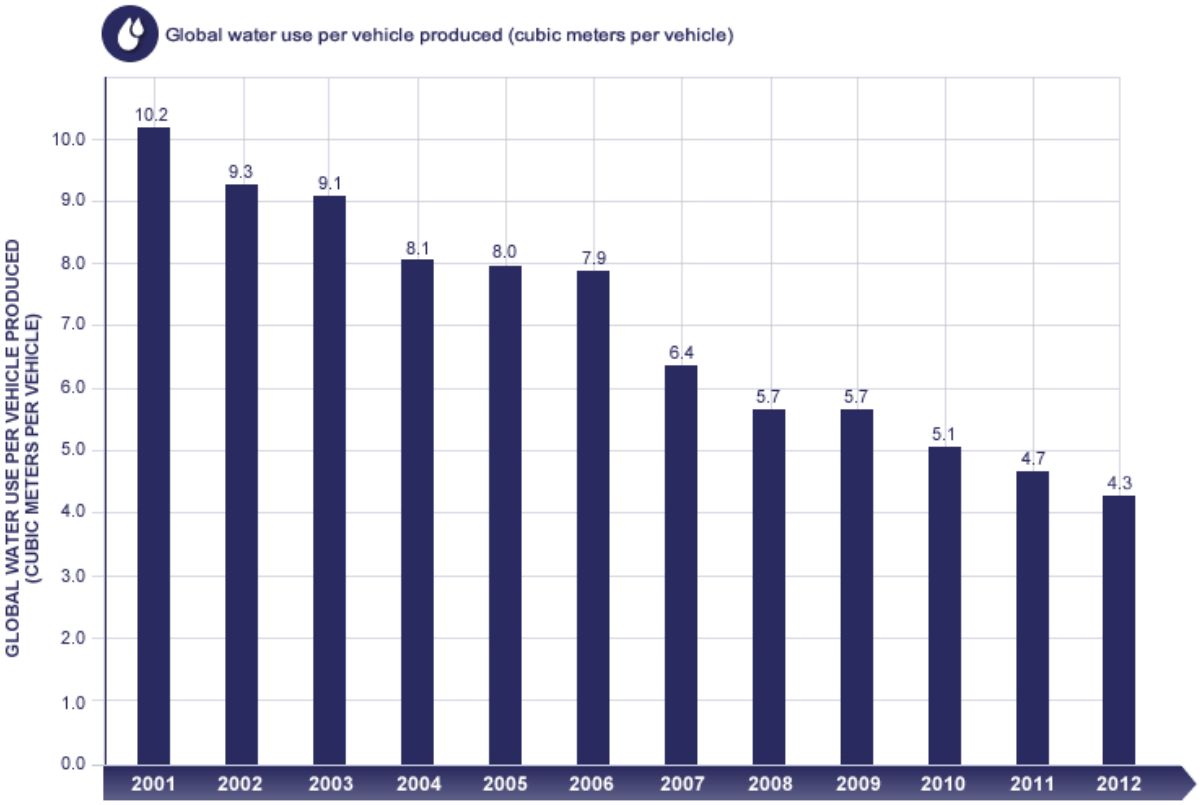
** California Energy Commission

Although we have exceeded expected progress toward our 2015 goal, we continue to set year-over-year efficiency targets as part of our annual environmental business planning process. For 2013, our year-over-year efficiency target is a 2 percent water use reduction per vehicle. This target represents a phase when we are building a number of new plants that have not yet fully launched.

We report on our progress toward our 2015 goal in this annual Sustainability Report and through our participation in the CDP Water Disclosure, which we joined in 2010 – the first automaker to do so.

In 2013, we began tracking process water discharge at our manufacturing plants globally. This covers water that is used during the manufacturing process and then discharged from the manufacturing plants. It does not cover water used in sanitation (e.g., restrooms, kitchens) and it only tracks water that is eventually discharged from the plant. Prior to this, some plants had been tracking process water discharge, but only on an informal basis. Now, we have made it a formal global metric for our Company. Tracking this metric will help us understand exactly where water is used within our manufacturing processes and, as a result, help us create greater efficiencies.

We are aiming to make our vehicles more efficient, while making our own operations more efficient, too. Water remains one of our top environmental priorities, and our aggressive reduction target helps to ensure continued focus on this critical resource.



Investing in New Technologies

Ford has successfully implemented many water savings initiatives across our plants to minimize our water footprint. Wherever possible, we take successful projects and mirror them in other locations. Our newest plants use a set of advanced and environmentally friendly technologies to dramatically cut water use.

In 2004, we opened the rebuilt Dearborn Truck Plant at the Ford Rouge Center as a model of sustainable manufacturing. The facility incorporates extensive natural storm water management systems and what was then the largest green roof in the world. As we invest in new and existing facilities globally, we have been building on what we learned at the Ford Rouge Center and implementing other sustainable manufacturing technologies that use water more efficiently and provide environmental benefits.

We have implemented a reverse-osmosis process to recycle water in a number of our production plants, allowing us to avoid using high-quality water suitable for human consumption in our manufacturing processes. We also employ an innovative parts-washing system to reduce wastewater and cut energy consumption.

And, we have looked to new technologies, including a process known as “dry-machining” that lubricates cutting tools with a fine spray of oil, rather than the conventional “wet-machining” that required large amounts of metal-working fluids and water to cool and lubricate the tools. For a typical production line, dry-machining – also known as Minimum Quantity Lubrication, or MQL, machining – can save more than 280,000 gallons of water per year. Our engine plant in Cologne, Germany, for example, decreased water use per engine by 50 percent from 2011 to 2012 by switching to the MQL process.

In Pretoria, South Africa, we began using a new $2.5 million on-site wastewater treatment plant at the Silverton Assembly Plant that is increasing the amount of water that can be reused by up to 15 percent.

Our Chennai (India) Assembly Plant installed a new system that allows the plant to recycle 100 percent of its water. And two assembly plants in Chongqing, China, added advanced water treatment equipment to improve recycling. One plant recycles an average of 100,000 gallons daily, while the other recycles an average of 65,000 gallons daily.

Many of these new systems require substantial capital investments, so we have been adding them on a rolling basis as we update equipment and bring new facilities online. Our water strategy puts primary emphasis on our plants located in areas of water scarcity.

We have come a long way since we began our water conservation initiative in 2000. Back then, many of our facilities had little ability to even track their water usage. When the initiative started, our engineers developed patented software – called the Water Estimation Tool (or WET) – to predict water usage. Another kind of software was developed to track water use at each facility and generate a monthly report that would identify successes and potential opportunities for improvement.

We began building reduction actions into our Environmental Operating System (EOS), which provides a globally standardized, streamlined approach to meeting all environmental requirements, including sustainability objectives and targets. The EOS allows us to track basic water-reduction actions, such as cooling tower optimization, at every manufacturing site worldwide.

In 2012, we conducted water assessment pilot projects at two assembly plants in the U.S. and one in Cologne, Germany. We hired an outside consultant to review the facilities with fresh eyes to map the water usage at the plants. In 2013, we expanded the water assessments to include a plant in each of our four global regions. We will be assessing the results to determine what measures we could take to reduce water and save our Company money at the same time.

Also in 2013, we will be holding a “water futuring” workshop to help us understand future scenarios

For a typical production line, Minimum Quantity Lubrication machining can save

280,000+

gallons of water per year.

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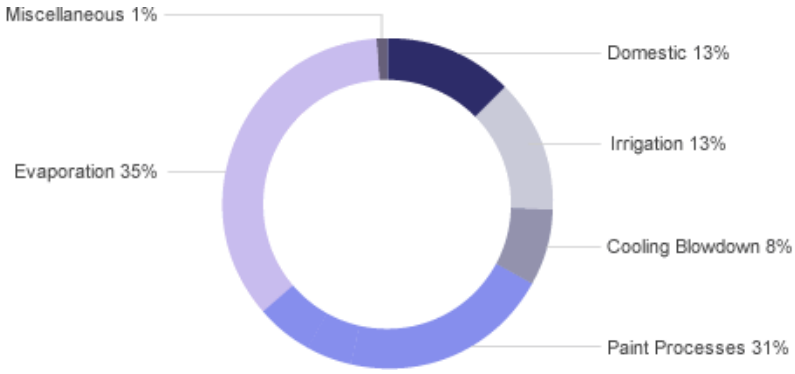
for our Company related to water.

Vehicle Assembly Plant Water Use



	%
Paint Process	31
Cooling Blowdown	8
Irrigation	13
Domestic	13
Miscellaneous	1
Evaporation	35

Water Impacts, Risks and Opportunities

Water scarcity can have a sizeable impact on our manufacturing operations. Although we do not need as much water as some other industries, we use water in many key manufacturing phases in our plants. We cannot be certain that we will always have access to the water we require. Our analysis shows that some of our facilities are located in regions where water supplies are under stress. And global climate change has the potential to further impact the availability and quality of water.

Historically, water has been a relatively inexpensive resource. But that's changing, and the cost of using water is expected to continue to increase in the coming decades. For a manufacturing company like ours, that would mean higher operating costs. Already, in some locations, rate increases from 2000 to 2012 outpaced water reductions, and our costs will continue to rise if we don't make further improvements. From a business perspective, it is important to strategically reduce water consumption now, before we see significant price increases or the implementation of further water use restrictions.

Increasing water scarcity means industrial needs can be at odds with community and environmental needs. Industrial facilities in water-stressed areas will have reduced access to water and/or may endure rising water costs. Working on solutions helps us to secure a "license to operate" in diverse global locations and can enhance our reputation in local communities.

Our suppliers face similar risks in terms of the increasing cost and competition for water and community concerns in water-scarce areas.

Another possible risk for Ford is the water intensity of alternative fuels, such as biofuels and electricity, which may require greater amounts of water to produce than gasoline and diesel fuel. We are continuing to assess the consequences for water quality and availability that may result from the increased production of electrified vehicles, including hybrid, plug-in hybrid and battery electric vehicles.

Water services are the most capital-intensive of all utilities, requiring more infrastructure for the delivery of water than the delivery of electricity, for example. According to the World Bank, a $400 billion to $600 billion investment will be needed in global water infrastructure in the next two decades. Meanwhile, the United Nations Educational, Scientific and Cultural Organization (UNESCO) estimates that between $111 billion and $180 billion will be needed per year to meet Millennium Development Goals for sanitation by 2015.[1]

In the U.S., the Environmental Protection Agency estimates the country will need to invest $202.5 billion over the next 20 years in wastewater facilities, and an additional $122 billion to ensure safe drinking water supplies.

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1. In 2000, the United Nations set eight goals for development, called the Millennium Development Goals, to improve the global human condition by 2015.

Operating in Water-Stressed Regions

Ford has been growing in many areas of the world where water access and availability are a concern. We have identified which of our operations are located in water-stressed regions using data from the World Resources Institute's EarthTrends project. Water-stressed regions are considered to be those with a per capita water supply of less than 1,700 cubic meters per year. According to our analysis, about 10 percent of our operations are located in regions that are considered to be at risk.

Our facilities in Mexico are located in water-stressed regions; our manufacturing facility in Cuautitl?n, Mexico, for example, is already subject to water-withdrawal limitations. Several of our facilities in our Asia Pacific and Africa region are in areas that are currently water-stressed, or are expected to be in the near future.

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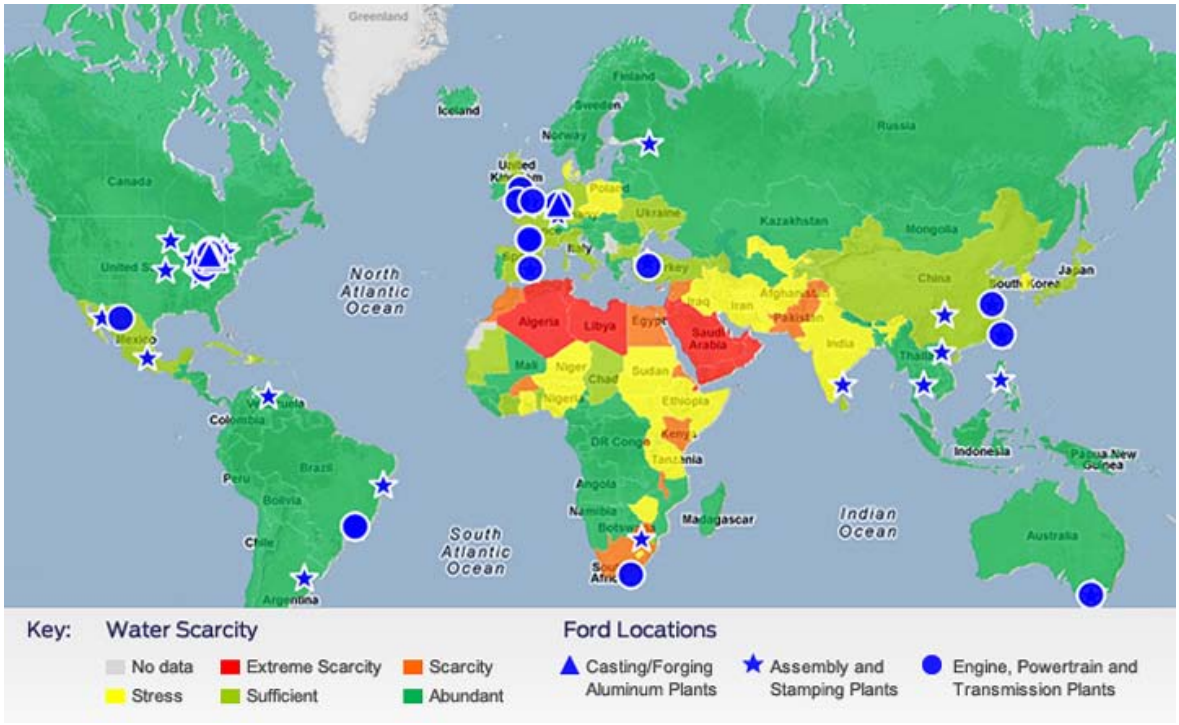
Ford Operations: 2025 Projected Annual Renewable Water Supply per Person



wbcsd

Ford used the Global Water Tool developed by the World Business Council for Sustainable Development (WBCSD) to evaluate which of our operations are projected to be in water-scarce regions by 2025. According to the analysis, approximately 26 percent of our operations are projected to be in such regions (defined as areas of extreme scarcity or scarcity). The WBCSD's free tool enables companies to map their water use and assess water-related risks. For more information on the tool and how it works, see the WBCSD website.

Sources: World Business Council for Sustainable Development's Global Water Tool (GWT) v2. GWTv2 uses the Food and Agriculture Organization of the United Nations AQUASTAT dataset.

Water Strategy Approach

Water conservation is increasingly important to our stakeholders and to our own operations, particularly in our areas of operation that face challenges such as drought and significant population growth. By reporting our progress, we support positive social change and reduce the environmental impacts of our facilities.

Ford's water strategy, which looks at our water use from both an environmental and a social perspective, is evaluated at the highest levels of our Company. Our Board of Directors reviews our water-related progress annually.

We have established a cross-functional team from across Ford divisions, including our Environmental Quality, Manufacturing, Purchasing, Research and Community Engagement functions, to review water issues in a holistic way. This team has been meeting with a variety of groups – such as the Interfaith Center on Corporate Responsibility, the U.N. Global Compact, the U.S. State Department and the Global Water Challenge – to gain a better appreciation of outside stakeholder perspectives.

Our Platforms for Water Leadership

We're aiming to be an industry leader on issues of water. To do so, we're improving our own operational footprint, engaging with our communities, and working with researchers, policy makers and nongovernmental organizations on ways to make an impact.

Water as a Community Issue

For many years, we have demonstrated our commitment to water issues primarily through our own operations, focusing on water efficiency, effluent quality and water reuse. But we also are committed to moving beyond our own fence line to address water issues within our communities of operation. We are working with stakeholders to better understand issues around water accessibility and sanitation, especially in water-stressed communities.

We are committed to mobilizing opportunities for communities in the developing world through clean water. We're investing in community water stewardship projects around the world, especially in areas where access to potable water is limited.

Projects vary by location. In Cambodia, Ford and our long-time partner, RM Asia, provided $70,000 to construct dozens of community water wells in villages where residents lack access to clean, potable water. The new wells, which are expected to be completed by the end of 2013, will also provide residents with sufficient water supplies to irrigate their fields. Ford India recently helped to refurbish two schools in villages near our plant in Maraimalai Nagar, a suburb of the southern city of Chennai. The refurbishment included new sanitation facilities and drinking water fountains.

Our Ford Motor Company Volunteer Corps, meanwhile, is placing a priority on water-based community projects during our Global Week of Caring and Accelerated Action Days. In 2012, the Ford Fund supported 19 water-related projects in China, Indonesia, Thailand, the Philippines, India, Germany and South Africa. In arid southwest China, 60 Ford employees from Nanjing teamed up with The Amity Foundation to help eight families build individual water cellars to capture water in the rainy season. In Indonesia, Ford employees helped install a machine that processes salt water into clean, potable water for 5,000 area residents. In the Philippines, Ford volunteers helped construct water collection stations for 250 villagers.

(See the Communities section for more on Ford's volunteer programs.)

Related links

This Report

- Greening Our Operations
- Communities
- Ford Volunteer Corps

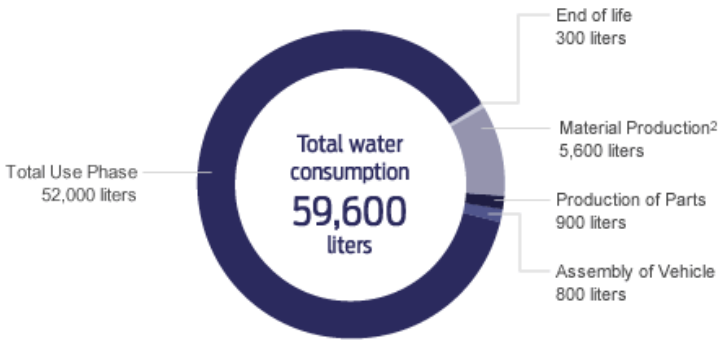
Water Consumption in the Vehicle Lifecycle

To better assess our water-related impacts, we have been working to quantify water consumption over the life of a typical light-duty vehicle in the U.S. The Georgia Institute of Technology's Sustainable Design and Manufacturing program conducted a literature survey and analysis that included water used in material production, production of parts, vehicle assembly, vehicle use (fuel production and distribution) and vehicle disposal at end-of-life. Georgia Tech has also worked with Ford on a number of other multidisciplinary issues related to sustainable development.

The analysis found that the greatest water consumption occurs during the use phase, when consumers are driving. This is largely due to the amounts of water required for fuel production. In the supply chain, the production and processing of metals (in particular steel and aluminum) require the most water. Identifying which portions of the supply chain are most water-intensive allows us to better assess the business risk associated with using suppliers in potentially water-stressed areas.

Estimation of water use in the lifecycle of a vehicle is a difficult task because of incomplete data sets, as well as non-standardized definitions (e.g., for "water use" and "water consumption") used in earlier studies. Although water use is typically metered at the factory level, water consumption (i.e., water lost through evaporation and/or incorporation into a material, part and/or product) is much harder to quantify and requires data on water discharge in addition to water input. The Georgia Tech study was based on the average vehicle composition from an older study that did not fully reflect the material composition of current vehicles. We view the latest data as preliminary, but directionally correct. We are working to gain a better understanding of water use and consumption in all aspects of the vehicle lifecycle (including alternative fuels such as biofuels and new vehicle technologies such as electric vehicles) and plan to report updated assessments in the future.

Lifecycle Water Consumption[1]



Stage	Approximate Water Consumption (Liters)	Percentage
Material Production[2]	5,600	9%
Production of Parts	900	1.5%
Assembly of Vehicle	800	1.3%
Total Use Phase	52,000	87%
End of Life	300	0.5%
Total	59,600	100%

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Notes to Data

1. Source: B. Bras, F. Tejada, J. Yen, J. Zullo, T. Guldberg, *Quantifying the Life Cycle Water Consumption of a Passenger Vehicle*, SAE Technical Paper 2012-01-0646.
2. Indirect, upstream water consumptions were not included in the material production stage.

Water Consumption = Freshwater withdrawals that are evaporated or incorporated in products and waste.

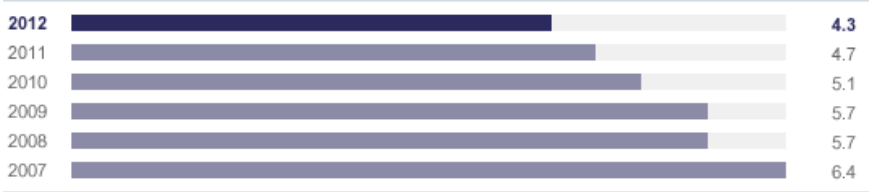
Water Use = All water that goes into a system. Most of this typically leaves the system as wastewater.

Data

DATA ON THIS PAGE

A. Global Water Use per Vehicle Produced

Cubic meters per vehicle produced



2007	2008	2009	2010	2011	2012
6.4	5.7	5.7	5.1	4.7	4.3

Data managed through the Global Emissions Manager database

Notes to Data

In 2012, we restated data for 2000-2011 to account for acquisitions and divestitures of facilities.

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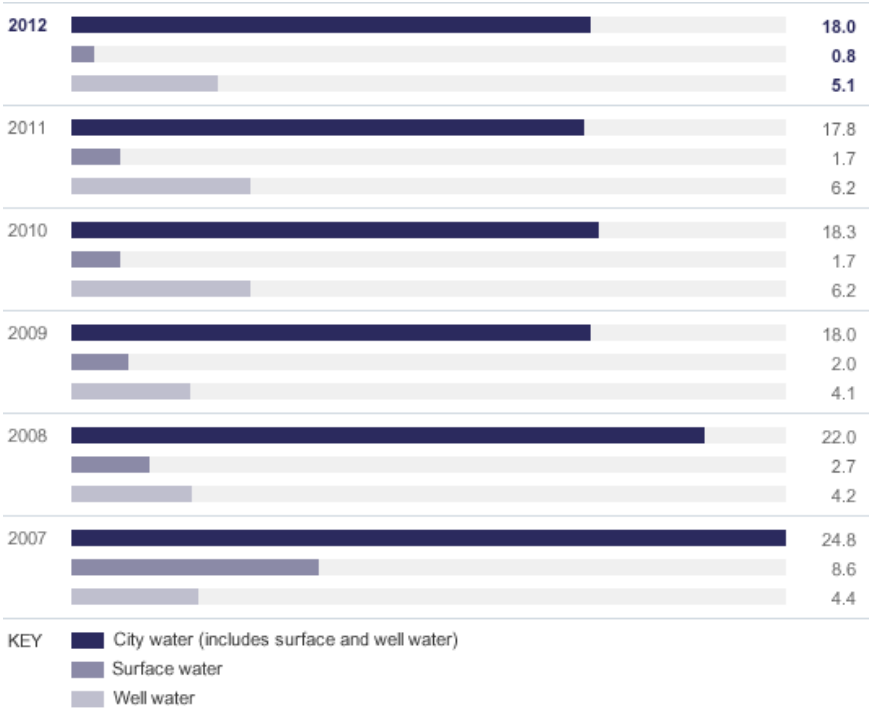
B. Global Water Use by Source

Million cubic meters



	2007	2008	2009	2010	2011	2012
City water (includes surface and well water)	24.8	22.0	18.0	18.3	17.8	18.0
Surface water	8.6	2.7	2.0	1.7	1.7	0.8
Well water	4.4	4.2	4.1	6.2	6.2	5.1

Data managed through the Global Emissions Manager database

Notes to Data

In 2012, we restated data for 2000-2011 to account for acquisitions and divestitures of facilities.

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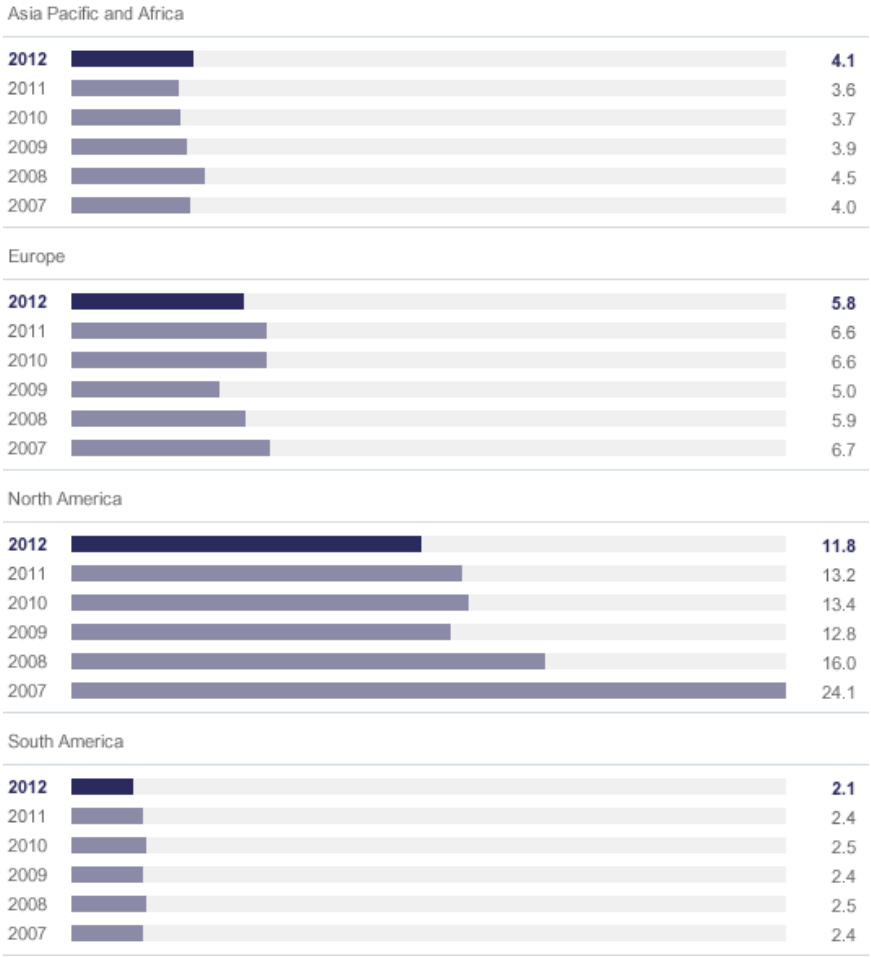
C. Regional Water Use

Million cubic meters



	2007	2008	2009	2010	2011	2012
Asia Pacific and Africa	4.0	4.5	3.9	3.7	3.6	4.1
Europe	6.7	5.9	5.0	6.6	6.6	5.8
North America	24.1	16.0	12.8	13.4	13.2	11.8
South America	2.4	2.5	2.4	2.5	2.4	2.1

Data managed through the Global Emissions Manager database

Notes to Data

In 2012, we restated data for 2000-2011 to account for acquisitions and divestitures of facilities.

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Case Study:

Ford Manufacturing Water Saving Technologies

Ford has set a goal of decreasing water use per vehicle by 30% from 2009 to 2015. This graphic highlights some of the technologies that will help us reach our goal.

Three-Wet Paint Technology

This technology enables consolidation of painting activities in an integrated booth, offering the potential to eliminate one booth water wash section, depending on plant design.

Dry Paint Overspray System

This system eliminates water usage from the painting process, resulting in an 80% water savings for air conditioning/air tempering and 100% water savings from paint over-spray separation, based on production volume of 158,000 units per year.

Minimum Quantity Lubricant (MQL)

MQL uses an extremely small amount of oil versus conventional wet machining. For a typical production line of 450,000 vehicles, MQL can save 282,000 gallons of water per year.

Internal Water Metering

We are increasing usage of internal water metering to identify additional water saving opportunities and drive conservation behaviors to the department level. This has the potential to save approximately $75,000 on average per plant globally.

Sustainable Stormwater Practices

Where opportunity presents itself, we continue to utilize sustainable stormwater management practices, such as vegetated roofs and porous pavers.

J. Carl Ganter

Managing Director and Co-Founder Circle of Blue

On December 24, 1968, Apollo 8 astronaut William Anders took what became one of the most famous pictures in history: a breathtaking image of a tiny, vulnerable blue planet hanging in space. Twenty-five years later, Jerry Linenger flew on the space shuttle Atlantis to the Russian space station Mir, where he would spend five months in orbit around Earth.

“Looking out the window, I could see the great sources of freshwater on the planet,” he told me. “Lake Baikal. The Great Lakes. The mighty rivers of the world – Nile, Tigris, Euphrates, Amazon. But still, when stepping back and looking at the big picture, not so much different from our little orbiting space station. A closed ecosystem, with only so many sources of life-sustaining water. And all the creatures of Earth, just like the three of us circling it, all dependent on water.”

Water was so scarce aboard Linenger’s fragile ship that he spent countless hours studying where he wanted to live down below. Of anywhere in the world, he chose the shoreline of Lake Michigan, a place with abundant water resources.

But today, on this small planet – seen whole for the first time four decades ago – we have systemic failure. A global freshwater crisis.

The world’s demand for freshwater is growing so fast that water scarcity is disrupting energy production, triggering food shortages, upending economic development and threatening political stability. The impacts are being felt now in the U.S., which lost a full point of gross domestic product in 2012 due to a severe, ongoing drought, as well as in Asia and the Middle East, where recent droughts and floods triggered serious disruptions and political unrest.

Perhaps the greatest tragedy of the 21st century is that as many as 800 million people around the world don’t have access to safe drinking water, and more than 5,000 children die each day from waterborne diseases.

Fortunately, water is one of the easiest of our global challenges to talk about because it’s the easiest to understand. You can go without electricity if need be. You can survive for weeks without food. But you can’t live more than a few days without water.

Most water-related challenges can be solved with hard work. We can break down traditional silos and think more holistically about the intersections among water, food, energy and climate, and about how we can develop solutions that reach beyond corporate fences and political boundaries.

When we do bring safe water and sanitation to places that need it, we see remarkable improvements. Children are able to go to school because they don’t need to spend hours every day in search of drinking water, which helps break the cycle of poverty and illness. When we fix the water challenge, we fix so many other problems.

But the water crisis is subtle, not sexy. It is slow to unfold, and, until the taps run dry and the crops wither, it’s not very relevant to those who have the most power to avert it. Until the water issue becomes dire, it’s not breaking news.

This critical moment – when the supply-and-demand balance of water, food and energy are colliding – requires a new scale of data, front-line reporting, collaborative science, social engagement and accelerated solutions.

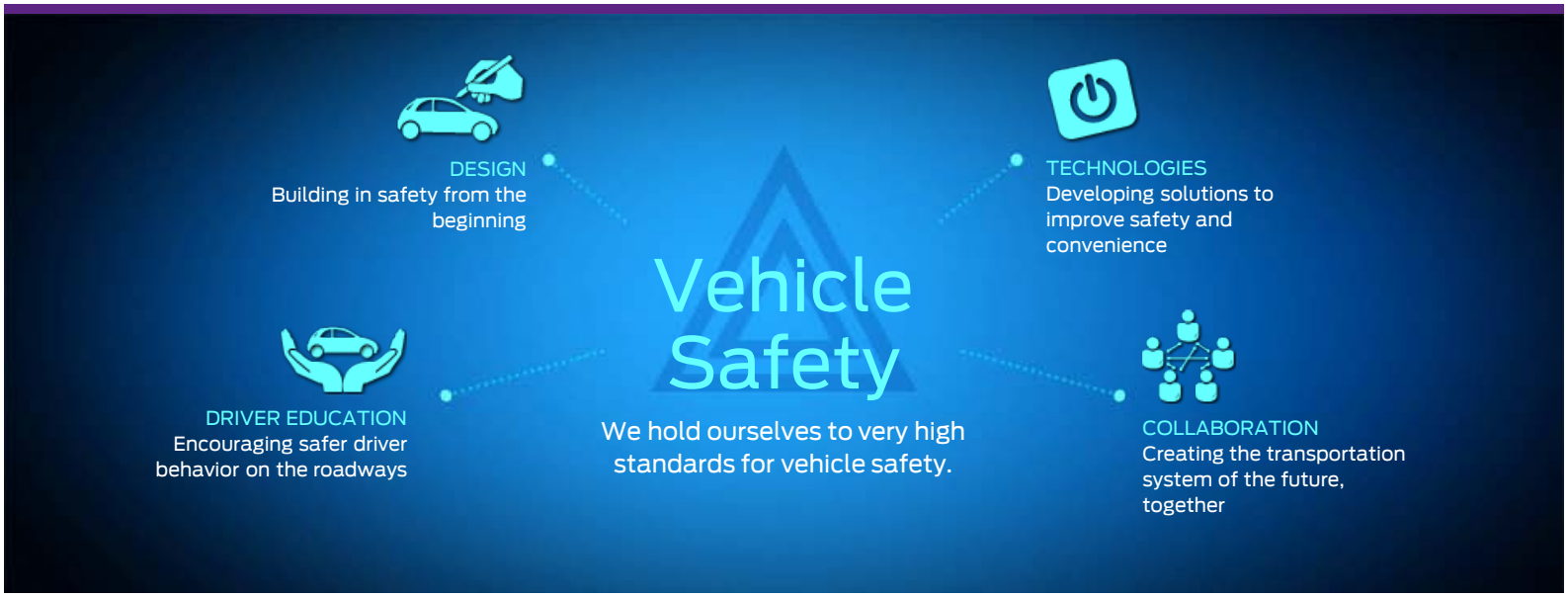
The media, businesses and governments need to do a better job connecting the dots and demonstrating how water issues affect us today and into the future. At this pivotal point, we need much greater engagement from the corporate sector. Beverage companies have, for obvious reasons, been active in the water arena. Without access to water, they don't have a product. Their supply chains hang on a tenuous blue thread.

The practice of water risk assessment is reaching into other sectors, especially manufacturing and consumer products. More and more firms are making their products more resilient to water disruptions, reducing their water use, and playing the role of advocate and educator on water issues within their communities. Indeed, those companies that are moving the needle furthest and fastest on water issues have embraced the risks within their supply chains and turned them into competitive opportunities.

But how do we bring governments into the conversations so they, too, start acting systemically and create a positive regulatory environment? Most governments simply are not prepared for the threats that water issues may pose to law, policy and stability. Business needs to play a role, leading by example and making the solutions – and the risks of inaction – visible.

From orbit, astronaut Jerry Linenger said he could watch the dust storms of Inner Mongolia blow across the steppes toward Beijing, and on to Los Angeles. Water, drought and pollution know no boundaries.

I co-founded Circle of Blue in 2000 to reach across these lines, to use world-leading journalists, scientists and data experts to tell the world's most important stories. In a decade, we've seen remarkable progress on the water front. We are moving into an age of solutions. More and more, we realize that surviving, even thriving, in a new waterscape requires us to use the right lenses to view the connected issues and shape cohesive responses. Innovation is built upon optimism, and the greatest innovations often occur when we face the greatest challenges.



At Ford, we hold ourselves to very high standards for vehicle safety. The fact is, vehicle safety is a critical part of our brand promise to Go Further. We aim to give customers peace of mind and make the world safer by developing advanced safety technologies and making them available across a wide range of vehicles.

We are specifically committed to:

- designing and manufacturing vehicles that achieve high levels of performance in real-world safety and in government- or nonprofit-sponsored crash tests and offer innovative safety and driver assist technologies;
- meeting or exceeding all regulatory requirements for safety;
- providing information, educational programs and advanced technologies to assist in promoting safe driving practices;
- playing a leadership role in vehicle safety research and innovation; and
- playing a leadership role in research and development relating to “connected vehicles.”

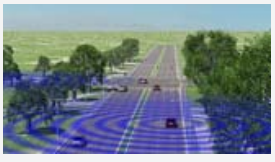
Ford has delivered on these commitments and remains among the global leaders in vehicle safety. To date, for example, Ford Motor Company has earned a total of 91 “Top Safety Picks” from the Insurance Institute for Highway Safety (IIHS) – more than any other manufacturer in the eight-year history of that crash testing program.[1] To earn a Top Safety Pick, a vehicle must receive a rating of “good” in offset frontal impact, side impact, rear impact and roof strength evaluations, and offer electronic stability control. Starting in 2013, the IIHS added a new rating of “Top Safety Pick+”. To achieve this rating, a vehicle must receive a “good” in the above tests and a “good” or “acceptable” in a new small overlap rigid barrier test.

See the next page for notable safety-related highlights from 2012 and early 2013.

93 percent
of 2013 model year Ford Motor Company vehicle nameplates tested were named IIHS Top Safety Picks

Driver Education

In 2012, Ford’s flagship driver education program – Ford Driving Skills for Life – visited more than 175 high schools in 10 U.S. states and Puerto Rico.



Connected Vehicles

We are taking part in numerous research projects – on our own

and in cooperation with others – to develop and demonstrate “connected vehicle” technologies.

1. Historic totals include all brands and entities owned and controlled by the manufacturer during the 2006–2013 calendar years. For Ford Motor Company, this includes Ford and Lincoln, as well as Mercury (through the 2011 model year) and Volvo (through the 2010 model year). Totals do not include Mazda.

Highlights

Ford's recent safety highlights include the following:

- For the 2013 model year, 13 Ford Motor Company vehicles earned Top Safety Picks from the Insurance Institute for Highway Safety (IIHS): the Ford Fiesta (sedan and hatchback), Focus, Fusion, Taurus, Edge, Explorer, Escape, Flex and F-150 (crew cab) and the Lincoln MKZ, MKS, MKT and MKX.
- Two Ford Motor Company vehicles earned a Top Safety Pick+ for the 2013 model year: the Ford Fusion and Lincoln MKZ.
- The Ford Fusion has now been an IIHS Top Safety Pick for five years in a row (2009–2013).
- Also for the 2013 model year, seven Ford Motor Company vehicles earned the highest possible Overall Vehicle Score of five stars in the New Car Assessment Program (NCAP) of the U.S. National Highway Traffic Safety Administration (NHSTA). These five-star vehicles include the Ford Focus, Focus BEV, Explorer, Taurus and Fusion and the Lincoln MKS and MKZ.
- In the 2012 European NCAP assessments, the Ford B-MAX, Fiesta and Kuga earned five-star safety ratings. In addition, the B-MAX and Kuga received Euro NCAP's Best in Class recognition for the highest safety performance scores in their vehicle segments.
- The new Ford Transit Custom and Tourneo Custom are the first van and "kombi" (i.e., multi-purpose vehicle), respectively, to achieve five-star ratings in the new Euro NCAP heavy vehicle assessment. The Transit also received Euro NCAP's Best in Class recognition for the highest safety performance score in its segment.
- Ford has an industry-leading total of seven Euro NCAP Advanced rewards for our Lane Keeping Aid, Active City Stop, Forward Alert, Lane Keeping Alert, MyKey®, Emergency Assistance and Driver Alert technologies.
- In the Latin NCAP, the new Ford Fiesta achieved a four-star rating for adult protection and a four-star rating for child protection.
- The 2013 Ford Taurus Police Interceptor is the only police pursuit sedan on the market that has been tested in 75-mph rear-end crash tests.
- Our available rear-seat inflatable safety belts, launched on the 2011 Ford Explorer, are an automotive industry exclusive and have won numerous awards. In the 2013 model year, we expanded the availability of these safety belts in North America to the Ford Flex and the Lincoln MKT and MKZ.
- Lane Keeping System, a driver assist feature, was launched in 2011 in Europe on the Ford Focus. Its availability has been expanded to North America on the 2013 Lincoln MKS, MKT and MKZ and the Ford Explorer and Fusion.
- For the 2013 model year, we expanded the availability of Curve Control, a driver assist technology that helps slow the vehicle when it senses the driver is taking a curve too quickly. In North America, Curve Control is now offered on the Ford Explorer, Taurus, Flex and Escape, as well as the Lincoln MKS and MKT. In Europe, it is available on the Ford Kuga.

Related links

This Report

- Accident Avoidance and Driver Assist Technologies

Vehicle Websites

- Ford Fiesta
- Ford Focus
- Ford Focus Electric
- Ford Fusion
- Ford Taurus
- Ford Escape
- Ford Edge
- Ford Explorer
- Ford Flex
- Ford F-150
- Ford B-MAX
- Ford Kuga
- Ford Transit Custom
- Ford Tourneo Custom
- Lincoln MKZ
- Lincoln MKX
- Lincoln MKS
- Lincoln MKT

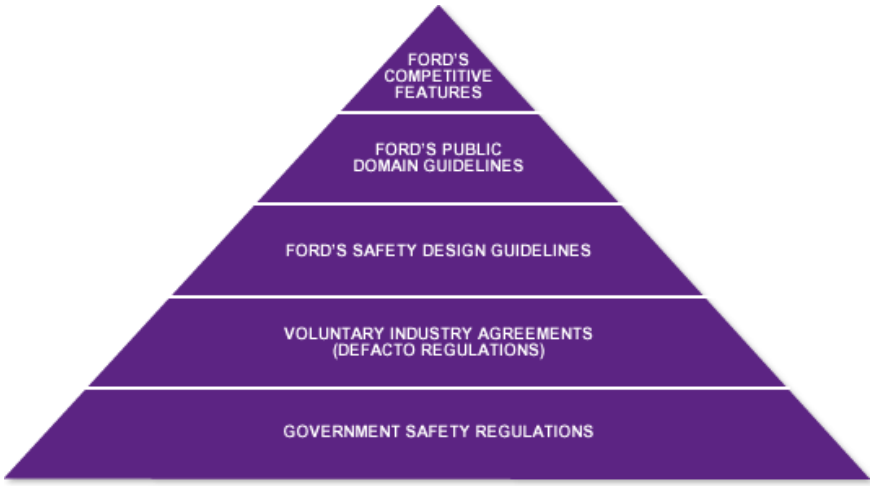
External Websites

- European New Car Assessment Program
- Insurance Institute for Highway Safety
- Latin New Car Assessment Program
- U.S. National Highway Traffic Safety Administration's New Car Assessment Program

How We Manage Vehicle Safety

At Ford, we design and manufacture vehicles that achieve high levels of vehicle safety for a wide range of people over a broad spectrum of real-world conditions. Real-world safety data, driver behavior, research, regulatory requirements and voluntary agreements provide much of the input into our safety processes, including our Safety Design Guidelines (SDGs) and Public Domain Guidelines (PDGs). (See graphic below.) The SDGs are Ford's stringent internal engineering design targets that exceed regulatory requirements and define additional requirements that are not regulated. The PDGs are Ford guidelines that focus specifically on helping to ensure that our vehicles earn high ratings in relevant public domain assessments (i.e., vehicle safety assessments performed by government or nonprofit entities).

Our PDGs are continually reviewed for possible revisions to address ongoing changes in major public domain vehicle testing programs around the world. Please see the Public Domain Ratings case study for information on these programs.



Internally, Ford utilizes engineering analyses, extensive computer modeling, and crash and sled testing to evaluate the performance of vehicles and individual components. These rigorous evaluations help to confirm that our vehicles meet or exceed regulatory requirements and our own even-more-stringent internal guidelines. Our state-of-the-art crash-test facilities include the Safety Innovation Laboratory in Dearborn, Michigan, and the extensive crash-test facilities in Merkenich, Germany, and Dunton, England. We also operate a high-tech, full-motion driving simulator in Dearborn called VIRTTEX, for VIRtual Test Track EXperiment.

Haddon Safety Matrix

We use the Haddon Safety Matrix to take a holistic view of the factors that may affect vehicle safety. (The matrix was developed by William Haddon, a former administrator of the U.S. National Highway Traffic Safety Administration and also former president of the Insurance Institute for Highway Safety.) The Haddon Matrix illustrates how traffic safety can be the product of complex interactions among the driver, the vehicle and the driving environment.

The Haddon Matrix is used to look at crashes in terms of causal and contributing factors, including human behavior, vehicle safety and the driving environment. Each factor is then considered in the pre-crash, crash and post-crash phases. In the pre-crash phase, the focus is to help avoid the crash. In the crash and post-crash phases, the primary objective is to help reduce the risk of injury to occupants during and after a collision. Another goal is to minimize the amount of time that

Related links

This Report

- Case Study: Public Domain Ratings

elapses between the crash and when help arrives.

	Human Behavior	Vehicle Safety	Environment
			
Pre-Crash Accident avoidance	• Research • Education • Advocacy	• Crash avoidance technologies • Security	• Road design for accident avoidance • Traffic control
Crash Occupant protection	• Technology and proper use	• Restraints • Structures that absorb and reduce crash energy and intrusion	• Road design for injury mitigation • Research
Post-Crash Injury mitigation	• Telematics	• Post-crash notification	• Emergency medical services
Examples of Ford Actions	• SYNC® technology • MyFord Touch® driver connect technology • MyKey® • Ford Driving Skills for Life	• Accident avoidance features • Inflatable safety belts • Roll Stability Control®	• Accident research • Development of “vehicle-to-infrastructure” communication systems

Encouraging Safer Driving

Driver behavior is a key contributing factor in many vehicle crashes.[1] We at Ford have developed an array of programs and technologies that help to encourage safer behavior on the roadways, for both experienced and novice drivers.

Ford Driving Skills for Life (Ford DSFL), our flagship driver-education program, demonstrates our commitment to help new drivers to improve their motoring skills. In the U.S., Ford DSFL focuses on teen drivers; in our Asia Pacific and Africa markets, the program is aimed at novice drivers of all ages.

In 2012 in the U.S., Ford DSFL visited more than 175 high schools in ten states and Puerto Rico, where we held assemblies, safe driving activities and hands-on training. We trained more than 9,000 students and parents with hands-on instruction and reached nearly 20,000 students with safe driving messaging through school assemblies. The Ford DSFL program delivers a full day of multifaceted activities that build young drivers' skills in four key areas: driver distraction, speed/space management, vehicle handling and hazard recognition. Ford DSFL continues to provide interactive web-based training called "The Academy" at www.drivingskillsforlife.com, and offers free materials upon request for students, educators, parents and community organizations.

In September 2012, Ford DSFL collaborated with *Variety* to encourage safe driving at the annual Power of Youth event, which honors the charitable efforts of Hollywood's young entertainers. Ford DSFL was onsite at Paramount Pictures Studios for the event, taking hundreds of teens through a driver distraction course, providing safe driving tips and demonstrating new technologies designed to help make driving more comfortable, convenient and safe for young drivers.

Ford Driving Skills for Life, our driver education program, collaborated with Variety to encourage safe driving at an event honoring the charitable efforts of Hollywood's young entertainers.

In Ford's global markets, Ford DSFL celebrated its fifth year training newly licensed drivers in Asia and Africa, with programs in China, India, Taiwan, South Africa, Thailand, Vietnam, the Philippines, Indonesia and Malaysia. Also in 2012, a pilot Ford DSFL program took place in Vancouver, British Columbia, and we also launched the program for the first time in the Middle East – in the United Arab Emirates. In all of the global markets in which Ford DSFL operates, the program is tailored to reflect the local driving environment and road conditions. So far, more than 63,000 people have participated in the program across the global regions.

2012 marked the fifth year that Ford DSFL participated in the Operation Teen Safe Driver program in partnership with the Illinois Department of Transportation, Secretary of State and state police. The program gets high school students directly involved in safe driving behaviors by challenging them to develop and implement teen safe driving community-awareness campaigns using Ford

Related links

Ford Websites

» Ford Driving Skills for Life

External Websites

» Operation Teen Safe Driving

DSFL resources. Since the program's launch in 2007, teen vehicle crash deaths in Illinois have decreased by 48 percent. In 2012 in Michigan, Ford DSFL launched "Strive 4 a Safer Drive," a pilot program modeled after the Illinois program.

In 2013, Ford DSFL will take its program to more than 200 high schools in eight U.S. states, reaching more than 40,000 students. Ford DSFL will also continue its global expansion, including developing programs in major European markets as well as Canada.

On the technology side, the Ford MyKey® system is an innovative technology designed to help parents encourage their teenagers to drive more safely. MyKey allows owners to program a key that can limit the vehicle's top speed to 65, 70, 75 or 80 mph and also can invoke SYNC's Do Not Disturb feature, which sends incoming phone calls and text messages to the paired phone's mailbox. MyKey encourages safety-belt usage by enabling Ford's Belt-Minder® to chime every minute indefinitely until both of the front passengers are buckled in, rather than ceasing after five minutes, and also through a "no belt/no tunes" feature that mutes the audio system until the belt is buckled. In addition, MyKey provides an earlier low-fuel warning (at 75 miles to empty rather than 50); sounds speed-alert chimes at 45, 55 or 65 mph; and will not allow manual override of other safety systems. MyKey is available on nearly all Ford Motor Company retail vehicles in North America, and its availability is expanding to other regions.

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1. U.S. Department of Transportation, National Highway Traffic Safety Administration, *National Motor Vehicle Crash Causation Survey: Report to Congress* (Washington, DC: U.S. DOT, July 2008).

Safety and Driver Assist Technologies

Because of our commitment to vehicle safety, Ford offers innovative features and technologies on our Ford and Lincoln vehicles. In this section we discuss three categories of technologies and provide a few examples of Ford's offerings in each. The categories are:

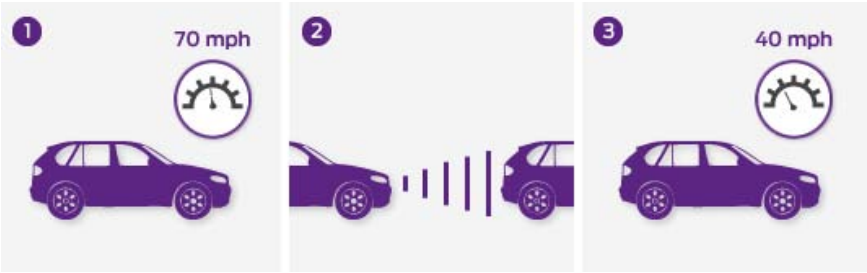
- Accident Avoidance and Driver Assist Technologies
- Occupant Protection Technologies
- Post-Crash Response Technologies

Accident Avoidance and Driver Assist Technologies

A variety of Ford technologies, in addition to each vehicle's handling and braking capabilities, can assist drivers by helping the driver control the vehicle or alerting the driver to potential risks. Also, these technologies can support everyday driving tasks by improving comfort and reducing demands on the driver. The all-new 2013 Ford Fusion is just one of the vehicles in the Ford lineup to offer a portfolio of these types of technologies.

The all-new 2013 Ford Fusion.

Adaptive Cruise Control



The Fusion offers Adaptive Cruise Control (ACC), for example. ACC helps drivers maintain a pre-set distance from the vehicle in front of them, using a radar module mounted at the front of the vehicle that measures the gap and closing speed to the vehicle ahead. The system automatically adjusts the speed of the car to help maintain a pre-set distance from the vehicle in front. Radar-based ACC is also available on the Ford Taurus, Edge, Flex and Explorer and the Lincoln MKZ, MKS, MKX and MKT.

Related links

Vehicle Websites

- Ford Focus
- Ford Fusion
- Ford Taurus
- Ford Escape
- Ford Edge
- Ford Explorer
- Lincoln MKZ
- Lincoln MKX
- Lincoln MKS
- Lincoln MKT

Ford.co.uk

- Ford Fiesta
- Ford B-MAX
- Ford Focus
- Ford C-MAX
- Ford Mondeo
- Ford Kuga
- Ford S-MAX
- Ford Galaxy
- Ford Transit
- Ford Tourneo Custom

Collision Warning with Brake Support

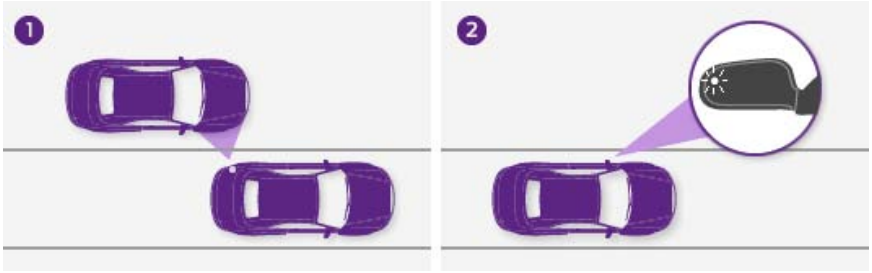
The all-new Fusion also offers Ford's Collision Warning with Brake Support technology, which uses the same radar module as the ACC to detect range and speed. Collision Warning with Brake Support activates a visual and audible warning when the system detects a high risk of collision with the vehicle in front. In addition, the brake system is pre-tensioned and the "servo boost" assistance system is modulated to provide faster brake performance (e.g., as soon as the driver lifts the gas pedal), if required by the driver. If the sensor becomes blocked by snow, ice or mud, the driver will receive a notice of reduced or suspended functionality. In addition to being available on the Fusion, this technology is available in North America on the Ford Taurus, Edge, Flex and Explorer and the Lincoln MKS, MKX, MKZ and MKT, and in Europe on the Ford Mondeo, S-MAX, Galaxy and Focus.

Lane Keeping System

The Fusion also offers Ford's Lane Keeping System, which consists of three elements to help a driver maintain proper lane position: Driver Alert, Lane Keeping Alert and Lane Keeping Aid. Using a small, forward-facing camera behind the inside rearview mirror, the system "looks" down the road, monitoring lane lines to determine that the vehicle remains in its lane. Driver Alert computes a "vigilance level" for the driver and displays it in the instrument cluster upon request. The vigilance judgment is based on statistical analysis of lane information collected by the forward-looking camera and the vehicle's yaw behavior. If the system-calculated vigilance level falls below a certain level (e.g., if the driver gets tired), visual and audible warnings are given. Lane Keeping Alert is designed to warn the driver, via a three-pulse vibration in the steering wheel, when the front-view camera detects that an unintentional lane departure is happening. Lane Keeping Aid goes a step further, applying a steering torque in the direction the driver needs to steer to keep the vehicle in the current lane.

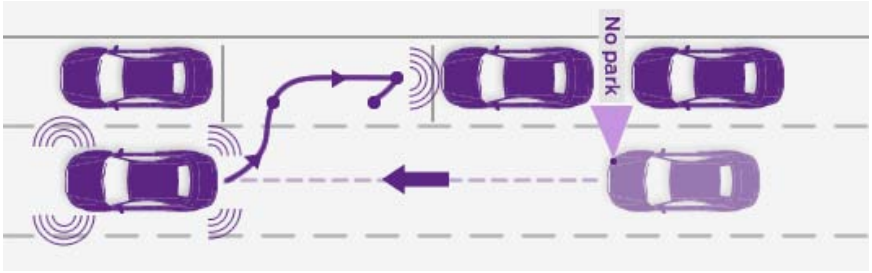
Lane Keeping System can be activated and deactivated manually via a switch on the turn indicator stalk. When the system is activated, drivers have the option of choosing Alert mode, Aid mode or a combination of both. The system is automatically deactivated at speeds below 38 mph, so as not to interfere in urban conditions when intentional lane crossing is relatively frequent. In North America, Lane Keeping System is available on the 2013 Lincoln MKS, MKT and MKZ and the 2013 Ford Explorer, in addition to the Fusion. In Europe, it is available on the Ford Focus, Kuga and C-MAX. Also, Lane Keeping Alert and Driver Alert are available in Europe on the new Ford Transit, Turneo Custom, Mondeo, S-MAX and Galaxy.

Blind Spot Information System (BLIS) with Cross Traffic Alert



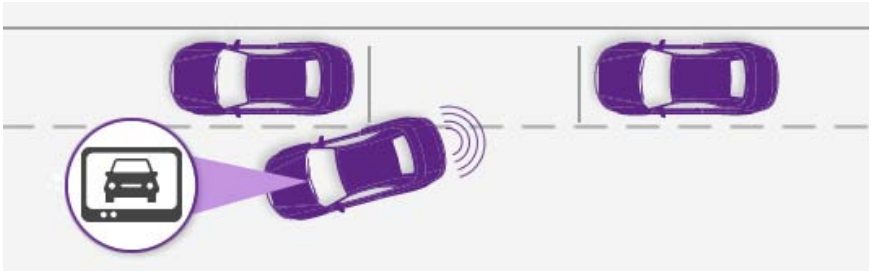
The Fusion's available Blind Spot Information System (BLIS) with Cross Traffic Alert uses rear corner-mounted, side-looking radar that detects other vehicles around the car and illuminates an indicator lamp in the rearview mirror. When backing out of a parking space, the same sensors can detect vehicles approaching from the sides that may not be visible to the driver. BLIS is also available on the Ford Taurus, Escape, Edge, Flex and Explorer and the Lincoln MKZ, MKS, MKX and MKT. BLIS (without the Cross Traffic Alert element) is available in Europe on the Ford Mondeo, S-MAX, Galaxy, C-MAX, Focus and Kuga.

Active Park Assist



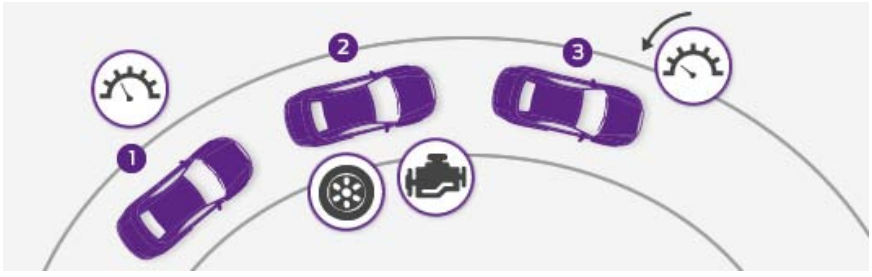
The new Fusion also offers Active Park Assist. Active Park Assist uses ultrasonic sensors, while the driver is slowly driving near parking spots, to measure the distance between cars. When a suitable parking space is found, Active Park Assist can steer the car into the parking space while the driver controls the shifting, accelerator and brake. Active Park Assist is also available on the Ford Focus, Fusion, Taurus, C-MAX, Escape, Flex and Explorer, as well as the Lincoln MKS, MKZ and MKT and in Europe on the Kuga, Focus and C-MAX.

Rear View Camera



Finally, the Fusion offers a Rear View Camera, which transmits an image of what is behind the vehicle when it is shifted in reverse. Rear View Camera is available on every Ford and Lincoln vehicle in North America. In Europe, Rear View Camera is offered on the Ford Focus, B-MAX, C-MAX, S-MAX and Kuga.

Curve Control



In addition to the technologies featured on the new Fusion, Ford offers several other accident avoidance and driver assist technologies on some of our other vehicles. Curve Control, for example, is designed to sense when a driver is taking a curve too quickly. In those situations, it rapidly reduces engine torque and can apply four-wheel braking, slowing the vehicle by up to 10 mph in about a second. The technology is designed to be effective on wet or dry pavement, and is expected to be helpful when drivers are entering or exiting freeway ramps with too much speed. In North America Curve Control is available on the Ford Explorer, Taurus, Flex and Escape, as well as the Lincoln MKS and MKT. In Europe, it is available on the Ford Kuga. A majority of Ford's North American products will offer Curve Control by 2015.

Active City Stop

Using a forward-looking radar sensor, Active City Stop is designed to detect objects in front of the car and constantly (50 times per second) calculate the braking force required to avoid a collision. If the estimated braking force exceeds a given level without the driver responding, the danger of a collision is considered imminent and the system automatically reduces throttle input and applies the car's brakes. The system is designed for speeds below 20 mph (30km/h). Active City Stop is available in Europe on the Ford Kuga, Focus, Fiesta and C-MAX.

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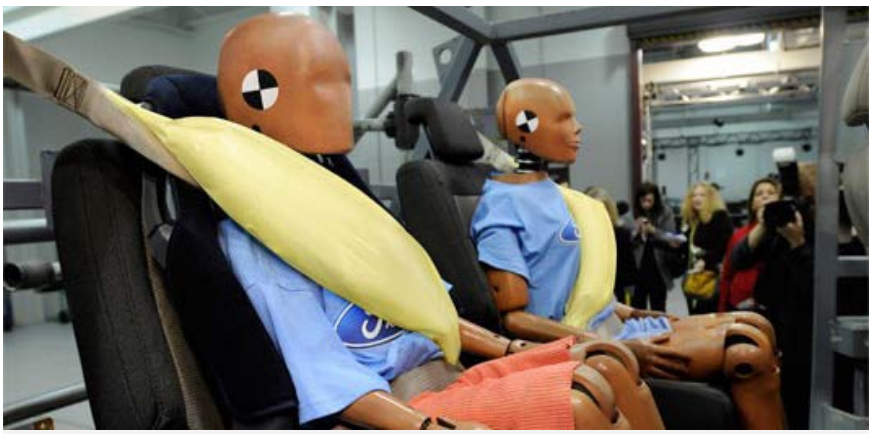
Occupant Protection Technologies

Many factors influence a vehicle's crash performance, including the design of the vehicle's structure (i.e., its ability to absorb impact energy) and the use of passive safety equipment such as air bags to supplement safety belts. Ford's commitment to advancing the state-of-the-art in vehicle safety includes research and development of technologies that further enhance occupant protection in a wide variety of crash circumstances.

For example, Ford is using more advanced and ultra-high-strength steels than ever, as well as researching other advanced materials. Increased use of these materials helps us design vehicle structures with enhanced crash energy management while minimizing vehicle weight – even as we add more features, equipment and safety devices. For example, the all-new Ford B-MAX in Europe uses 58 percent high-strength steels in its body shell and doors. Similarly, in the U.S., the body structure of the Ford Focus is constructed of 55 percent high-strength materials.



Ford inflatable safety belts combine the attributes of traditional safety belt and air bag technologies to help further reduce the risk of head, neck and chest injuries for rear-seat passengers.

For the vehicles of tomorrow, Ford is conducting extensive research into the potential use of other advanced materials (e.g., aluminum, magnesium and composites, among others) in our vehicle architectures. Use of these types of materials will enable us to further reduce vehicle weight while maintaining our commitment to high-levels of occupant protection in a wide variety of real-world crash conditions.

Safety belts remain the most important vehicle safety technology available. In the 2011 model year, Ford brought to market the world's first automotive rear inflatable safety belts, which resulted in several prestigious awards for technological achievement. The rear inflatable safety belts combine the attributes of traditional safety belt and air bag technologies to help further reduce the risk of head, neck and chest injuries for rear-seat passengers.

Rear inflatable belts are designed to deploy over a vehicle occupant's torso and shoulder in less than 40 milliseconds in the event of a crash. Each belt's tubular air bag inflates with cold compressed gas. The inflatable belt distributes crash force energy across the occupant's torso, helping to further reduce the risk of injury. In everyday use, the inflatable belts operate like conventional safety belts and are safe and compatible with infant and child safety car and booster seats. In Ford's research, more than 90 percent of those who tested the inflatable safety belts found them to be similar to, or more comfortable than, a conventional belt.

Rear-seat inflatable safety belts are available in North America on the 2013 Ford Explorer, Ford Flex, Lincoln MKT and Lincoln MKZ. Plans are in place to introduce them into other markets as well.

Related links

Vehicle Websites

- Ford Focus
- Ford Fusion
- Ford C-MAX
- Ford Taurus
- Ford Mustang
- Ford Flex
- Ford Escape
- Ford Edge
- Ford Explorer
- Ford F-150
- Lincoln MKZ
- Lincoln MKX
- Lincoln MKS
- Lincoln MKT

Finally, Ford's Personal Safety System™ is a network of components that, during frontal collisions, can adapt the deployment strategy of the front airbags to the crash severity and occupant conditions. The system's restraint control module (RCM) translates information collected by the front crash sensors, front outboard safety belt buckle switches, driver-seat track position and passenger seat weight sensor. Using this information, the RCM activates the safety belt pretensioners and determines how the dual-stage front airbags will deploy, adapting the release of the airbags to the size and position of the front seat occupants. In North America, the Personal Safety System is standard on nearly all Ford and Lincoln vehicles, including the 2013 Ford C-MAX, Edge, Escape, Explorer, F-150, Flex, Focus, Fusion, Mustang and Taurus and the Lincoln MKS, MKT, MKX and MKZ.

Post-Crash Response Technologies

One method of assisting emergency responders to reach the scene of a vehicle crash quickly is through in-vehicle emergency call systems, also called post-crash notification. These systems can help occupants to summon assistance in an urgent situation.

Ford SYNC® has this capability, for instance. SYNC is Ford's in-car connectivity system that provides a way for drivers to use cell phones and MP3 players through voice commands while keeping their eyes on the road and hands on the wheel. SYNC-equipped vehicles in the U.S., Europe and now China come with an occupant communications capability called SYNC 911 Assist (in the U.S.) or Emergency Assistance (in Europe and China). This is a non-subscription call-for-help system. In the event of a severe crash, the ability to directly contact the local emergency operator could be critical, for both the vehicle occupants and first responders. While any cell phone alone could be used in an emergency situation, SYNC can assist in placing a call to a local emergency operator – when a phone is properly paired, turned on and connected to SYNC and where the system and cell phone remain powered and undamaged – should a crash with an air bag deployment or fuel shutoff switch activation occur. SYNC gives the occupants a choice as to whether or not to make the emergency call, and places the call if the occupant does not respond after a short time. In Europe, Emergency Assistance alerts local emergency services operators in the correct language for the region. In 2012, Emergency Assistance was introduced in China on the all-new Ford Kuga, where it recognizes and responds in Mandarin. The introduction of the Mandarin version in China will help take Ford a step further toward our target of 13 million SYNC customers worldwide.

The SOS-Post Crash Alert System, which is standard equipment on most Ford and Lincoln vehicles, is another advance in post-crash safety technology. The SOS-Post Crash Alert System automatically activates the horn and emergency flashers in the event of an air bag deployment or safety belt pre-tensioner activation. The second-generation system – introduced in the 2011 model year – also is designed to automatically unlock vehicle doors subsequent to an air bag deployment or safety belt pretensioner activation, to aid in rescue. The system is designed to alert passersby and emergency services to the vehicle's location.

Collaborative Efforts

Ford Motor Company continues to collaborate with other automotive companies on precompetitive safety projects to enhance the safety of the driving experience and develop future technologies. The connected vehicles case study describes several of these collaborations, including the Crash Avoidance Metrics Partnership and Vehicle Infrastructure Integration Consortium, among others. This section includes three other major examples: the U.S. Council for Automotive Research, the National Science Foundation's Center for Child Injury Prevention Studies, and our university partnerships.

ON THIS PAGE

Related links

This Report

- Case Study: Connected Vehicles

External Websites

- U.S. Council for Automotive Research
- Center for Child Injury Prevention Studies

U.S. Council for Automotive Research (USCAR)

Ford collaborates with General Motors and Chrysler through USCAR's various safety-related working groups, committees and councils. These include the Safety Technical Leadership Council (Safety TLC), the Occupant Safety Research Partnership (OSRP) and the Crash Safety Working Group (CSWG).

In 2011 and 2012, the OSRP completed a series of evaluations on BioRID, a crash-test dummy that has been proposed for use in a Global Technical Regulation[1] for rear-impact testing. In these evaluations, OSRP engineers assessed the dummy design's "repeatability" and "reproducibility" (R&R), which are essential characteristics for helping to ensure that a crash-test dummy is a reasonable scientific tool. (Repeatability refers to the ability of a single dummy to produce the same results when tested under nominally identical test conditions. Reproducibility refers to the ability of different dummies of the same design to produce the same results when tested under nominally identical test conditions.) If the dummy were to lack R&R, member companies would need to adopt larger compliance margins and conduct more tests to assure compliance with future rear impact regulations. The OSRP working group expects to publish a technical paper with their findings in 2013.

A separate OSRP Pedestrian working group developed a test fixture to enable a study of the repeatability of the FLEX-PLI pedestrian leg form, which is expected to be incorporated into the Global Technical Regulation on pedestrian impact testing. Initial testing of the FLEX-PLI was completed in 2012; additional evaluations will take place in 2013.

The United Nations continues to work toward incorporation of the WorldSID mid-sized male and small female side impact dummies into regulations. Simultaneously, Euro NCAP continues to move toward a new side impact evaluation using the WorldSID mid-sized male dummy. Working group members from the OSRP are participating with representatives from the U.S. National Highway Traffic Safety Administration (NHTSA) and other governments, as well as other automakers, on the evaluation of these dummies and modifications of the designs, to ensure they meet government testing requirements as well as automakers' needs for repeatability, reproducibility, biofidelity and overall usability.

The CSWG conducts and directs precompetitive research on crash-related safety issues, with a current focus on issues associated with aspects of advanced, alternate-fueled, energy-efficient vehicles. The CSWG recently analyzed standard vehicle crash-test data for front, side and rear impact modes. This study resulted in a technical paper submitted to the 2013 World Congress of the Society for Automotive Engineers for presentation.

Finally, the CSWG, in conjunction with the University of Michigan, completed phase one of a high-

voltage battery modeling project. Experiments were conducted to analyze the structural crush behaviors of inert lithium-ion battery pouch cells. The experimental results and theoretical analyses were used to develop finite element mathematical models. This work resulted in four separate reports on the mechanical behavior and modeling of lithium-ion battery cells.

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National Science Foundation's Center for Child Injury Prevention Studies

Ford continues to support research at the National Science Foundation (NSF) Center for Child Injury Prevention Studies (C-ChIPS) at the Children's Hospital of Philadelphia and University of Pennsylvania. C-ChIPS is an NSF Industry/University Cooperative Research Center. Participants include seven automotive companies, NHTSA, *Consumer Reports*, automotive suppliers, child-seat manufacturers, insurance companies, and a crash-test dummy manufacturer.

In addition to helping fund the work, Ford scientists and engineers help to select the research projects pursued by C-ChIPS researchers each year and even serve as mentors for projects that need automakers' vehicle safety expertise. Current projects include studies quantifying the fit of child safety seats in vehicles, identification of risk factors and scenarios for teen driver crashes that result in injury, and the biomechanical evaluation of the lower extremities of existing pediatric crash-test dummies.

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University Partnerships

Ford collaborates with university partners on a wide range of research projects, including research into advanced safety technologies. In recent years, we have fine-tuned the objectives of our grant-providing University Research Program (URP), moving away from pure exploratory and long-term research and toward highly collaborative projects focused on innovations with more near- and mid-term implementation potential.

In 2012, Ford awarded 20 new URP grants to 18 universities around the globe. Recipient schools in the United States included Wayne State University, Michigan State University, University of California – Davis, Georgetown University, Ohio State University and University of Michigan.

In Europe, new URP grants were awarded to RWTH Aachen University and the University of Bayreuth in Germany; University of Twente and Utrecht University in The Netherlands; and Koç University in Turkey.

And in the Asia Pacific region, grants were awarded to the University of Science and Technology Beijing, Nanjing University of Aeronautics and Astronautics, Shanghai Jiao Tong University, and Tsinghua University, all in China. Other universities in this region to win awards included the Indian Institute of Technology in Madras, and the Australian National University in Canberra.

Ford also has major research alliances with the Massachusetts Institute of Technology, the University of Michigan, Stanford University and RWTH Aachen University in Germany, as well as previously awarded URPs with other universities. So, the new Ford URP collaborations add to an active research portfolio that now totals 53 projects in partnership with 35 universities globally. In 2013, we expect to award collaborative URP projects to more universities globally, covering a wide spectrum of research and technology areas.

Safety and sustainability are thrust areas in many of these collaborative university programs. The research catalyzes innovation at Ford by providing access to leading researchers at the cutting edge of biomechanics and passive safety technologies, vehicle dynamics and stability control, accident avoidance and driver assistance technologies, biofuels, emissions reduction, weight reduction, battery and alternative powertrain technologies. Ford will continue to integrate these collaborative innovations into our vehicles, driving continuous improvement in real-world safety and sustainability for all Ford Motor Company products.

The following are specific examples of current safety-related projects sponsored by Ford's Global Research and Advanced Engineering Organization:

- Wayne State University's Bioengineering Department is evaluating surrogates for child lateral impact crash testing. Child crash-test dummies for side impact evaluation of vehicles are a

recent development. Their designs are based on scaling from adults, but children have unique biomechanical properties and are not just small adults. This project seeks to understand how the new child crash-test dummies perform in simulated side impact crashes and how to improve their design.

- RWTH Aachen University is working on the development of advanced crash simulation methodology. This research seeks new methods to predict and accurately assess the crash performance of vehicle structures made with advanced materials.

- Tianjin University of Science and Technology is helping Ford to develop the world's first human body mathematical model of a six-year-old child. Data from CT scans of a representative six-year-old child were used to determine the physical geometry of the skeleton and internal organs. This data was then used to develop a mathematical representation in the virtual world of a human six-year-old child. When completed, this model may help Ford scientists and engineers better understand how injury to children occurs in vehicle crashes and research ways to reduce risk of injury to children in those crashes.

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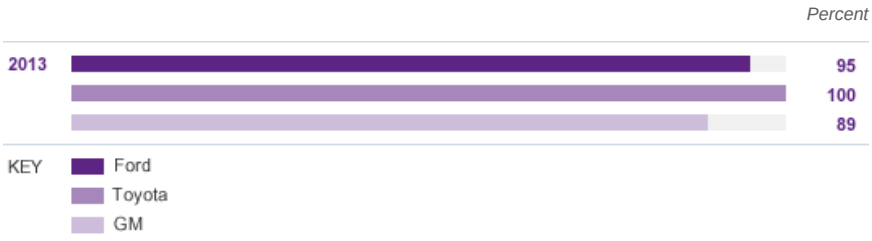
1. Two systems of vehicle regulation predominate globally: the United Nations Economic Commission for Europe Regulations and the U.S. Federal Motor Vehicle Safety Standards. With the aim of harmonizing world vehicle regulations, 31 countries are working together to develop Global Technical Regulations. Ford actively participates in the GTR development process.

Data

DATA ON THIS PAGE

A. Percent of Nameplates Achieving 4-Star or Better NCAP Overall Vehicle Score (OVS)

Data are for the model year noted.



	2013
Ford	95
Toyota	100
GM	89

Third party rated (NHTSA)

Notes to Data

Beginning with the 2011 model year the National Highway Traffic Safety Administration (NHTSA) significantly changed its New Car Assessment Program (NCAP) and added a new metric, the Overall Vehicle Score (OVS), a calculation based on data from frontal crash, side crash, and rollover evaluations. We are simplifying our metrics and reporting NHTSA's OVS. For detailed information on the NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

Related Links

This Report:

- Vehicle Safety and Driver Assist Technologies
- How We Manage Vehicle Safety

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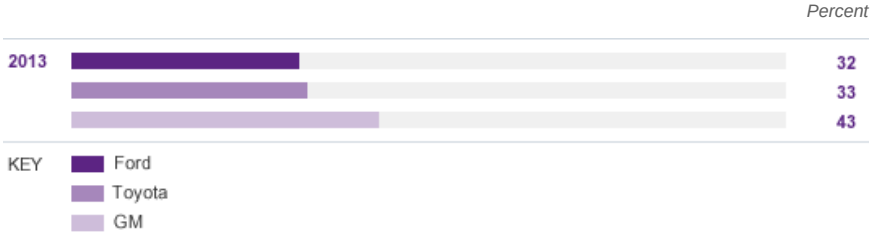
B. Percent of Nameplates Achieving 5-Star NCAP Overall Vehicle Score (OVS)

Data are for the model year noted.



	2013
Ford	32
Toyota	33
GM	43

Third party rated (NHTSA)

Notes to Data

Beginning with the 2011 model year the National Highway Traffic Safety Administration (NHTSA) significantly changed its New Car Assessment Program (NCAP) and added a new metric, the Overall Vehicle Score (OVS), a calculation based on data from frontal crash, side crash, and rollover evaluations. We are simplifying our metrics and reporting NHTSA's OVS. For detailed information on the NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

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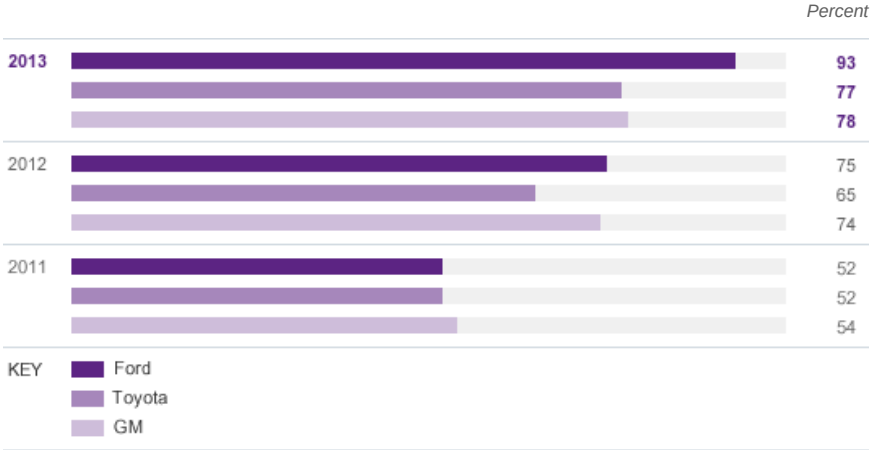
C. Percent of Nameplates Achieving IIHS Top Safety Pick by Manufacturer

Data are for the model year noted.



	2011	2012	2013
Ford	52	75	93
Toyota	52	65	77
GM	54	74	78

Third party rated (IIHS)

Notes to Data

To earn an Insurance Institute for Highway Safety (IIHS) Top Safety Pick (TSP), a vehicle must receive "good" ratings in front, side, roof strength, and head restraint assessments. In 2013, IIHS began awarding Top Safety Pick+ (TSP+) for vehicles earning good ratings in all four of the above-mentioned evaluations plus at least an "acceptable" rating in a new small overlap frontal crash. In addition to the TSP awards, Ford received two TSP+ awards for 2013 MY vehicles. For detailed information on the IIHS's testing procedures, see http://www.iihs.org/ratings/.

Related Links

This Report:

- Vehicle Safety and Driver Assist Technologies
- How We Manage Vehicle Safety

External Websites:

- IIHS

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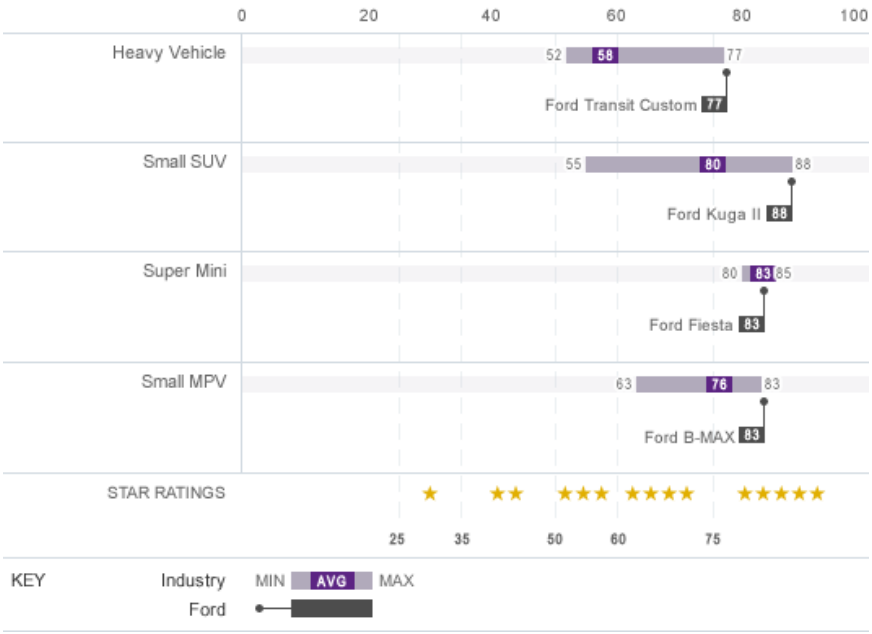
D. Euro NCAP (2012 Ratings)

Overall percentage

Overall percentage



	Industry Low	Industry High	Industry Average	Ford results
Heavy Vehicle	52	77	58	Ford Transit Custom: 77%
Small SUV	55	88	80	Ford Kuga II: 88%
Super Mini	80	85	83	Ford Fiesta: 83%
Small MPV	63	83	76	Ford B-MAX: 83%

Third party rated (Euro NCAP)

Notes to Data

EuroNCAP combines all assessed criteria to an overall “fulfillment percentage” ranging from 0 percent to 100 percent. Star ratings are dependent on the fulfillment percentage. Currently a 75 percent or higher is required for a 5-star rating. In addition to the star ratings, five Ford vehicles received “Euro NCAP Advanced” rewards for new safety technologies in the 2012 ratings. For additional information, go to www.euroncap.com.

Related Links

This Report:

- Vehicle Safety and Driver Assist Technologies
- How We Manage Vehicle Safety

External Websites:

- Euro NCAP

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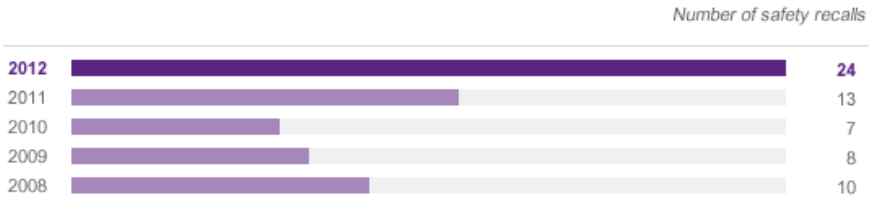
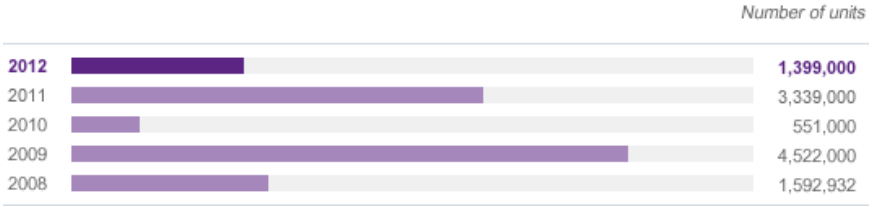
E. U.S. Safety Recalls





	2008	2009	2010	2011	2012
Number of safety recalls	10	8	7	13	24
Number of units	1,592,932	4,522,000	551,000	3,339,000	1,399,000

Reported to regulatory authorities (NHTSA)

Notes to Data

Three of the 2012 calendar year safety recalls were reported by NHTSA in January 2012, although they were approved by the Company in December 2011. Additionally, three other 2012 calendar year safety recalls were supplements to safety recalls that were originally approved by the Company in 2010 and 2011.

Related Links

This Report:

- Vehicle Safety and Driver Assist Technologies

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Case Studies

IN THIS SECTION

Case Study: Connected Vehicles

In the future, vehicle technologies will allow cars to communicate wirelessly with one another and with roadway infrastructure using advanced Wi-Fi signals or dedicated short-range communications. Learn about Ford technologies that are already showing what is possible in the realm of connected vehicles, as well as collaborative research we are undertaking with others to help the vision become reality.

Case Study: Public Domain Ratings

Public domain rating programs that perform vehicle crash testing and other assessments, which differ around the world, have regularly updated their testing protocols and evaluation criteria. Read about the changes that several of these programs have made over the past two years – changes that are making it increasingly difficult to achieve the highest ratings, even though vehicles are safer than ever.

Case Study: Electrified Vehicle Safety

Because hybrids, plug-in hybrids and pure battery electric vehicles contain a high-voltage battery, first responders – the firefighters, police officers and emergency medical technicians who show up at the scene of a crash site – need some special knowledge and skills to be able to safely address a vehicle crash involving an these vehicles. Read what Ford is doing to help educate first responders.

Case Study:

Connected Vehicles

Imagine a future in which vehicles "talk" to each other – and to stoplights, other transportation infrastructure and even pedestrians and bicycles – in a way that might have seemed like science-fiction fantasy just a few decades ago. In this future, vehicle technologies will allow cars to communicate wirelessly with one another using advanced Wi-Fi signals or dedicated short-range communications on secured channels. The Wi-Fi-based radio system will allow 360 degrees of detection, so it can "look" around corners for potentially dangerous situations, such as when a driver's vision is obstructed.

Such connected vehicles could warn drivers if there is a risk of collision when changing lanes or approaching a stationary or parked vehicle, or if another driver loses control. Drivers also could be alerted if their vehicle is on a path to collide with another vehicle at an intersection, when a vehicle ahead stops or slows suddenly, or when a traffic pattern changes on a busy highway.

By potentially reducing collisions, connected vehicles could also ease traffic delays, which could save drivers both time and fuel, thereby reducing their environmental impacts. Traffic congestion also could be avoided through a network of connected vehicles and infrastructure that processes traffic and road information. A traffic management center would send this information to connected vehicles, which could then suggest less-congested routes to drivers and other connected travelers.

Already, Ford has unveiled an array of accident avoidance and driver assist technologies that use radars and cameras to warn the driver of a potentially dangerous situation, and in some cases provide assistance to the driver. And we are taking part in numerous research projects – on our own and in cooperation with other companies and government bodies – to develop and demonstrate other technologies.

Ford Technologies

Technology and innovation are the fundamental drivers for Ford Motor Company's Blueprint for Mobility. As our Executive Chairman, Bill Ford, mentioned in a 2012 speech in Barcelona, in the next five years consumers will see the migration of driver assistance technologies across our product lineup. These technologies include radar-based systems such as Adaptive Cruise Control and the Blind Spot Information System, as well as camera-based technologies such as Traffic Sign Recognition and Lane Keeping Assist. In addition, we will begin investigating new models of car use, such as car and ride sharing, and developing new partnerships that will help us connect with consumer trends.

Our Lane Keeping System uses a small, forward-facing camera behind the inside rearview mirror to "look" down the road, monitor lane lines to determine that the vehicle is on course.

Related links

This Report

- Our Blueprint for Mobility
- Accident Avoidance and Driver Assist Technologies

External Websites

- DRIVE C2X
- EuroFOT
- interactIVe
- National Highway Traffic Safety Administration
- Vehicle Infrastructure Integration Consortium

In the midterm, our vision is to enhance driver assistance technologies to include more semi-automated capabilities. These capabilities will give drivers the option to let the car take the lead in certain situations, such as when changing lanes, in traffic jams or on freeway trips. The driver will always be able to take back control, if needed.

In the long term, we hope consumers will begin to see a radically different transportation system, particularly in urban centers. Cars will be connected to each other, as well as to the infrastructure around them. Vehicles will take in a significant amount of information that will allow them to have automated capability, such as parking themselves or driving in connected groups on the freeway. There will also be seamless connections between different modes of transportation, from personal cars to public transit systems to parking facilities at businesses.

In order to reach our future mobility vision, we recognize that no single automaker or even groups of automakers can do it alone. That is why we are working on collaborative research to make our vision a reality.

Collaborative Research

The U.S. Department of Transportation (USDOT) is leading research and coordinating two automaker coalitions relating to connected vehicles. The first coalition is the Crash Avoidance Metrics Partnership (CAMP), a group of eight automakers that focuses on the technical aspects of connected vehicles; the second is the Vehicle Infrastructure Integration Consortium (VIIC), a group of nine automakers that focuses on the policy aspects of connected vehicles.

CAMP is working on the technical standards necessary for all the motorized vehicles on the connected vehicle network to be interoperable. This technical partnership included the world's first government-sponsored driving clinics in 2011 and expanded to include a year-long field trial. The field trial started in August 2012 in Ann Arbor, Michigan, and includes data collection on approximately 3,000 vehicles that are communicating with each other. The goal is to complete the research phase in 2013.

The VIIC is working on the significant practical and policy challenges, such as security, privacy and the allocation of risk and liability, that will need to be addressed before Ford's vision of a connected vehicle network can become a reality.

Even though we do not have all of the solutions today, Ford is committed to work with the USDOT through the public/private partnerships at CAMP and VIIC to address these challenges.

In Europe, the "Safe Intelligent Mobility – Test Field Germany" (known as "simTD" for short) is investigating vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications under everyday conditions in a large-scale field operational test. In simTD, 120 vehicles were outfitted with V2V and V2I communications systems, and roadside units were set up in select locations around the test area. Both were also linked up to traffic control centers. During the test, which took place from July to December 2012 in and around Frankfurt, Germany, participating drivers received information about traffic jams and road accidents, so they could choose alternate routes. More than 350 drivers actively participated and collected data by completing specific driving tasks. In total, the test vehicles drove more than 400,000 kilometers and collected about 30 terabytes of log data, which is now being evaluated.

Ford provided 20 specially equipped Ford S-MAX models for use as test vehicles in the simTD project. Ford is also leading the development, testing and evaluation of the Electronic Emergency Brake Light system, which warns the driver of a heavily braking vehicle ahead. The simTD project will wrap up in 2013. It is a joint effort with other vehicle manufacturers, suppliers, telecommunication providers and research institutes, as well as public authorities. It receives partial funding from the German government.

Ford is also contributing to the European harmonization and standardization of wireless communication systems and applications within the framework of the DRIVE C2X project, which is co-funded by the European Commission. DRIVE C2X is the acronym for "DRIVing implementation and Evaluation of C2X communication technology in Europe" (C2X refers to "car-to-car and car-to-infrastructure" communication, and means the same as V2V and V2I). This project kicked off in January 2011 and is planned to run until mid-2014. It brings together more than 40 stakeholders, such as vehicle manufacturers, suppliers, universities and public authorities from all over Europe. Within the framework of DRIVE C2X, field operational tests in a real-world environment are being conducted in seven test sites across Europe.

In 2012, DRIVE C2X achieved a major milestone – the successful implementation of a European V2X reference system at the test site in Helmond, the Netherlands. Also, cooperative driver awareness and warning functions have successfully been demonstrated to the European Commission and invited technical executives. The DRIVE C2X system was also demonstrated at a "Cooperative Mobility Demonstration" that took place at the ITS World Congress in October 2012 in

Vienna, Austria.

Both simTD and DRIVE C2X are working to pave the way for the full deployment of V2V and V2I systems in Europe, and will provide Ford with some of the data needed to develop next-generation safety and mobility features. However, cooperative systems can only be deployed successfully in cooperation with other automakers and key players such as road operators. Therefore, Ford joined the “CAR 2 CAR Communication Consortium” as a member in January 2013. This association of automakers, suppliers, research institutes and other stakeholders aims for European standardization of V2X technology and supports its deployment.

In January 2010, a consortium of 29 partners – led by the Ford European Research Center in Aachen, Germany – joined forces in the Accident Avoidance by Active Intervention of Intelligent Vehicles (interactIVe) European research project. This consortium seeks to support the development and implementation of accident avoidance systems, and consists of seven automotive manufacturers, six suppliers, 14 research institutes and three other stakeholders. The European Commission is covering more than half of the €30 million budget.

During the planned 42-month duration of interactIVe, the partners are testing the performance of implemented safety systems through active intervention, including automated braking and steering in critical situations, with the aim of avoiding collisions or at least mitigating impact severity in accidents.

In 2012 we completed another major European research project (called EuroFOT) that served as a large-scale field operational test of the real-world impact of accident avoidance systems. Under the EU’s Seventh Framework Program (FP7) for research and technological development, this project joined together 28 partners – including vehicle manufacturers, suppliers, universities and research centers. More than 1,500 cars and trucks were equipped with eight technologies, along with advanced data-collection capabilities. This allowed a thorough evaluation of the new technologies for safety, efficiency and driver comfort, in real-world scenarios and with ordinary drivers. The project had a total budget of €22 million and was led by the Ford research center in Aachen, Germany. It included 100 Ford vehicles.

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Case Study:

Public Domain Ratings

Safety regulations and public domain rating programs differ around the world, and they are constantly evolving in response to various regional factors. The public domain rating programs that perform vehicle crash testing and other assessments have regularly updated their testing protocols and evaluation criteria to reflect the needs of the region. In the past two years, several of these programs have markedly revised their vehicle rating systems, making it increasingly difficult to achieve the highest ratings. The changes have also caused the testing protocols to become even more inconsistent and divergent between regions. Some of the changes include the addition of new assessment items (such as different-sized dummies in different seating positions), different or more-stringent crash evaluation criteria and greater emphasis on accident avoidance and driver assist features. A major challenge for a global automotive company like Ford is that the complexities of these evolving programs may initiate a demand for different vehicle technology offerings in different markets.

In addition, New Car Assessment Program (NCAP) systems are being launched in regions where they have not existed in the past. This is partly due to the influence of a new nonprofit organization based in London called Global NCAP that is promoting the establishment of NCAPs around the world. They have already helped to develop a Latin NCAP system, which is now rating vehicles in Mexico and South and Central America. In 2012, a new ASEAN NCAP was launched in Malaysia.

In the U.S., the NCAP program of the U.S. National Highway Traffic Safety Administration (NHTSA) includes a 35 mph (56 km/h) full frontal impact test, a side impact test consisting of a moving barrier and a rigid pole, and a static stability rating. NHTSA also provides an overall vehicle score (a “star” rating, from one to five stars) representing a combination of the vehicle’s front, side and rollover ratings.

Evaluations conducted by the Insurance Institute for Highway Safety (IIHS) include a 40 mph (64 km/h) frontal offset (40 percent overlap) crash test, a side crash test with a higher barrier, a roof strength test, plus evaluations of head restraints in a rear-impact simulation. To earn a Top Safety Pick from the IIHS, a vehicle must receive “good” ratings in the front, side, roof and head restraint assessments. Beginning in the 2013 program, the IIHS added a small (25 percent) overlap frontal test, simulating minimum engagement or an impact with a narrow object, to their Top Safety Pick rating system. Vehicles that perform at a “good” or “acceptable” level in this new small offset test will earn an IIHS Top Safety Pick+ award. The IIHS will allow vehicles that are currently Top Safety Picks to keep that award during the phase-in period, which is expected to last several years.

Euro NCAP conducts a 64 km/h (40 mph) frontal offset (40 percent overlap) crash, a side crash and a side pole impact, as well as pedestrian protection and child safety evaluations. Recent changes to the Euro NCAP include the addition of a test for whiplash neck injury protection in rear impact, and rewards for speed limiters and the inclusion of electronic stability control technologies as standard features. Like NHTSA, Euro NCAP also gives each vehicle an overall star rating representing a combination of individual assessments. In addition to publishing the main vehicle ratings, Euro NCAP has added an Advanced Rewards program to recognize certain safety and accident avoidance technologies that are not currently rated under their protocols. Euro NCAP has also announced significant changes to its rating system between 2014 and 2016. These changes are far-reaching and include a stronger focus on accident avoidance and driver assist features, new and revised crash tests and dummies, and changes to the assessments for pedestrian and child safety. (See Voice: Dr. Michiel van Ratingen for comments from the Euro NCAP Secretary General.)

The emerging testing and assessment methods being developed by Global NCAP are based on existing protocols – typically those from Euro NCAP. Latin NCAP announced changes to their program for 2013. The changes are quite significant and affect areas such as child restraints, child dummies, applicability of the ratings, fitment rates for safety equipment, seat belt reminders and

Related links

External Websites

- Australasian New Car Assessment Program
- China New Car Assessment Program
- European New Car Assessment Programme
- Global New Car Assessment Programme
- Insurance Institute for Highway Safety
- Latin New Car Assessment Program
- U.S. National Highway Traffic Safety Administration

new requirements for five-star ratings. In addition, revisions to the China and Australasian NCAP programs are planned in stages and began taking effect in 2011. In 2012, changes to China NCAP include increasing the offset frontal impact test speed from 56 km/h to 64 km/h, the introduction of whiplash assessments and the inclusion of rear dummy assessments in the ratings. The Australasian NCAP has published a rolling, five-year “road map” detailing changes they plan to introduce through to the end of 2017. These include whiplash and roof-strength assessments and increased requirements for accident avoidance and driver assist technologies.

Thus, even though Ford vehicles are safer than ever, individual vehicle crash ratings achieved for the 2011 model year and beyond should not be compared to ratings achieved prior to 2011. (See the Data page.)

In addition, while some of the basic test methods are similar in the global evaluation programs, each program varies in the ways in which vehicle ratings are determined. This means that for an identical car, achieving the highest rating in one region or evaluation program does not guarantee the same result in another region or program.

Just as rating programs vary by region, so do regulations, road infrastructure, the competitive landscape and other factors that can influence real-world safety. We work to understand all of these variables and to deploy and offer safety features that meet the needs of the region. And we continue to invest in new technologies to prepare for future societal needs. At Ford, we strive to make technology available on a wide range of our products, even as we remain competitive in the markets in which Ford vehicles are sold. This approach promotes greater societal benefits through broad market acceptance of new technologies, which ultimately improves real-world safety.

Case Study:

Electrified Vehicle Safety

Anyone who owns an electrified vehicle (EV) can attest that the experience of driving an EV is essentially the same as that of a "regular" vehicle powered by an internal combustion engine. Certainly no special skills are needed to operate EVs such as hybrids, plug-in hybrids or pure battery electric vehicles.

Under the hood, however, EVs are, in fact, different from non-electrified vehicles in at least one important respect: they contain a battery with 300+ volts of power, whereas a regular vehicle has just one 12-volt battery.

And that means that first responders – the firefighters, police officers and emergency medical technicians who show up at the scene of a crash site – may indeed need some special knowledge and skills to be able to safely address a vehicle crash involving an EV.

"It's not uncommon for first responders to need to update their skills and procedures in response to new technologies," said Domenico Gabrielli, vehicle safety engineer in Ford's Automotive Safety Office. "For instance, the advent of high-strength steels and new types of airbags required a modification of tools and procedures. Likewise, in recent years the industry has been focused on educating first responders about EVs."

For example, we and other EV manufacturers have developed special Emergency Responder Guides for each of our electric vehicles. These guides include information on how to identify a Ford EV, locate the high-voltage system, disconnect it, and move and store the disabled vehicle, among other key tasks. Also, over the years, we have actively supported firefighters' hands-on crash-response procedure training events, through the donation of EVs and the attendance of Ford technical personnel.

In 2010, we began working with the National Fire Protection Association (NFPA) to help reach more first responders and educate them about electric vehicles. We take part in conferences on the topic that are jointly hosted by the NFPA and the Society for Automotive Engineers (SAE). We also solicited (and incorporated) the NFPA's feedback on our Emergency Responder Guides.

The NFPA has since developed a website for first responders, where our and other automakers' guides are housed. Also, the NFPA developed the Emergency Field Guide – a quick reference guide that summarizes the key information that first responders need for all makes and models of EVs.

"Our comprehensive training programs – both classroom-based and online – have reached at least 35,000 first responders," said Andrew Klock, senior project manager at the NFPA. "And the classroom programs are 'train-the-trainer' courses, so we know the lessons taught there are being cascaded out to many, many more first responders."

The NFPA is also working with the Fire Protection Research Foundation, which is currently conducting a study on high-voltage battery fires and best practices for extinguishment. That work is funded in part by the Alliance of Automobile Manufacturers, of which we are a member.

Ford has also been involved in the SAE's efforts to develop recommended standard procedures for first responders regarding EVs involved in crashes. Several Ford engineers served on the committee that developed the procedures, which were published in February 2013.

"It's important to note," said Gabrielli, "that automakers and government regulatory agencies have worked hard to ensure that EVs are safe in the event of a crash." All EVs in the U.S., for instance, must comply with the National Highway Traffic Safety Administration's regulations governing the safety of EVs. Ford also complies with similar regulations in force in other countries around the world.

Ford also has internal guidelines for EVs, governing all aspects of battery safety and crash protection. In our EVs, for example, the high-voltage battery is housed in a strong steel casing,

Related links

This Report

- Electrification: A Closer Look

External Websites

- National Fire Protection Association
- Society for Automotive Engineers

which helps to provide protection in addition to the car's overall safety structure. "From the beginning, our electrified vehicles are designed for safety," said Gabrielli.

First responders have long been used to addressing the risks associated with "regular" vehicle crashes, which may involve the spillage of large quantities of flammable liquid. EVs have unique issues that first responders also need to learn how to handle. But we're confident that the efforts of Ford and others in the industry are helping to ensure that first responders have the information they need to do their jobs safely.

Dr. Michiel van Ratingen

Secretary General
European New Car Assessment Program (Euro NCAP)

In 2009, we at Euro NCAP released a strategic “road map” for updating European safety standards and consumer testing protocols. As we have implemented the changes outlined in that road map, the auto industry has had a harder time earning five-star vehicle ratings.

The reasons behind our road map were quite simple. In Europe, we had seen a significant increase in the safety of vehicles – to the point where our standards were beginning to fall behind what the automakers were delivering. Consumers and insurance companies told us it appeared to be too easy to receive high ratings. Moreover, we weren’t making any distinction between cars that had new accident avoidance technologies and those that did not. The updated standards, therefore, make it more difficult to achieve five stars while also taking the newer technologies into account.

And, these higher standards have delivered better safety for consumers. One example is in the area of pedestrian safety. In our updated ratings system, the score for pedestrian safety was integrated into the overall star rating, so companies began to pay more attention to it. As a result, we have seen significantly better performance in this area since 2009 than previously.

For the next five years, we will continue to update our tests to keep pace with technology. But we do not anticipate updating at the same rapid pace.

Part of our job at Euro NCAP is to educate consumers about our ratings system and what it means. That’s not simple, because safety is not as sexy a topic as it was 15 years ago. Consumers, today, take safety as a given. In Europe, North America and Japan, in particular, we are spoiled by extremely safe and well-engineered vehicles. So, we work hard to keep safety front-of-mind for consumers, so they continue to consider it in their vehicle purchases.

While our focus is Europe, we have also been supporting Global NCAP and their efforts to bring NCAPs to other regions of the world. The NCAP systems in the developing world, in particular, can’t be exactly as they are in the developed world, because the vehicles and technologies currently offered in those countries are not the same. But we do try to provide the regional programs with technical support, as appropriate.

Going forward, we believe that automakers with a global footprint should be bringing their vehicle safety best practices to other regions more quickly. About one-third of vehicles produced globally today would not meet the most basic frontal crash tests. That needs to change.

In Europe, making continued safety progress is a very different issue. The low-hanging fruit is gone. What’s left is harder to identify, and the costs and benefits are not as clear. We need to focus on smaller topics – such as addressing challenges for aging drivers – in order to make further advancements in safety. We know we will also see more accident avoidance and driver assistance technologies on vehicles. We are confident that automated driving (or partly automated driving) will come to Europe in the next few years.

I want to make clear that our intention is not to put a big burden on the automotive industry. Safety has many aspects (including, for instance, road infrastructure), and automakers can’t address all of them. We know we need to have a continuing dialogue with companies such as Ford about what’s

Related links

This Report

- How We Manage Vehicle Safety
- Case Study: Public Domain Ratings

External Websites

- Euro NCAP

realistic and feasible, particularly given the difficult economic times we are experiencing in Europe.

One issue that adds to the burden on car companies is a lack of alignment among all the standards, including those of the various NCAPs and those of the Insurance Institute for Highway Safety in the United States. We all have plans to further develop our standards, and not in the same way. I don't want to see us make the mistake of instituting completely different tests – especially for the new accident avoidance technologies. We should be able to agree on a set of tests for autonomous braking, for example. We have been working on this with the other rating organizations, and we will continue to do so.

The automotive supply chain is one of the most complicated of any industry. Automakers like us rely on thousands of suppliers to provide the materials, parts and services necessary to make our final products. (See Supply Chain Profile.) Many suppliers serve numerous automakers, and each of those suppliers, in turn, has multiple suppliers. There are often six to 10 levels of suppliers between an automaker and the source of raw materials that eventually enter the manufacturing process. The breadth, depth and interconnectedness of the automotive supply chain make it challenging to effectively manage business and sustainability issues.

In today's economic environment, achieving lower costs, improving quality and meeting sustainability goals require an unprecedented level of cooperation with suppliers, as well as strong supplier relationships. Ford and its suppliers must work jointly to deliver great products, have a strong business and make a better future.

This section describes our overall approach to developing a sustainable supply chain, including building strong relationships with our suppliers, developing supplier capability to manage sustainability issues, and collaborating with others in our industry on supply chain sustainability. It also describes our efforts to:

- Support human rights in our supply chain
- Promote environmental sustainability in our supply chain
- Address human rights and environmental issues related to certain raw materials
- Promote diversity among our suppliers

More than

80 percent

of Ford's strategic production suppliers have a robust code of conduct aligned with Ford's Code.

Sustainable Raw Materials

We are leading industry-wide efforts to support supply chain sustainability and eliminate conflict minerals in our supply chain.

Assessing Supplier Emissions

In 2012, we expanded our supplier greenhouse gas emissions survey to 135 suppliers.

Supply Chain Profile

Production

Products that become part of the vehicle

60+
Countries in which suppliers are located

38
Emerging markets in which suppliers are located

17
Emerging markets considered to have risks of substandard working conditions. These countries were identified as higher risk based on consultation with nongovernmental organizations, other companies with human rights experience, local Ford operations and various media and government reports

70
Ford manufacturing sites

1,300+
Supplier companies (Tier 1)

4,400+
Supplier manufacturing sites

130,000
Parts currently being manufactured

500
Production commodities to manage

Nonproduction

Products and services that do not become part of the vehicle, such as construction, computers, industrial materials, health care, machinery, transportation, advertising

11,000+
Supplier companies

600+
Nonproduction commodities

Total global buy

$75+ billion

Creating a Sustainable Supply Chain: Ford's Approach

At Ford, we promote long-term relationships with our suppliers and seek alignment with them on sustainability-related issues such as human rights and environmental responsibility. We work to ensure that Ford and our suppliers have management systems in place to mitigate potential risks, ensure continuity of supply and improve the overall sustainability of the complex global automotive supply chain. Our aim is to leverage our supply chain – and our industry – to make a positive impact in the markets in which we do business.

We take a three-pronged approach to creating a sustainable supply chain and managing sustainability issues throughout our supply chain:

1. Building strong relationships with suppliers and engaging strategic suppliers: Strong relationships improve our ability to encourage and influence the sustainability goals and management processes of our suppliers. We base supplier relationships on open communication, clear expectations and consistent requirements and processes. We have developed an Aligned Business Framework (ABF) with our most strategic suppliers, which helps us increase mutual profitability, improve quality, drive innovation and encourage shared commitment to sustainability goals. We work with our ABF suppliers at the corporate level to align and enhance approaches to a range of sustainability issues.

2. Developing shared commitment and supplier capability: We seek to foster a shared commitment to sustainability throughout our supply chain and to help our suppliers build the capability they need to manage sustainability issues internally and throughout their own supply chains. We do this through dialogue and engagement, training, contract requirements, compliance assessments and, where necessary, remediation at individual factories.

3. Collaborating across the automotive industry: To influence and achieve lasting change at all levels of the automotive supply chain, we are leading work with our counterparts in the automotive industry to develop common approaches to a full range of sustainability issues. We do this work through the Automotive Industry Action Group and other industry and cross-industry initiatives.

Related links

This Report

- Expanding Impact on Our Supply Chain

Expanding Impact on Our Supply Chain

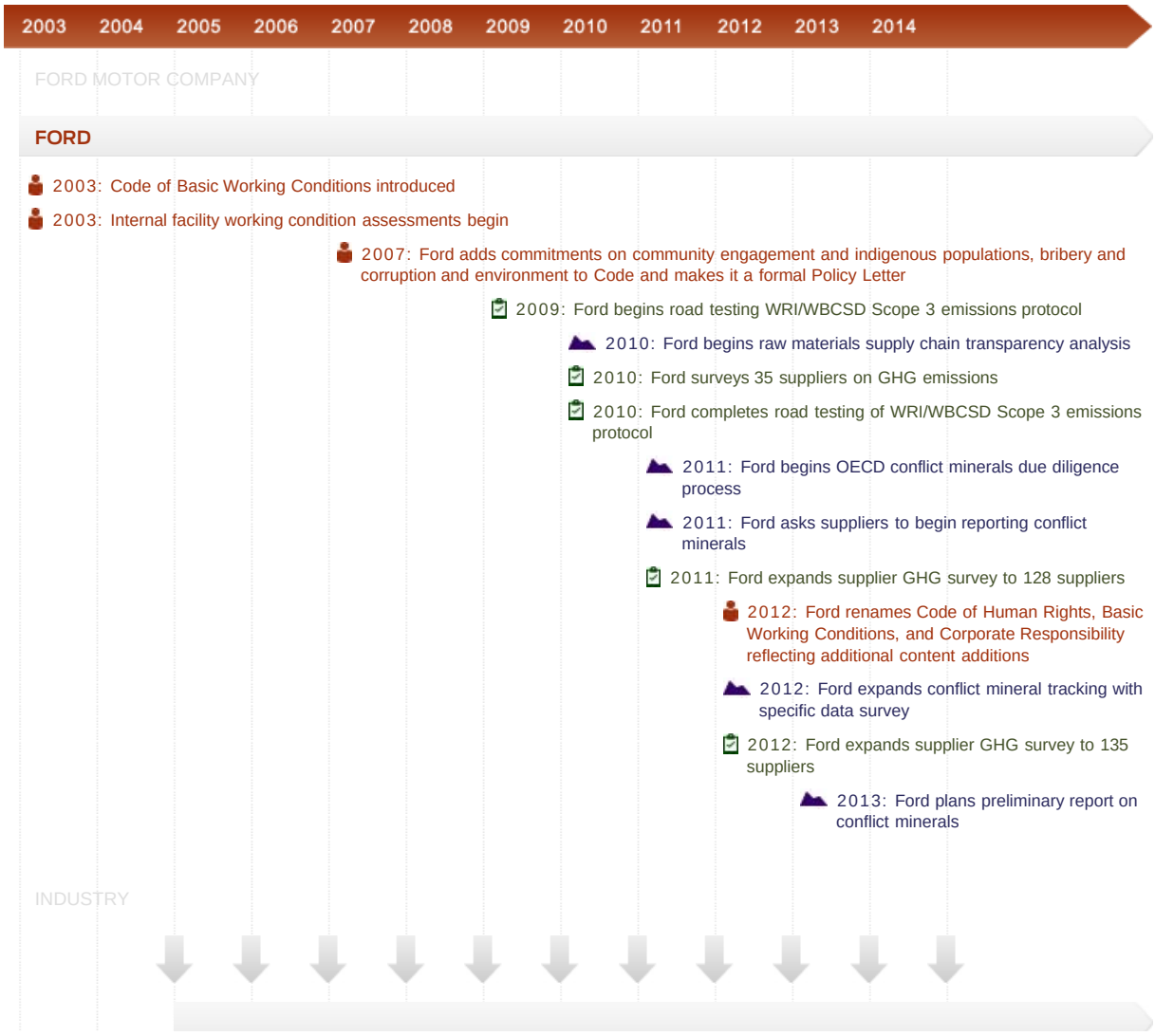
The graphic below illustrates how we are working toward our vision using a three-pronged approach to expand our impact throughout our supply chain and the industry as a whole. We work on multiple levels to increase the impact of our efforts.

Initially, we focused on working toward our sustainability vision within our own operations. For example, we began our work on human rights and working conditions by developing our own code of conduct for these issues, training our own workforce and assessing our own facilities. But we also work to push our goals and vision throughout our supply chain by collaborating with other manufacturers in the industry and working with our suppliers. We work with others in our industry to develop common expectations and guidance for suppliers and to provide consistent training. All of our direct (Tier 1) suppliers are subject to our Global Terms and Conditions, which require that both our own suppliers and their sub-tier suppliers meet specific sustainability expectations. We also provide training to our Tier 1 suppliers to build their capability to manage sustainability issues, and we require that they cascade the training to their own suppliers. And, we perform assessments of supplier facilities to ensure compliance.

Related links

This Report

- Human Rights in the Supply Chain: Ford's Global Working Conditions Program
- Supply Chain Environmental Management
- Conflict Minerals



INDUSTRY COLLABORATION

- 2005: Ford initiates industry work group on working conditions and human rights
- 2006: Joint industry, AIAG-led supplier trainings begin in select countries
- 2007: Joint industry supplier trainings continue
- 2010: Joint industry supplier trainings continue
- 2010: Ford helps form AIAG industry work group on conflict minerals
- 2010: Ford helps develop AIAG supplier GHG survey tool
- 2011: Joint industry supplier trainings continue
- 2011: Ford joins the Public Private Alliance for Responsible Minerals Trade (PPA) Governance Committee
- 2012: Joint industry supplier training content expanded to include ethical business practices and environmental sustainability
- 2012: Ford helps develop conflict mineral and smelter information collection tool with AIAG
- 2013: Joint industry supplier trainings continue

SUPPLY CHAIN

TIER 1 SUPPLIERS

- 2004: Sustainability requirements added to production supplier contracts
- 2004: Supplier facility working conditions assessments begin
- 2004: Ford supplier working conditions training begins
- 2005: Sustainability requirements added to non-production supplier contracts
- 2005: Supplier facility assessments continue
- 2006: Supplier facility assessments continue
- 2006: Ford helps suppliers build management capacity on human rights issues
- 2007: Ford adds sustainability management expectations to Aligned Business Framework, for strategic suppliers
- 2007: Supplier facility assessments continue
- 2008: Supplier facility assessments continue
- 2009: Supplier facility assessments continue
- 2010: Supplier facility assessments continue
- 2011: Supplier facility assessments continue
- 2012: Supplier facility assessments continue
- 2013: Supplier facility assessments continue

TIER 2 SUPPLIERS

- 2006: Ford requires suppliers to cascade working conditions training to their own supply chain
- 2007: Ford influences sub-tier suppliers by working with ABF strategic suppliers to develop Codes of conduct and supporting management systems, including for sub-tier supply chain management

TIER 3 SUPPLIERS

TIER N SUPPLIERS

Building Strong Supplier Relationships

Building strong relationships with suppliers is central to our ability to create a sustainable supply chain. Without strong relationships, we lessen our ability to influence the sustainability goals and management processes of our suppliers. We base our relationships with suppliers on open communication, clear expectations and consistent requirements and processes. And we work to maintain these relationships by:

- Deploying a single, global product-creation process that combines aggressive execution of product plans with minimal variances
- Enhancing process and part stability, commonality and reusability
- Providing real-time performance data to our supply base
- Providing suppliers with greater access to senior Ford managers in small-group settings
- Improving order fulfillment
- Engaging suppliers in discussions about process stability, incoming quality and corporate responsibility

Engaging Strategic Suppliers through Our Aligned Business Framework

In addition to the efforts we make to build relationships with all of our suppliers, we engage even more robustly with our most strategic suppliers, through our Aligned Business Framework (ABF). We introduced the ABF for our most strategic suppliers in 2005 to increase mutual profitability, improve quality, drive innovation and help us encourage shared commitment to sustainability goals. Through our ABF program, we help our Tier 1 suppliers develop the capability to manage their own supply chain sustainability issues.

We sign bilateral agreements with our ABF suppliers that comprehensively and formally spell out business commitments. For example, ABF suppliers must commit to manage and assure proper working conditions and responsible environmental management in their facilities and their supply chains. ABF suppliers must also adhere to our Global Terms and Conditions. Beyond the fact that it is the right thing to do, requiring suppliers to commit to these terms also reduces the risk of operational or reputational issues that could affect production and provides the basis for Ford to work with suppliers to ensure responsible behavior throughout the automotive supply chain. See the Building Shared Commitment and Capability throughout Our Supply Chain section for more on how we engage ABF suppliers on sustainability issues.

Ford's ABF Suppliers

As of June 2012, the ABF network included 103 companies, including 78 production and 25 nonproduction suppliers from around the world. Minority- and women-owned suppliers make up more than 10 percent of the total.

ABF Production Suppliers

- Akebono
- Asahi Glass Co Ltd.
- Autoliv
- Automotive Lighting
- Autoneum
- BASF
- Benetler Automobiltechnik GmbH
- BorgWarner
- Bosch
- Brembo

- Brose
- Central Glass of America
- Continental
- Cooper Standard
- Dakkota*
- Dana
- Delphi
- Denso
- Detroit Manufacturing Systems*
- Diamond Electric
- Dicastal Wheel
- Diversified Machine
- Dupont
- Eisenwerk Bruel GmbH
- Faurecia
- FCC Adams LLC
- Federal Mogul
- Flex-N-Gate*
- Foster
- GFT (Getrag/Ford JV)
- GKN
- Grupo Antolin*
- Hankook
- Hella
- Hitachi-Clarion
- HUSCO Automotive
- IAC
- Inalfa
- Inergy

- JCI
- Johnson Matthey
- Kautex Textron GmbH & Co.KG
- Key Safety Systems
- Kiekert
- KSPG Group
- Lear
- Linamar
- Magna
- MANN & HUMMEL
- Martinrea
- Maxion Wheels
- Michelin
- Mitsubishi Electric Corporation
- Muhr und Bender KG
- Neapco
- Nemak
- PPG
- Panasonic (Sanyo)
- Piston Automotive*
- Pirelli
- Prime Wheel*
- Ronal
- Samvardhana Motherson
- Sonavox
- Superior
- Takata Holdings
- Tenneco
- Thai Summit
- Thyssen Krupp
- Toyoda Gosei
- Trelleborg
- TRW

- Umicore
- Valeo
- Visteon
- Webasto
- Yazaki
- ZF

ABF Non-Production Suppliers

- Active Aero
- Aristeo
- Blue Hive
- Cisco
- Cross Country Automotive Services
- Devon Industrial Group*
- Durr
- EWI Worldwide
- Ewie*
- Federal Express
- Global Parts & Maintenance
- Gonzalez Production Systems*
- Imagination

- Kajima Overseas Asia
- Kuka
- MAG Automation
- Microsoft
- MSX International
- Penske
- Percepta
- Roush
- Team Detroit
- Uniworld Group*
- Waldbridge
- Zubi Advertising*

* indicates minority- or women-owned business enterprise supplier

Building Shared Commitment and Capability

Related links

This Report

- Building Strong Supplier Relationships
- Policy Letters and Directives

It is important that our suppliers share our commitment to environmental and social responsibility. Shared commitment improves the flow and quality of information critical to continuity of supply and compliance with regulations. Shared commitment helps to ensure efficiency and quality throughout the supply chain, and it helps us avoid risks to our operations and reputation that can arise due to substandard practices in our supply chain.

We encourage our suppliers to manage sustainability issues and risks within their own operations and supply chains, and we provide them with tools to build the capability to do this. For example, we have developed in-depth resource guides and sponsored presentations by subject-matter experts on issues such as human rights and greenhouse gas emissions. We have provided worksheets on emissions tracking and reporting and on code of conduct development. And we are sharing training materials we have developed (discussed below), as well as information and guidance on our compliance and training processes. Finally, we have committed to working with suppliers to help resolve issues and concerns.

While we provide training and guidance to suppliers on a range of sustainability issues, we have developed a detailed training program on human rights issues. The program includes training and follow-up assessments and requires remediation of substandard practices as necessary. This program is described in more detail in Human Rights in the Supply Chain: Building Supplier Capability through Localized Training and Collaboration.

Ford's ability to assess and influence the sustainability performance of our supply chain decreases the further suppliers are removed from us. It is challenging, for example, to influence and assess our Tier 1 suppliers' third- or fourth-tier suppliers. Fortunately, many of our Tier 1 suppliers are major multinational companies that already have the capability to implement and manage sustainability initiatives for their own operations and their own supply chains. Thus, we work hard to align these Tier 1 suppliers to our sustainability goals and rely on them to help us maintain a clear and consistent message as far down our supply chain as possible.

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Setting Requirements for Sustainability Issues in Our Supplier Contracts and Guides

The basis of our sustainability work with suppliers is the Ford Code of Human Rights, Basic Working Conditions and Corporate Responsibility. We first adopted this Code in 2003 and then formally issued it as Policy Letter 24 in 2007. The Code addresses workplace issues such as working hours, child labor, forced labor, nondiscrimination, freedom of association, and health and safety, as well as environmental issues and other topics. Though this Code applies directly to our own operations, we seek to do business with companies that have standards consistent with our Code. In 2012, Policy Letter 24 was revised to specifically communicate our encouragement of suppliers to adopt and enforce similar policies for their suppliers and subcontractors.

We incorporate requirements about sustainability management in our Global Terms and

Conditions, the contract to which every supplier doing business with Ford is subject. This core contract dictates our prohibition of the use of forced labor, child labor and physical disciplinary abuse. These requirements were added in January 2004 for production suppliers and in September 2005 for all others. Policy Letter 24 provides the standard for this contract, and the Terms and Conditions stipulate that that standard supersedes local law if it is more stringent. The Global Terms and Conditions also prohibit any practice in violation of local laws.

In addition, the Global Terms and Conditions serve to:

- Set the expectation that suppliers will work toward alignment with our Code in their own operations and their respective supply chains in the areas of harassment and discrimination, health and safety, wages and benefits, freedom of association, working hours, bribery and corruption, community engagement and environmental responsibility
- Make clear Ford's right to perform third-party site assessments to evaluate supplier performance
- Communicate that Ford can terminate the relationship for noncompliance or for failure to address noncompliance in a timely manner

Our Global Terms and Conditions are accompanied by Supplier Social Responsibility, Anti-Corruption, and Environmental Requirements Web-Guides, which further outline our expectations. For example, the supplier guide that covers human rights and working conditions amplifies the expectations set out in the Terms and Conditions, provides specific guidance and recommendations for self-assessments and alerts suppliers to the availability of factory-level training. In April 2012, we reissued these Guides with extensive edits, such that clearer guidance is provided on due diligence for conflict-free sourcing, business ethics, anti-corruption actions, environmental specifications for engineering and working conditions expectations.

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Going Further with Our ABF Suppliers

For our strategic ABF suppliers – which supply more than 65 percent of our annual buy – we have developed a rigorous process for managing sustainability issues that builds on the above but also goes further. The intent is for our ABF suppliers to wholly own responsibility for sustainability expectations and performance in their supply chain.

We encourage our ABF suppliers to develop a shared commitment to our sustainability goals and effective systems for managing sustainability issues through a three-phase developmental process:

Verify Supplier Code of Conduct

We ensure that our ABF suppliers have, or develop, a code of conduct aligned with our Code of Human Rights, Basic Working Conditions and Corporate Responsibility.

Training and Compliance

We provide training as needed to our ABF suppliers and ask them to conduct their own internal trainings to ensure that their employees understand their code of conduct. We also ask suppliers to develop a rigorous compliance process supporting their code.

Extending Expectations to Their Supply Chain

Finally, we ask our ABF suppliers to extend our shared sustainability goals and expectations to their own suppliers, expanding the impact of our sustainability goals throughout the multiple tiers of our supply chain.

The Ford Supply Chain Sustainability staff have implemented a robust process of review at each of the three phases, or milestones, of this developmental process. To date, more than 80 percent of our Production ABF suppliers have demonstrated that they have codes of conduct in place that are aligned with international standards, and 35 percent of our ABF suppliers have demonstrated that they have met all three Ford milestones – that is, they have aligned codes of conduct in place

supported by robust management systems governing their own operations and their supply chain. ABF suppliers also still participate in our factory-level human rights working conditions program if requested by Ford.

Through our work with ABF suppliers, we have identified key success factors that enable companies to make progress in managing sustainability issues in their own supply chains, including:

1. the identification of executive decision makers to coordinate cross-functional efforts;
2. the support of executive management and/or the Board of Directors; and
3. implementation support from Ford in the form of discussion facilitation and/or individual or regional in-person meetings.

The extension of working conditions and environmental expectations to the ABF companies' own supply base has proven to be the biggest challenge, given resource constraints and general lack of expertise and knowledge of the issues. The creation of tools and guidance by work groups at the Automotive Industry Action Group, and by the United Nations Global Compact, have been useful to our ABF suppliers in their development of sustainable supply chain systems.

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Supplier Corporate Responsibility Recognition of Achievement Award

For several years, Ford has recognized supplier companies that demonstrate leadership in environmental and social performance with a corporate responsibility award. Suppliers must meet several criteria, including ISO 14001 certification at all manufacturing sites, an operational code of conduct aligned with international standards, an exemplary material management reporting record and demonstration of overall sustainability leadership by incorporating environmental and social considerations into their business.

In May 2012, Ford selected one winner for the 2011 Corporate Responsibility Recognition of Achievement Award: Saturn Electronics and Engineering.

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Industry and Cross-Industry Collaboration

We believe that collaborative action within our industry allows us to more effectively influence all levels of the automotive supply chain. We have taken an "open book" approach to our supply chain work, sharing best practices, challenges and opportunities with others in our industry. We primarily work through the Automotive Industry Action Group, or AIAG. The AIAG is a North American, member-based, nonprofit industry group specializing in supply chain issues. It supports industry efforts to establish a seamless, efficient and responsible supply chain. Member companies donate the time of individuals to work at the AIAG, which operates as a noncompetitive, open forum that is intended to develop recommendations and best practices for reducing complexity and ensuring alignment on common issues across the industry.

We work on supply chain sustainability issues through the AIAG's Corporate Responsibility Committee. This committee currently focuses on five main issues: global working conditions, Conflict Minerals, greenhouse gases, chemicals management and reporting, and health care value. There are AIAG subcommittees for each of these issue areas and for other key issues. Ford staff chair three work groups: chemicals management and reporting, greenhouse gases, and environmental performance metrics. Ford has also historically contributed an "executive on loan" to the AIAG to support the industry's work and share what we have learned from working on these issues within our own operations.

Focus Areas for Industry Cooperation

Work in partnership with the AIAG continues on several fronts. Member companies are:

- Exploring an industry response to raw materials sourcing and transparency challenges
- Providing common guidance and tools for responsible procurement
- Continuing to expand a factory-level supplier training program for a responsible supply chain
- Increasing supplier ownership of corporate responsibility issues through an expansion of engagement opportunities
- Developing resources and networks that will ensure the successful communication of responsible procurement expectations throughout the automotive supply chain

For all workstreams, the AIAG and the companies are actively reaching out to others in the automotive supply chain, including global automakers and heavy truck manufacturers, industry associations and major automotive suppliers, as well as participating in cross-sectoral initiatives. Broader participation will be needed to achieve the vision of an industry-wide approach to promoting supply chain sustainability.

For more about the corporate responsibility accomplishments and ongoing work of the industry through the AIAG, see their website.

In addition to our work through the AIAG, Ford is helping to address common issues of environmental and social responsibility in the automotive supply chain through active participation in several other industry and cross-industry associations and corresponding work groups, including:

- The UN Global Compact Advisory Group on Supply Chain Sustainability. This advisory group seeks to develop and promote tools and guidance for businesses on key issues and best practices in developing sustainable supply chains. Ford is one of approximately 20 stakeholders in this invitation-only group, and one of only two automotive companies. As part of this work we are one of the lead developers of an online portal of tools and resources designed to assist business practitioners in embedding sustainability in supply chains.

- CSR Europe Automotive Working Group on Supply Chain Sustainability. In 2013, Ford joined with seven other major automakers and CSR Europe, a leading European

Related links

External Websites

- AIAG
- UN Global Compact Advisory Group on Supply Chain Sustainability
- CSR Europe

business network for corporate social responsibility, to create this working group. The primary goals of the group are to share experiences and information on sustainability issues in the automotive supply chain; develop and apply common tools; work together on common projects in order to improve sustainability in supply chains; and send a common message to supply chains concerning sustainability activities and requirements.

Human Rights in the Supply Chain: Ford's Global Working Conditions Program

Human rights and working conditions are a primary focus of our work with suppliers. We aim to ensure that everything we make – or others make for us – is produced consistent with local law and our Code of Human Rights, Basic Working Conditions and Corporate Responsibility. This can be challenging, as we have less control in suppliers' facilities than in our own, particularly at the sub-tier level (i.e., our suppliers' suppliers), where the risk for substandard working conditions is often heightened. For this reason, we have had to define our approach carefully and involve suppliers, other automakers, governments, nongovernmental organizations (NGOs) and other stakeholders.

The legal structures governing working conditions, and the level of enforcement, vary widely across the countries in which we operate. Ensuring sound working conditions in the supply chain is ultimately our suppliers' responsibility, and we would like governments to play the lead role in enforcing compliance with laws. As customers, however, we have an active role to play in supplier development.

Since we began work with our suppliers to ensure alignment with our Code of Human Rights, Basic Working Conditions and Corporate Responsibility, our approach has emphasized building capability throughout the supply chain to manage working conditions effectively. Our primary focus has been on training and education regarding working conditions issues and management systems.

We also use third-party assessments of individual supplier factories to verify performance and progress. Our assessments are announced and coordinated with the supplier and Ford business owners. We do not conduct unannounced audits, as the risk profile of our Tier 1 supply base does not include significant indication of the types of issues intended to be "caught" during an unannounced audit.

Our long-term vision is for our industry as a whole to work together to ensure that high expectations around human rights and working conditions are met throughout the supply chain. We began promoting cross-industry collaboration in North America and have extended these efforts to include global manufacturers. Our view is that all participants in the automotive supply chain – from the original equipment manufacturers (OEMs) such as Ford, to the suppliers themselves, to the government agencies that set and enforce the regulations governing operations – must be involved to make these efforts sustainable in the long run. Such collective action will not only minimize costs and increase efficiency for OEMs and suppliers alike, but will lead to better results than if individual companies take steps in isolation.

Related links

This Report

- Policy Letters and Directives
- Expanding Impact on Our Supply Chain

Building Supplier Capability through Localized Training and Collaboration

The primary focus of our work on human rights in our supply chain is building capability among our suppliers to responsibly manage working conditions. We began by developing a training curriculum for Ford suppliers in approximately 20 priority countries and surrounding areas. (See Working Conditions Program Focus Countries box below.) Initially, we based the trainings on Ford's own Code of Basic Working Conditions and implemented them ourselves at our supplier facilities.

We recognized from the outset, however, that a joint effort with other automakers would reach a greater number of suppliers more efficiently – as many of those suppliers are shared across multiple automakers – and would ultimately be more successful in embedding a sound approach to working conditions throughout the automotive supply chain. So in 2005, we initiated a work group within the Automotive Industry Action Group (AIAG), and we recruited other automakers in North America, Asia and Europe to participate.

We have since worked with other automakers through the AIAG to develop a set of guidance statements that establish a shared industry voice on key working conditions issues and a training program for industry suppliers. Initially the industry guidance statements and trainings covered child labor, forced labor, freedom of association, harassment and discrimination, health and safety, wages and benefits, and working hours. In 2010, they were expanded to cover business ethics and environmental responsibility.

It should be noted that Ford's specific expectations in the Ford Code of Human Rights, Basic Working Conditions and Corporate Responsibility for child labor exceed the expectations in the industry guidance statements and also include elements not yet addressed by the industry guidance statements, such as community engagement and indigenous populations.

We have trained nearly

2,100

Ford suppliers since we began our working conditions training program, and this training has been cascaded to more than

430,000

individual workers and nearly

85,000

sub-tier supplier companies

Related links

This Report

- Data: Working Conditions Training and Assessment Status for Supply Chain

External Websites

- AIAG

Supplier Training Program

Most of our supplier training is now implemented through the AIAG in conjunction with other automakers. In 2012, we expanded the content of these AIAG-led trainings to include ethical business practices and environmental responsibility, in addition to human rights and working conditions. We continue to supplement AIAG-led trainings done in conjunction with other automakers with Ford-specific workshops as needed.

Where Trainings Occur

Beginning in 2007, the sponsoring OEMs launched joint factory-level training workshops in China and Mexico. We have added locations since that time. To date, the expanded trainings have been implemented in Argentina, Brazil, China, Mexico, Romania, Russia, Thailand, Turkey and Venezuela.

Locations for trainings are chosen through discussion and agreement by the AIAG member companies. The launch of each series of in-country trainings involves participation by OEM representatives and Tier 1 suppliers as well as local industry associations and government support where possible. At Ford, we develop our recommendations for training locations with a focus on the 20 countries and regions we have identified as having higher risks of substandard working conditions (see Working Conditions Program Focus Countries box below). Among those countries, we prioritize our recommendations for training locations based on production and sourcing trends, sales trends and relative perceived risk based on the input of human rights groups, other companies' experience and other geopolitical analysis. We periodically review our list of priority countries in comparison with our global sourcing footprint. We did not find it necessary to add countries in the most recent review.

What Training Sessions Include

Training sessions are customized to align with the unique laws, customs, cultures and needs of each location. Generally, the following working conditions and environmental responsibility issues are addressed:

- Harassment and discrimination
- Health and safety
- Wages and benefits
- Working hours
- Child labor
- Forced labor
- Freedom of association
- Key areas of environmental responsibility, including energy and greenhouse gas emissions, waste, regulatory requirements, environmental testing, and employee, subcontractor and supplier training
- Environmental management systems and continuous improvement
- Environmental performance of products

Training workshops emphasize how these topics are covered in local legal standards, in the industry guidance developed by participating automotive OEMs, and in international best practices. Both the industry guidance and international best practices shared in training sessions may exceed local laws. The trainings also include strategies for developing management systems to ensure compliance in each topic area. And, they address the business benefits of promoting social and environmental responsibility, including protecting and enhancing brand reputation, improving quality and productivity, and avoiding costs associated with employee turnover, absenteeism, injury and illness.

The training sessions are generally day-long interactive workshops facilitated by qualified trainers and involving multiple automotive suppliers. They are structured to provide participants with a solid understanding of customer expectations, local law, best practices and sustainability management systems.

Trainings generally target managers from the human resources, health and safety, and legal departments of participating companies. The sessions use a “train-the-trainer” approach to expand the scope and impact of the training. Participating suppliers are required to cascade the information they learn to management and all personnel within their own company as well as to their direct suppliers. Ford requires confirmation that information was shared within four months of the training session.

In 2010, the automakers collaborating at the AIAG launched an online training program on supply chain working conditions and responsible procurement targeted at purchasing and supply chain management professionals. This web-based training is offered free of charge to suppliers of the five OEMs participating in the AIAG training program. The training has also been deployed internally at a number of the sponsoring OEMs for their own global purchasing and supply chain staffs.

2012 Trainings Completed

In 2012, all Ford trainings were joint industry trainings coordinated through the AIAG. These trainings included both in-person classroom training sessions and e-learning trainings. The AIAG held classroom training sessions in Argentina, China, Mexico, Russia, Thailand, Turkey and Venezuela. More than 325 Ford suppliers attended these classroom sessions.

This brings the global total for trained Ford suppliers to nearly 2,100. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with the AIAG and other automakers.) Because attendees are required to subsequently cascade the training and expectations to the entire factory population and suppliers, these trainings indirectly reach even more companies and individuals. Through this cascading process, the training of suppliers globally since the inception of the program has impacted more than 2,700 supplier representatives, who in turn have cascaded the training information to nearly 25,000 supplier managers and more than 430,000 individual workers as well as nearly 85,000 sub-tier supplier companies.

Suppliers trained in 2012 have now moved on to the process of self-assessing their facilities for compliance with local law and Ford expectations and communicating expectations to their own workers and their suppliers.

In 2013 we plan to conduct additional supplier training sessions in conjunction with the AIAG in Brazil, Mexico, Romania, South Africa and Turkey. Where possible, these courses will be open to any interested company; thus Tier 1 suppliers will have the option of asking their own suppliers to attend. The intent is, once again, to increase the scope of impact of the training and push working conditions expectations further down the supply chain.

Next Steps in Industry Training

As the AIAG initiatives develop and mature, Ford will maintain a leadership position in our work with the supply chain. We will continue to conduct our own training programs in countries not covered by AIAG programs. We will also seek further opportunities to strategically leverage our audit data and training processes to enhance our overall approach to working conditions and environmental responsibility in the automotive supply chain.

Working Conditions Program Focus Countries

- Americas and Caribbean: Argentina, Brazil, Colombia, Mexico (and Central America region), and Venezuela
- Asia and Africa: China, India, Korea, Malaysia, Morocco, the Philippines, South Africa, Taiwan, Thailand and Vietnam
- Europe: Romania, Russia and Turkey

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Assessing Suppliers

Since 2003, we have conducted more than 800[1] third-party audits of existing and prospective Tier 1 suppliers in 20 countries on issues relating to ethics and working conditions. The audits provide feedback to Ford and suppliers about how well suppliers are meeting legal requirements and Ford's expectations. The audits also provide insight into the effectiveness of our training programs. The audits consist of a detailed questionnaire, a document review, factory visits, and management and employee interviews, and are conducted by external, qualified social auditors.

In 2012, we conducted audits across our 20 target countries. The findings from the 2012 audits were generally consistent with those we had previously conducted. Namely, they identified certain general health and safety issues, several wages and benefits issues and a limited number of other types of noncompliance.

The findings from Ford's 2012 supplier audits included:

- No evidence of forced labor or physical disciplinary abuse
- Some health and safety issues, including inadequate emergency systems
- In some cases, a lack of appropriate timekeeping systems, and thus a failure to pay correct overtime wages
- In some cases, a failure to pay the correct local minimum wage or overtime, or to provide the correct social insurance
- A general need to clearly define policy on harassment and discrimination
- Limited cases of restricted workers doing hazardous work
- In some cases, limited or restricted access to appropriate documentation regarding subcontracted labor and privacy policies
- Working hours violations related to overtime (in some cases, this overtime is a chronic issue resulting from poor capacity planning, but more often it occurs only during peak production periods)

Freedom of association has been difficult to verify. While all assessed suppliers have either union representatives or a grievance process, there may be issues we have not been able to identify through our assessment process.

Another common finding is that suppliers often lack fully developed management systems – including continual improvement processes – to support compliance over time. This finding has validated our training approach, which continues to emphasize management systems at both the corporate and factory levels.

If any issues are identified during an audit, suppliers are required to complete corrective action plans, which Ford reviews and approves. The corrective action plans outline how a supplier will resolve the issues and include clear responsibility and timelines for completion. Assessments cannot be considered "closed" until any violations of local laws and regulations are resolved and until the supplier has responded in writing with an action plan for improving management systems and policies to avoid future issues. We return to the facility within six to 12 months as required to confirm resolution of the issues. Suppliers that continue to be out of compliance with Ford expectations and/or local laws are at risk of being removed from Ford's supply base.

The audit tool that Ford uses with Tier 1 suppliers has been an important means for furthering our understanding of both the issues and the root causes for noncompliance. If issues are identified or allegations made of a sub-tier supplier, Ford makes available our assessment tool and guidance to our responsible Tier 1 supplier. In this way, we hope to affect positive change more broadly and enable our suppliers to effectively manage their supply base.

In 2013, we will continue to conduct supplier assessments across the target countries as necessary. We constantly monitor approaches developed by other organizations and industries in

We have conducted more than

800

assessments of Tier 1 suppliers in

20

countries on issues relating to ethics and working conditions

Related links

This Report

- Data: Working Conditions Training and Assessment Status for Supply Chain

order to incorporate what they have learned into our approach. We will continue to work with direct suppliers to help create ownership of working conditions within those supplier organizations. Clear, consistent communication and further business integration of processes that support responsible working conditions throughout the supply chain will be a key component of our continued work.

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1. This number has been revised from last year's report to address calculation errors.

Sustainable Raw Materials

As automobiles incorporate more advanced technologies, the material content of vehicles becomes more varied. Ford has a long history of seeking to use sustainable materials in our products and source from suppliers that demonstrate sustainable business practices, including respect for human rights and the environment. Although the majority of what we buy is parts and assemblies used directly in vehicles, there is a need to take a closer look at the farthest reaches of the supply chain, including raw material extraction.

The extraction of raw materials can have significant social and economic impacts, both positive and negative. Extractive processes for raw materials can create employment and economic growth, but they also have the potential to disrupt or displace communities and endanger public health. Raw material extraction may result in environmental impacts, such as water scarcity, air and water pollution, and waste generation that must be minimized and mitigated. If the extraction is managed by unscrupulous operators, workers risk exploitation, and other economic, social and environmental risks are multiplied. In addition, the concentration of strategic materials in a limited number of locations can present significant geopolitical risks to companies all along the supply chain.

Most raw materials are not supplied directly to Ford; rather, they are provided to our suppliers or our suppliers' suppliers. On average, raw materials pass through six to 10 suppliers before reaching Ford. This makes tracing the source of raw materials very challenging. We have analyzed several select raw materials to identify sustainability risks and opportunities related to extraction, use and end-of-life treatment.

Overall, our approach to promoting sustainable raw material supply chains includes the following:

- Advancing transparency in our supply chain by working to better understand the relative material content of our products. We strive to know, where possible, the original source of the raw materials that reach us through our supply chain and to know and influence our direct suppliers' responsible sourcing policies and practices.
- Engaging with policy makers and global stakeholders. We have been invited by the U.S. State Department, the International Labour Organization, the United Nations Global Compact, the Organisation for Economic Co-operation and Development and the Interfaith Center for Corporate Responsibility to participate in forums on eradicating forced labor, child labor, trafficking and other issues that can result from abuses in the extractive sector.
- Collaborating with others in our industry and related industries through the Automotive Industry Action Group (AIAG) and other forums to promote effective industry-wide approaches.
- Promoting the recycling of materials by maximizing the economic viability of recycling, where feasible.
- Seeking flexibility of supply through the proactive identification of potential supply and material alternatives. In those instances where the continued use of a material or supplier is impossible or misaligned with Ford's stated values, we will explore the potential of a responsible viable alternate source or material.

Public awareness of the potential and actual risks regarding raw material extraction has increased, due to investor interest, campaigns by nongovernmental organizations (NGOs), media coverage and greater access to information. In addition, there have been growing calls for transparency in raw material supply chains, in order to inform investors' evaluations of risk and to help governments and NGOs monitor and address key issues.

Communication is a key aspect of due diligence for responsible sourcing, and we are continuing to fine-tune all aspects of our communication in this area. Historically, we have voluntarily shared some information with stakeholders through direct communications and through this Sustainability

Report. We increasingly face mandates for public disclosure statements, such as those required by the California Transparency in Supply Chains Act of 2010 and the Dodd-Frank Wall Street Reform and Consumer Protection Act, Section 1502 (Conflict Minerals). This Sustainability Report will continue to be our primary means of communication with the general public and other stakeholders on supply chain sustainability. We also communicate our positions and requirements directly to our suppliers through our contract terms, written communications on our expectations, and regular supplier meetings. We reinforce our positions and expectations in communications between suppliers and Ford Purchasing and Quality personnel. We also hold training sessions on these issues at AIAG industry forums.

Certain raw materials are of particular concern to Ford, and in this section we address three areas in more detail:

- Conflict Minerals
- Forced labor and human trafficking in supply chains and the California Transparency in Supply Chains Act of 2010 (SB657)
- Rare earth elements

Conflict Minerals

Related links

This Report

- Materials Management

Conflict Mineral Reporting Requirements

On August 22, 2012, the U.S. Securities and Exchange Commission (SEC) adopted final rules to implement reporting and disclosure requirements concerning Conflict Minerals, as directed by Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. These rules require manufacturers that file certain reports with the SEC to disclose in a new "Form SD" filing whether the products they manufacture or contract to manufacture contain Conflict Minerals that are "necessary to the functionality or production" of their products – and, if so, whether these materials can be declared "conflict free."

"Conflict Minerals" currently include cassiterite, columbite/tantalite, and wolframite (the most common derivatives of which are tin, tantalum and tungsten, respectively) as well as gold, regardless of where these minerals are mined, processed or sold. (The U.S. Secretary of State may designate other minerals in the future.)

The requirements regarding Conflict Minerals were enacted to further the humanitarian goal of ending violent conflict and human rights abuses in the Democratic Republic of the Congo and surrounding countries (referred to as the Covered Countries [see map below]), which have been partially financed by the exploitation and trade of Conflict Minerals. We believe that the ultimate goal of Section 1502 is for all SEC filers to be able to certify that all Conflict Minerals from Covered Countries which are contained in products they manufacture or contract to manufacture have come from smelters and refiners identified as "conflict free" through the Conflict-Free Smelter assessment program (details at www.conflictfreesmelter.org). Ford supports the humanitarian goal of ending violent conflict and human rights abuses.

Starting in May 2014, Ford will be required to report annually to the SEC whether our products that contain Conflict Minerals are "conflict free." All suppliers globally that provide parts contained in Ford vehicles, service parts, or other parts sold by Ford are required to support this effort. Specifically, suppliers will be required to respond to an annual survey to identify whether products they manufacture or contract to manufacture for Ford contain any Conflict Minerals necessary to the functionality or production of their products. If any Conflict Minerals are contained in the affected product supplied to Ford, the supplier will be required to determine the country of origin of these materials and whether the Conflict Minerals can be identified as "conflict free," and to report this information to Ford.

Each supplier is likely to receive similar requests from multiple customers. Ford has been working closely with the Automotive Industry Action Group (AIAG) and our original equipment manufacturer (OEM) and Tier 1 colleagues to ensure maximum consistency (and minimum duplication of effort) in the reports requested from suppliers. We have recommended that our suppliers enroll in an AIAG training session to learn how to prepare and submit a report to disclose their companies' use of Conflict Minerals. We also have recommended that our suppliers refer to the Organisation for Economic Co-operation and Development (OECD) guidelines on Conflict Minerals whenever sourcing Conflict Minerals from Covered Countries.

Covered Countries for Conflict Minerals

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Ford's Conflict Minerals Due Diligence Process

The OECD provides practical guidance to companies throughout the supply chain on a set of actions that can be taken to ensure responsible due diligence. Ford has found the OECD's guidance to be particularly useful in designing our own due diligence processes. We are currently working through the OECD's five-step process as part of our compliance efforts.

OECD Five-Step Process

Step 1:	Step 2:	Step 3:	Step 4:	Step 5:
Establish strong corporate management systems	Identify and assess risk in the supply chain	Design and implement a strategy to respond to identified risks	Third-party audit of smelters'/refiners' due diligence practices	Report annually on supply chain due diligence and outcomes

Ford's Actions to Date

Step 1:	Step 2:	Step 3:	Step 4:	Step 5:
Assigned accountability and cross-functional team; revised policy and supplier guides to address conflict mineral issues	Requiring supplier material content reporting and assigning prioritization of suppliers based on declared content	Balanced strategy of Ford and industry action to ensure robust sourcing policies, practices and reporting	Participation in the conflict-free sourcing program through the AIAG	Public disclosure in this Sustainability Report and planned SEC filing for 2013 calendar year

Multi-Stakeholder Collaboration

OECD: Ford provided input into the creation of the OECD Due Diligence Framework and participated directly in the pilot implementation phase with the OECD as well as indirectly through the AIAG.	Public–Private Alliance: Ford participates in the Governance Committee for the Public Private Alliance for Responsible Minerals Trade.	Multi-Stakeholder Initiative: Ford participates in the multi-stakeholder group of investors, companies and NGOs to explore common positions and advocate realistic solutions to the Conflict Minerals challenge.	AIAG: Ford participates in the Conflict Minerals Workgroup at the AIAG, which pursues common solutions for the automotive industry.

Ford's actions + Industry Collaboration = Greater Global Impact

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Establishing Corporate Management Systems

Ford has established a cross-functional team to address the challenge of Conflict Minerals in the supply chain. This team is led by our Supply Chain Sustainability function within Global Purchasing and is supported by Ford departments including Product Development, Materials Management, Corporate Sustainability, Finance, Government Affairs, Public Affairs and the Office of the General Counsel. The Purchasing organization has the primary responsibility for working with suppliers to

obtain information on parts that may contain Conflict Minerals, as well as tracking and documenting Ford's progress and generating Ford's required reporting.

Since 2004, our Global Terms and Conditions with suppliers have expressly encouraged suppliers to adopt and enforce a Code of Basic Working Conditions similar to that which Ford has adopted and to have their subcontractors do so as well. We have provided guidance on supply chain due diligence and sourcing from conflict-affected and high-risk areas in our Supplier Social Responsibility and Anti-Corruption Requirements Web-Guide, which, like our basic working conditions requirements, is incorporated into our Global Terms and Conditions.

We engage with key suppliers on the topics of policy and management systems through our strategic supplier framework – the Aligned Business Framework [link]. Our ongoing work with these suppliers includes the development or enhancement of management systems for supply chain sustainability. It is important that we fully align with suppliers on the approach to responsible sourcing of raw materials.

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Identifying and Assessing Risk in the Supply Chain

Since 2011, we have been asking our global production supply base to report their use of Conflict Minerals by material weight in our existing automotive industry database – the International Materials Database System (IMDS), which we use to track material content of our vehicles. Although the database tracks material content to monitor for the presence of certain regulated substances, it does not record information about the countries from which materials originated. We have used the database to assess risk in the supply base for the use of Conflict Minerals and to prioritize follow-up with suppliers for further information.

In 2012, we supplemented information collected through the IMDS with a Conflict Minerals-specific survey to begin to identify parts containing Conflict Minerals and their sources. We also are working with the AIAG in its efforts to develop and deploy the iPoint Conflict Mineral Platform (iPCMP), which facilitates the collection of raw material sourcing and smelter/refiner information to supplement materials information gathered through the IMDS.

As part of our due diligence efforts, we will be working with our suppliers throughout calendar year 2013 to ensure that the most accurate and complete information available is used for our Form SD filing due on May 31, 2014. Rather than waiting until year-end to survey the supply chain landscape, we have asked suppliers to provide interim sourcing information during the third quarter of 2013 so that we can perform an initial assessment of available information and prioritize our follow-up efforts as we prepare to assess full-year information, which is due from suppliers in January 2014.

Based on preliminary 2012 information-gathering efforts, about one-third of our production suppliers reported that Conflict Minerals are used in products supplied to Ford, and thousands of parts are impacted. Identifying the source countries of the Conflict Minerals in such a vast array of parts and through many tiers of suppliers will require intensive efforts by all involved. We are already engaged in due diligence to try to ensure the best possible output using the information available.

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Responding to Identified Risks

We understand our assessment of risk to be an evolving process as more information is made available to our suppliers and to us about the supply chain routes that may ultimately lead to our vehicles. If, through our due diligence efforts, we discover that Conflict Minerals that cannot be confirmed as "conflict free" have made their way into our vehicles or service parts, we will immediately engage the supplier to pursue responsible conflict-free sourcing for all products supplied to Ford.

As part of the AIAG work group, we also are actively participating in and supporting the development of a conflict-free smelter program, which is designed to validate as "conflict free" those raw material processors that do not support armed conflict. As verified conflict-free smelter capacity becomes available, it is our intention to require suppliers to use only metals that can be confirmed as "conflict free."

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Annual Reporting

We will continue to refine and improve our processes for implementing the necessary due diligence regarding Conflict Minerals. As we work with our suppliers, the automotive industry and other key stakeholders on this issue, we will continue to implement the OECD's Five-Step process. The final step in our process will be completion of the new SEC Form SD filing, which is required on an annual basis. We already report on our efforts in this Sustainability Report; in the future, we also will provide more specific data on our progress regarding material and smelter/refiner identification in our formal SEC reporting.

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Forced Labor and Human Trafficking in Supply Chains

In the automotive industry, it is difficult to assure that the extraction and original production of raw materials is done responsibly, because these processes occur so far up our supply chain and, therefore, are far outside of Ford's direct control. Nonetheless, we are actively engaging with our industry, stakeholders and direct suppliers to address the risk of human rights abuses, including forced labor and human trafficking, deep in our supply chain.

A range of products and materials sourced from specific geographies have been identified and described by the U.S. Department of Labor as posing potential human rights concerns. Included on this list is charcoal from Brazil – a finding consistent with nongovernmental organization (NGO) and media concerns that were brought to Ford's attention in 2006. Charcoal can be used to make pig iron, a key ingredient in steel production. Given the persistence of risks associated with this material, Ford is working toward a multilateral solution with key players.

California's New Transparency in Supply Chains Law

Beginning in 2012, many companies manufacturing or selling products in the state of California are required to disclose their efforts (if any) to address the issue of forced labor and human trafficking, per the California Transparency in Supply Chains Act of 2010 (SB 657). This law was designed to increase the amount of information made available by companies, thereby allowing consumers to make better, more informed choices regarding the products they buy and the companies they choose to support.

Forced labor and human trafficking can take many forms, including child labor. Ford has a zero-tolerance policy for both forced labor and child labor. We have instituted a number of actions to safeguard against human rights abuses, including forced labor. For example:

- We regularly assess risk related to our supply base. Our preliminary assessment is based upon geography, the commodity purchased, the level of manual labor required for part/assembly production, the supplier's ownership structure, supplier quality performance and the nature of the business transaction. This risk assessment is performed by Ford with input from external stakeholders. In-depth supplier self-assessments are conducted biannually with our strategic suppliers as a part of our ongoing development work with them.

- Our Global Terms and Conditions forbid the use of forced labor, child labor and physically abusive disciplinary practices. Our definition of forced labor is inclusive of trafficking, and this was made explicit in the 2012 revisions to our Code of Human Rights, Basic Working Conditions and Corporate Responsibility. Ford's purchase orders require suppliers to certify compliance with our prohibition of forced labor, child labor and physical disciplinary abuse as part of our Global Terms and Conditions that govern the purchase by Ford of goods and services from suppliers. We reserve the right to terminate our relationship with a supplier if issues of noncompliance with our policies are discovered and/or noncompliance is not addressed in a timely manner.

- We conduct training and capability building.
  - We regularly conduct internal training on our Code of Human Rights, Basic Working Conditions and Corporate Responsibility with our Global Purchasing staff, including management and supplier quality teams. Additional training is conducted regarding our Supply Chain Sustainability Program, including coverage of the Code and our Global Working Conditions Program, emphasizing the role of our buyers and supplier quality engineers in responsible decision making.

  - Ford requires suppliers in high-risk markets to attend training that increases awareness of Ford's requirements and legal requirements, including those related to forced labor and child labor. The training enables management systems that will ensure compliance over time. We conduct this training at Ford where necessary but increasingly with other automakers in the industry through the Automotive Industry Action Group (AIAG).

Related links

This Report

- Assessing Suppliers
- Building Supplier Capability through Localized Training and Collaboration

- Ford and five other automakers at the AIAG have funded and created a training for buyers and supply chain managers on supply chain sustainability. This training addresses issues including supply chain risk assessments, policy and supplier contract development and other actions that can be taken to ensure that forced labor and child labor do not enter the automotive supply chain. This training is made available to all companies for free on the AIAG website.

- We regularly conduct audits of at-risk Tier 1 supplier factories to monitor compliance with Ford expectations and legal requirements. Following audits, suppliers are required to complete corrective action plans, which Ford reviews and approves. The corrective action plans outline how a supplier will resolve issues uncovered in audits and include clear responsibility and timelines for completion. We return to the facility within six to 12 months as required to confirm resolution of the issues. Forced labor has never been identified by third-party assessments of our supply chain, although lack of a forced labor policy at the supplier level is common and is always an element addressed in the corrective action plan when identified. These audits are independent and announced. We choose which facilities to audit based upon our risk assessment as described above. Our supply chain work has demonstrated to us that the risk for issues such as forced labor and child labor (as well as other human rights and working conditions issues) are relatively low for Tier 1 suppliers. The risk increases, however, the further down the tiers of suppliers toward the source of the raw materials. Ford does not have visibility or direct access to these suppliers for the purpose of verification, and thus we work with our Tier 1 suppliers as well as other industries, NGOs and governments to explore the options for appropriate validation systems.

Charcoal and Pig Iron Production in Brazil: An Example of Our Efforts to Address Human Rights Abuses in Our Supply Chain

Ford's efforts to address human rights abuses in the production of charcoal and pig iron in Brazil illustrate our proactive approach to addressing human rights issues deep in our raw materials supply chain. In 2006, Ford discovered that charcoal produced in Brazil with the use of slave labor had found its way into our supply chain. Pig iron is a key ingredient in steel production, and in Brazil, charcoal is often used as fuel in the production of pig iron (see the Pig Iron Producers graphic below). The charcoal is made from wood harvested in remote areas of Brazil where instances of forced labor have been found to occur. At the time this issue was brought to our attention in 2006, pig iron was purchased directly by Ford and used at our Cleveland Casting Plant.

When we learned of the situation, we immediately stopped sourcing from the site that was identified in the investigation, but we continued dialogue with the supplier and helped them to develop management systems until such time as the supplier could ensure it was not supporting forced labor in the supply chain for pig iron. We then identified all potential points of entry for pig iron in the Ford value chain and engaged with all relevant suppliers, seeking assurances from them that forced labor was not employed anywhere in their value chain. This included an intensive mapping of five to six tiers of suppliers (including importers, exporters and trading companies). We also requested additional detail regarding our Tier 1 suppliers' systems for safeguarding human rights throughout their operations, including procurement.

The Cleveland Casting Plant was closed in 2010, and Ford no longer directly purchases pig iron. Regardless, we have continued, through integrated supplier development programs, to convey our prohibition of forced labor and to validate, where possible, supplier compliance. Validation continues to be challenging given the number of supply chain actors between Ford and the charcoal camps in Brazil. For this reason, in 2011 we renewed our inquiry into the potential points of entry for Brazilian pig iron to our supply chain and are evaluating specific supplier progress on management systems to ensure responsible procurement of this material. We also are working with the U.S. State Department, the International Labour Organization and the governing committee of the Brazilian National Pact to Eradicate Forced Labor to seek multilateral solutions that will help to validate information and improve transparency. Ultimately, we hope to enable responsible purchasing decisions throughout the supply chain.

Pig Iron Producers

Rare Earth Elements

"Rare earth elements" are a set of 17 chemical elements in the periodic table. Though many of these elements are not actually rare, their geochemical properties make it difficult to find them in concentrated forms that can be extracted for use easily or economically. Rare earth elements have been used in conventional internal combustion vehicles for many years in small quantities. However, electrified vehicles – including hybrids, plug-in hybrids and full electric vehicles – use larger quantities of rare earth elements in magnets in their electric motors and in their more complicated battery systems. As electrified vehicle production increases, the importance of the supply and production of certain rare earth metals is growing in importance to automotive companies. These elements are also used extensively in nonautomotive applications, such as electronic touch screens and mobile phones.

Rare earth elements pose both economic and sustainability challenges. The growing demand for rare earths has called into question future supply and material costs. They are also a concern due to the geographic concentration of supply and environmentally unsustainable mining practices.

Ford's Approach to Rare Earth Elements

Ford has taken a proactive approach to understanding and minimizing the issues associated with rare earth elements in our vehicles. We began by assessing the amount of rare earth elements in our vehicles and where they occur. This is, in fact, a very challenging task because rare earths are used in small quantities, in a large number of components, and by suppliers far upstream in the supply chain. We estimate that approximately 0.44 kg of rare earths are used in a typical conventional sedan, with approximately 80 percent of the rare earth content in magnets. Conventional vehicles primarily use neodymium, which is used in batteries and magnets, and cerium, which is used mainly in catalytic converters. Relatively larger amounts of rare earths – primarily neodymium and dysprosium – are used in full hybrid electric vehicles (HEVs). A typical HEV sedan with a nickel-metal-hydride battery uses approximately 4.5 kg of rare earth metals. HEVs with lithium-ion batteries contain approximately 1 kg of rare earths. We are still evaluating the rare earth content in plug-in hybrid electric and full battery electric vehicles.

Our primary focus in addressing rare earth elements thus far has been to reduce the need for them in our electrified vehicle battery systems. Our third-generation hybrid system significantly reduces the use of rare earths compared to nickel-metal-hydride batteries and other lithium-ion battery systems. We have reduced the use of dysprosium by approximately 50 percent in the electric machine permanent motor magnets used in our hybrid system. This new technology reduces the cost of our hybrid systems by 30 percent, largely by reducing the use of dysprosium, which is the most expensive rare earth element used in electric motor magnets. The new system is also 50 percent lighter and 25 to 30 percent smaller than previous-generation hybrid batteries, contributing to better fuel efficiency. We expect this new hybrid battery technology will save up to 500,000 pounds of rare earth metals annually.

Related links

This Report

- Battery Technologies

Supply Chain Environmental Management

Ford has worked with our suppliers for decades to improve the environmental sustainability of their products and processes – and to gain their support in improving our own sustainability performance. We were the first automaker to require our suppliers to certify their environmental management systems to the globally recognized standard ISO 14001.

Today, we remain committed to providing suppliers with a range of support and assistance based on our expertise and experiences. We regularly engage with our suppliers on sustainability issues, and we have developed initiatives to improve our understanding of environmental impacts and practices in several areas, including greenhouse gas emissions, materials management and logistics.

Supplier Environmental Management

At Ford, our aim is to integrate sustainability throughout our supply chain. All of our "Q1," or preferred, production suppliers' facilities are expected be certified to ISO 14001, the leading global standard for environmental management systems. In addition, ISO 14001 certification is expected of nonproduction supplier facilities if the supplier has a manufacturing site or a nonmanufacturing site with significant environmental impacts that ships products to Ford. In 2006, we attained our goal of having 100 percent of our Q1 production suppliers gain ISO 14001 certification for facilities supplying Ford. We also encourage our suppliers to require their own suppliers to implement environmental management systems.

Our supplier contracts specify environmental requirements covering a range of issues, such as reducing or eliminating materials of concern, using Design for Sustainability principles, increasing the use of sustainable materials and using materials that will improve vehicle interior air quality. We ask suppliers to use recycled materials whenever technically and economically feasible. (For more on our use of recycled materials, see the Sustainable Materials section.) We look for opportunities across our organization to purchase environmentally superior goods and services. For example, we now require that our new personal computer purchases be certified as meeting comprehensive environmental criteria.

Supplier Engagement on Environmental Sustainability

As we do for other important issues such as human rights, we take a three-pronged approach to engaging with suppliers on environmental sustainability issues. We work with individual supplier factories; with key suppliers' corporate management; and in cooperation with other automakers to influence practices across the automotive supply chain.

Supplier Factories

As mentioned above, each Tier 1 manufacturing site providing parts to Ford is required to have ISO 14001 certification. And since 2012, our supplier training programs have included content on our expectations for environmental management (in addition to covering human rights and working conditions issues). We believe this will help build supplier capability to manage these issues effectively. This content expansion aligns our training activity with our updated Code of Human Rights, Basic Working Conditions and Corporate Responsibility and other supplier expectations and guidelines.

Engagement with Suppliers' Corporate Management

As part of our Aligned Business Framework (ABF), ABF suppliers commit to managing and ensuring responsible environmental management in their facilities and in their supply chain. We regularly address current and emerging environmental issues and solutions with ABF suppliers at periodic meetings and in regular communications. During the first quarter of 2012, we held our annual ABF sustainability meeting in southeast Michigan. The 2012 meeting included an update on the Ford supply chain greenhouse gas management initiative, including 2011 results, 2012 plans and peer-to-peer sharing.

Industry Collaboration

We work in industry forums to encourage common approaches to the supply chain challenges of our industry. For example, we have been integrating environmental sustainability and greenhouse gas management issues into our work with the Automotive Industry Action Group (AIAG), and a Ford representative co-chairs the AIAG Greenhouse Gas (GHG) work group. Through the AIAG, we helped to establish common industry guidance and a reporting format for GHG emissions, to be used by global automakers and Tier 1 suppliers. Our initial 2010 survey and results heavily influenced the AIAG guidance and reporting format, as Ford was the only automaker exploring

Related links

External Websites

- ISO 14001

Scope 3 GHG emissions and related risks and opportunities at that time. Ford continues to be a leader within the automotive industry in supplier engagement on GHG emissions management and reporting. For more information on our supplier greenhouse gas program, please see Supplier Greenhouse Gas Emissions.

During 2012, Ford was an active participant in and sponsor of AIAG events. One such event was the Corporate Responsibility Summit: Today, Tomorrow, and Beyond; another was titled Conflict Minerals: An Industry Briefing. These forums brought together representatives from manufacturers, suppliers, governments and service providers across the automotive industry to review current sustainability-related issues, share best practices and review emerging issues. Sessions addressed topics such as corporate responsibility in the automotive industry, supply chain transparency and Conflict Minerals, GHG emissions estimation and reporting, and energy-reduction and efficiency techniques.

Since 2007 we have been a member of the Suppliers Partnership for the Environment, an innovative partnership between automobile original equipment manufacturers, their suppliers and the U.S. Environmental Protection Agency. This partnership works to create new and innovative business-centered approaches to environmental protection and provides a forum for small, midsize and large automotive and vehicle suppliers to work together, learn from each other and share environmental best practices.

Supplier Greenhouse Gas Emissions

We continue to work to better understand the carbon footprint of our supply chain, as well as the risks and opportunities of greenhouse gas (GHG) regulation and climate change for our suppliers and, by extension, for our Company. For our own products and operations, we have a comprehensive commitment and strategy to reduce GHG emissions, as detailed in the Climate Change section of this report, which enhances our competitiveness. We hope to help promote similar competitiveness throughout the automotive supply chain. The findings of our GHG emission surveys of suppliers, described below, suggest that many of our suppliers are already setting their own emissions-reduction goals or are considering doing so. We will continue to work with and encourage our suppliers to set their own energy-efficiency goals or GHG-reduction targets and to track our suppliers' GHG emissions management progress over time.

Ford's Supply Chain GHG Emissions Survey

In 2012, Ford again surveyed our suppliers regarding their GHG emissions. We began these types of surveys with a pilot project in 2010, and significantly expanded it in 2011 to include a wider range of suppliers and commodities. In 2012, we again expanded the program to include more suppliers. Our goal is to better understand the carbon footprint of our supply chain and to use the data to create a broad-based carbon management approach for our supply chain.

In 2012, Ford again surveyed suppliers using two separate questionnaires: the Supply Chain Program questionnaire of the Carbon Disclosure Project (CDP), and the GHG survey of the Automotive Industry Action Group (AIAG). The CDP's questionnaire gathers qualitative and quantitative information about the suppliers' management of climate risks and emissions. Based on suppliers' responses to this questionnaire in both 2011 and 2012, Ford was found to be a leader in all three major report categories: managing relationships with suppliers, developing and implementing a sustainable supply chain strategy, and managing risks and opportunities. The AIAG survey was developed with input from Ford, other original equipment manufacturers (OEMs) and Tier 1 suppliers and service providers. Ford used both questionnaires to capitalize on the strengths of each and to get the most complete picture of both qualitative and quantitative aspects of our suppliers' management of GHG-related issues and emissions. It is our intent to pursue a common industry questionnaire, and we are working toward this goal by sharing process learnings from the use of both forms with the CDP and the AIAG.

In 2012 we surveyed 135 suppliers, compared to 128 in 2011 and 35 in 2010. The 135 surveyed suppliers account for more than 50 percent of our $75 billion in annual purchases. Also in 2012, we again included logistics and information technology suppliers in addition to vehicle parts suppliers. Suppliers were chosen to participate based on a variety of criteria, including the following:

- The GHG intensity of the commodities supplied
- The nature of the business relationship with Ford
- The geographic footprint of the supplier's global operations

We achieved an overall response rate of 92 percent in 2012, again exceeding our internal objectives for this round of voluntary surveys. This response rate also significantly exceeds the average supplier response rate for all companies participating in the CDP's Supply Chain Program, which was 44 percent in 2011 and 39 percent in 2012. We believe that our high response rate is due in part to the active support and training Ford provided to suppliers throughout the process – support that included webinars, guidance documents and one-on-one assistance.

The findings from this year's survey are summarized in the box below. Overall, we continued to find that, for the most part, our suppliers are engaged in the issue of climate change and working to

Related links

This Report

- Climate Change

reduce their GHG emissions. However, there was still wide variability in suppliers' readiness to measure and report on GHG emissions.

Scope 3 Greenhouse Gas Accounting and Reporting

Scope 3 greenhouse gas emissions include all of the upstream and downstream emissions generated by a company's supply chain, from raw material extraction to end-of-life disposal or recycling. Assessing these emissions is extremely challenging, as it includes emissions generated by processes and entities far from Ford's own operations and direct suppliers. The World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) finalized a new Scope 3 (Corporate Value Chain) GHG Emissions Standard in 2011 to help companies with this difficult task. The standard provides a step-by-step methodology for companies to quantify and report their Scope 3 GHG emissions in 15 different categories of emission-generating activities across their entire value chain, upstream and downstream of their own operations. It is intended to be used in conjunction with the GHG Protocol Corporate Accounting and Reporting Standard, which provides companies with a methodology for reporting emissions from their own operations.

Ford road-tested the new Scope 3 protocol in 2010 as part of the WRI/WBCSD's development process. The direct supplier emissions we assess in our current supplier GHG surveys are only one element of the WRI/WBCSD Scope 3 standard. However, we are using elements of the WRI/WBCSD Scope 3 standard to assess our full supply chain emissions, to help us develop a comprehensive approach to supply chain emissions management, and to help our suppliers develop GHG management plans. We are currently working to integrate our supplier GHG survey results into a broader analysis of complete Scope 3 GHG emissions.

Some Key Findings from Our 2012 Supplier GHG Survey

Of the suppliers responding...

A large majority of suppliers have developed management and governance structures to address climate change.

Nearly

90%

have a person or committee that is directly responsible for managing climate change issues within their company.

Nearly

80%

have integrated climate change management into their overall business strategy.

A large majority of suppliers have active greenhouse gas emissions-reduction programs.

More than

65%

have set greenhouse gas emissions-reduction targets (an increase from 2011), and more than 75 percent have active emissions-reduction initiatives. In general, more Ford suppliers responded that they have set intensity-based targets than absolute targets.

A majority of suppliers track and report on their greenhouse gas emissions.

More than

65%

publicly report their greenhouse gas emissions.

Suppliers are working to provide their customers (e.g., Ford) with ways to reduce their overall supply chain GHG emissions.

About

50%

have a strategy for engaging their own supply chain on GHG emissions issues.

More than

60%

are reporting Scope 3 emissions; however, there is still variability in the completeness of the 15 Scope 3 emissions categories they report.

In 2013, we will again survey a slightly expanded group of suppliers and work with them closely to ensure improvements in data quality that will result in a more robust baseline of emissions data. We will also continue reviewing survey results and prioritizing opportunities to partner with select suppliers on energy-efficiency training and management programs when possible.

In 2013, we will again survey a slightly expanded group of suppliers and work with them closely to ensure improvements in data quality that will result in a more robust baseline of emissions data. We will also continue reviewing survey results and prioritizing opportunities to partner with select suppliers on energy-efficiency training and management programs when possible.

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Materials Management

We are working with our suppliers to increase their use of sustainable materials and eliminate undesirable materials. While Ford has already made great strides in using more sustainable materials in our products (as discussed in the Sustainable Materials section), we can expand these efforts by systematically working with our suppliers on these issues. Toward that end, we are developing Commodity Business Plans and other materials purchasing strategies that require the use of sustainable materials. For example, we developed a purchasing strategy for recycled plastic resins and Commodity Business Plans for relevant parts that require the use of post-consumer recycled plastics.

More and more countries are adopting regulations governing the use of materials, chemicals and substances of concern. In 2007, for example, the European Union adopted REACH (Registration, Evaluation, Authorisation and Restriction of CHemical substances). The goal of the REACH legislation is to improve the protection of human health and the environment through better and earlier identification of the intrinsic properties of chemical substances. All manufacturers operating in Europe must provide information on the properties and safe handling of their chemical substances to a central database in Helsinki, Finland. In addition, the legislation calls for the progressive substitution of the most dangerous chemicals, once suitable alternatives have been identified. REACH provisions will be phased in over 11 years.

Turkey and Romania adopted their own versions of REACH in 2009; China adopted its own version in October 2010. In 2011, Japan also adopted REACH-like regulations to manage their chemicals. South Korea will adopt REACH regulations in 2013 and will begin implementation in 2015. In the U.S., the Senate and House both proposed bills in 2010 to overhaul the Toxic Substances Control Act, which was first enacted in 1976. The state of California is in the process of finalizing a Safer Consumer Product (green chemistry) law, scheduled to take effect in 2013, which will require manufacturers of selected products sold in California to identify safer alternatives to a potential range of 1,200 chemicals known to be harmful to public health and the environment. The California law will also phase in a requirement that manufacturers whose products contain listed chemicals of concern must conduct an alternative material assessment and replace the chemicals of concern with safer alternatives. Or, they must explain to state regulators why the chemicals of concern are needed and warn consumers or undertake steps to mitigate the public's exposure to those substances. Ford's Global Materials Management Program will provide an effective and efficient way for Ford to be a leader among auto companies in managing materials and meeting these types of global chemical and environmental regulations.

Governments are also developing and implementing regulations governing the use of Conflict Minerals. In August 2012, for example, the U.S. Security and Exchange Commission (SEC) issued a final ruling for Conflict Minerals regulations. The increasing focus on Conflict Minerals and other critical raw materials issues has injected an additional concern into materials management: Not only is it important to consider the properties of the materials we use, but also their origin and the conditions under which they were extracted and processed. Ford is working with other affected companies and industries to develop processes for collecting Conflict Minerals use and source information. Working with the Automotive Industry Action Group (AIAG), Ford developed the iPCMP (iPoint Conflict Mineral Platform) tool for the auto industry and other industries to collect Conflict Mineral information from suppliers. Ford's existing materials management tools have also been instrumental to our ability to collect and analyze information about Conflict Minerals in our own products and supply chain. (See the Sustainable Raw Materials section for more detail on Ford's approach to Conflict Minerals.)

Materials Management Processes and Tools

Even before REACH-type regulations were adopted, Ford was managing materials across the vehicle lifecycle as part of our Global Materials Management Program. We use a set of processes and tools to assist us in communicating materials- and substance-related requirements to

Related links

This Report
- Sustainable Materials
- Conflict Minerals

External Websites
- REACH

suppliers, and in tracking the materials and substances that they use in the parts they manufacture. These tools include the Global Material Approval Process (GMAP), which handles all materials processed in Ford's plants; Global Material Integration and Reporting (GMIR), a materials tracking tool for our engineers and suppliers; and the International Material Data System (IMDS), a reporting system used by multiple automakers.

The IMDS was developed by seven auto manufacturers (including Ford) in 1997 to handle the tracking, review and reporting of all vehicle components and service parts from all suppliers. Thirty-two companies globally are now official members. The IMDS is a web-based system used internationally by suppliers to report on the substances and materials contained in parts for our vehicles. Ford has cooperated with other automakers to align reporting requirements for restricted substances and to analyze the data provided. This helps us to identify substances and materials of concern and target them for elimination. Ford is also leveraging the IMDS to identify risks associated with Conflict Minerals and other critical raw materials.

Ford vehicle programs use the IMDS to report 100 percent of materials and all the required substance data to fulfill or comply with all governmental regulations and requirements, including end-of-life vehicle directives in the EU, South Korea, China, Taiwan and Japan; REACH in the EU and other countries; and recent Conflict Mineral and other critical raw material reporting initiatives. The IMDS will also provide essential data and information needed to meet the incoming California Safer Consumer Product (green chemistry) law.

To further help our suppliers manage their materials and substance data, Ford developed and launched the GMIR. Through the GMIR Supplier Portal, Ford lists all the parts that require reporting by suppliers; we also list suppliers' reporting and certification status. Thus the system allows every supplier to monitor its reporting status and understand which parts are required to be reported. This two-way communication helps clarify a very complex materials management task and saves time and money for Ford and our suppliers. In 2012, Ford also conducted Conflict Mineral-specific surveys through the GMIR Supplier Portal to identify affected parts suppliers and effectively deal with the very complex Conflict Minerals regulation.

For nondimensional materials (such as paint and adhesive) that are shipped directly to Ford plants, Ford uses GMAP – an electronic tool aimed at simplifying the global materials approval process. The GMAP process allows suppliers to use electronic transactions to submit their Material Safety Data Sheets and composition data. Internally, Ford approvers communicate their decisions of approval or rejection electronically. This new process saves time and ensures better-quality data for complying with government regulations and Ford policies.

In response to the REACH legislation, Ford has developed additional systems to track and manage the use of chemicals. And, Ford has taken a leadership position in implementing REACH. For example, Ford has been a key member of the Global REACH Automotive Task Force and was the first chair of this task force. Ford is also the chair of the AIAG's REACH Advisory Committee.

Ford has made great progress in complying with REACH. For example, we created a REACH manager position and formed a REACH task force to manage relevant activities, including conducting REACH inventory studies and generating all required reports for customers and consumers. In addition, we have worked extensively with our suppliers to ensure their compliance with REACH thus far. Ford's existing Global Materials Management Program has made it much easier for Ford and our suppliers to comply with these new requirements. Using these systems, for example, Ford conducted all of the "substances of very high concern" inventory studies required by REACH and generated all required reports for consumers and governmental agencies. In addition, we have added all of the "substances of very high concern" to our own Restricted Substances Management Standard; this ensures that we will get the necessary reporting from our suppliers and ensures Ford will comply with REACH and similar regulations.

Logistics

ON THIS PAGE

Ford's physical logistics operations provide the safe and efficient transport of parts from our suppliers to our manufacturing plants (our "inbound" freight) and of finished vehicles from the end of our assembly lines to our dealerships (our "outbound" freight). Although logistics accounts for a relatively small percentage of our vehicles' total lifecycle emissions, we are working hard to maximize the efficiency of these operations to reduce their environmental impact. This work is managed by Ford's Material Planning and Logistics organization (MP&L), which is the department responsible for designing and operating our global transportation networks and for engineering high-quality and efficient packaging to protect parts in transit.

Green Logistics

We focus our green logistics efforts on three areas:

1. reducing our freight greenhouse gas (GHG) emissions,
2. reporting on those emissions and
3. improving the environmental footprint of packaging materials used to transport parts and vehicles.

Since freight emissions and fuel usage are so closely tied, our focus on emissions reduction also encourages actions that help us achieve other environmental goals as well, such as improving air quality and reducing traffic flows.

Ford MP&L has an international team to coordinate our green logistics activities. We have subject-matter experts in each of our four operating regions (Europe, North America, Asia Pacific and Africa, and South America), and we have a central green logistics intranet site to assist in standardizing our procedures and communicating best practices.

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Freight GHG Emissions Reporting

Understanding and quantifying our freight carbon dioxide (CO_2) emissions is important for a number of reasons, including:

- Helping us to understand our overall environmental impacts
- Enabling us to prioritize actions to reduce emissions
- Allowing us to calculate the full carbon footprint of our supply chains
- Providing data for the overall lifecycle carbon footprint of our vehicles
- Providing data to respond to customer inquiries

We began to develop CO_2 tracking and reporting metrics in 2006 for our European operations in conjunction with our European lead logistics provider, DHL. Since then, we have expanded our reporting to include transportation networks in North America, South Africa, India and Australia. We have also expanded our reporting to include additional modes of transportation. For example, we now include CO_2 emissions reporting for ocean freight, using methods developed by our transatlantic lead logistics provider, UTi, as well as ground transportation.

We are also now collecting GHG emissions data and reporting internally for all our regions. This data is included in our global performance scorecard, which is regularly reviewed by senior management. In 2012, we began collecting freight emission data in China from our joint venture, Changan Ford, and its trucking providers. Early results from this effort, which includes both inbound and outbound logistics, suggest emissions are being reduced per vehicle shipped.

We continually review the latest international best practices to improve the quality of our reporting. Based on these best practices, we now track non-GHG emissions such as nitrous oxide (N_20) and methane in our overall GHG emissions estimates. We also continually update our data sources. For example, in 2012 we began using newly published CO_2 data from the Clean Carrier Working Group to improve the accuracy of our ocean freight emission calculations.

Tracking transport emissions allows us to study the impacts of different sourcing patterns. Our MP&L function is working closely with Purchasing on value stream mapping projects to help us compare the transportation and manufacturing footprints in different source locations.

Ford has taken an active leading role in supporting the development of reporting processes for automotive freight emissions. In 2011, we were a road-tester of the World Resource Institute and the World Business Council for Sustainable Development's new Greenhouse Gas Protocol Scope 3 reporting standards, which cover freight CO_2 reporting. We have since worked with the Automotive Industry Action Group (AIAG) in North America to encourage others in the industry to adopt these processes and provide relevant training. In Europe, we are part of the UK Department for Transport's Low Carbon Transport Supply Chain Steering Group, which published Guidance on Measuring and Reporting Greenhouse Gas Emissions. We also lead a project for Odette to publish common guidelines for freight CO_2 reporting for the European automotive industry. In Asia, we participated in the inaugural Green Freight China seminar in Beijing, run jointly by Clean Air Asia and the Chinese government.

We believe it is important for our logistics providers to have policies on CO_2 issues. Since 2011, we have involved our major North American and European logistics service providers in our annual Carbon Disclosure Project Supply Chain Survey as part of our effort to encourage them to have strategies to improve the sustainability of their operations.

For more information on our supply chain greenhouse gas initiatives, please see Supplier Greenhouse Gas Emissions.

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Freight Emissions Reduction

The efficient design and operation of our networks is key to improving the environmental footprint of our freight transportation. There is a direct correlation between using greener modes of transport (such as rail and water) and reducing emissions and miles traveled, as well as increasing vehicle utilization.

In general, we contract and manage our own freight networks rather than have freight contracted by our suppliers. This gives us better control and allows us to optimize collections and deliveries across all pick-up points and destinations, minimizing the total amount of transport required.

Our freight emissions-reduction efforts generally focus on reducing the number of vehicle miles traveled to deliver our inbound parts and outbound vehicles, as well as improving route efficiencies and switching to lower-emission transport methods. Some of the specific strategies we use to reduce freight emissions include:

- Using regional distribution centers to coordinate deliveries and reduce the number of vehicles collecting materials from suppliers that are destined for multiple factories
- Using "milk run" routes, where groups of collection points can be visited by a single truck, to minimize the number and length of journeys required
- Developing contracts with our freight providers that encourage them to carry third-party freight on return journeys rather than returning home empty, which not only gives us a cost benefit but reduces overall traffic on the roads
- Maximizing the use of lower-emission transport methods such as rail, river and short sea

transport, to reduce fuel costs, emissions and road congestion. It has been estimated that switching from road to rail can reduce CO_2 emissions by 40 percent.

- Using “SWAP bodies” – standard freight rail containers that can be lifted onto dedicated road trailers to expand our ability to use rail freight where possible on a given journey and road transport as needed
- Improving load density, or the number of finished vehicles carried per conveyance, which lowers the number of conveyances employed and reduces the amount of fuel consumed
- Reducing the emissions of our transportation fleet through the use of alternative fuels and engine technologies, improving vehicle aerodynamics, and training drivers on more fuel-efficient driving practices
- Maximizing trailer loading efficiencies and minimizing packaging so we can carry more cargo with fewer trips

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Packaging

Ford MP&L’s Packaging Engineering department focuses on designing, procuring and optimizing packaging on a part-by-part basis to best suit the components being moved and the transport required.

Packaging has environmental impacts throughout its lifecycle, including materials usage, transportation and waste disposal. Over years of testing, tracking and performance improvement, we have confirmed that the best strategy to eliminate material waste and optimize freight efficiency is to use durable and returnable packaging for all but the longest supply chains.

We have developed a standard range of packaging that not only protects parts and makes them easy to handle at the assembly line, but also allows maximum storage density during transportation, thereby minimizing transport requirements. We review the packaging of production trial parts to assess opportunities to increase packing density prior to the full-volume launch of a product.

One of the benefits of standardizing packaging is that it makes packaging interchangeable between suppliers and programs. In Europe, we have contracts with third-party specialist packaging providers to control the issue, collection and pooling of standard packaging for our suppliers. This pooling greatly reduces transport requirements, as the packaging can be shipped to where it is next required rather than always having to return it to the supplier who last used it.

Currently, our European operations use 90 percent reusable containers, and we are seeking to increase that amount. For example, we are working to develop more direct routing for parts to our St. Petersburg, Russia, plant so that it is viable to use returnable packaging. We are also introducing returnable steel racks for many of our new transatlantic shipments that previously would have been shipped in disposable material.

We are working closely with packaging suppliers to take advantage of new developments. In Spain, for example, we are introducing dedicated designs that include foldable internal packaging that avoids the need for disposable material. It is also lighter and easier to handle than conventional standardized returnable packaging.

The European powertrain packaging team is introducing a novel approach to packaging returns. The empty packaging is broken down into small chips that are then returned in sacks to be remade into new packaging close to the original supplier location. This dramatically reduces the volume of the return shipments, and thereby the transportation costs and emissions.

An example from our Asia Pacific region is their implementation of returnable packaging for hazardous material shipments, such as of air bags from Europe to China. Previously this part had been handled by air shipment, but now it can be shipped by sea, giving considerable savings in emissions.

We are now working globally to share best practices between regions and drive consistency in packaging for future global vehicle programs. Ford’s latest packaging guidelines require that supplier-provided packaging supports corporate sustainability goals by seeking a neutral or positive environmental footprint through zero waste to landfill and use of 100 percent recycled, renewable or recyclable materials.

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The Evolution of Green Logistics

Going forward, we will continue to expand our logistics-related CO_2 reporting and reduction initiatives. Within Ford MP&L, environmental considerations form a key part of our business plan, with metrics in place and with objectives to introduce more rail and short sea routes instead of road freight. We are actively establishing dialogues with our major carriers and service providers to share ideas and methods, with the aim of pushing our green logistics to new levels of collaborative best practice.

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Supplier Diversity Development

Ford remains strongly committed to utilizing and developing supplier companies that are owned by minorities and women. Our Supplier Diversity Development office works with business leaders, trade associations and community-based organizations that represent the interests of diverse businesses.

Our annual goal is to source at least 10 percent of U.S. purchases from minority- and women-owned businesses. In 2012, Ford purchased $5.7 billion in goods and services from approximately 250 minority-owned suppliers and $1.2 billion in goods and services from more than 150 women-owned businesses. Our 2012 results demonstrated the third consecutive year of improvement and exceeded our sourcing goals for both minority- and women-owned suppliers.

Ford launched its Supplier Diversity Development program in 1978 with the goals of supporting minority- and women-owned businesses, creating business opportunities for diverse suppliers to grow into profitable enterprises and further strengthening the Ford supplier network to reflect the Company's workforce and customer base. Ford's minority- and women-owned suppliers are playing an important role in the Company's revitalized and expanding portfolio of high-quality, safe, fuel-efficient products equipped with smart technologies. The following are examples of the success of our supplier diversity program over the last year:

- Advanced Logistics Operations & Manufacturing (ALOM): ALOM, a woman-owned business, managed the delivery of a SYNC® software upgrade for MyFord Touch® to thousands of Ford customers. SYNC with MyFord Touch is Ford's industry-leading connectivity and communications system available on most Ford and Lincoln products.

- Devon Industrial Group: In 2011, Ford awarded Devon Industrial Group, an African-American-owned company, one of Ford's largest construction services contracts spanning a three-year period. In 2012, Devon supported multiple projects, ranging from providing preconstruction services to managing facility renewal projects and decommissioning activities at locations in the U.S. and Canada.

- Detroit Manufacturing Systems (DMS): Ford sourced some vehicle interior production to DMS, a new joint venture between Faurecia and Rush Group Ltd., which was founded in 2012 as part of the Rush Group of companies, one of Ford's largest minority- and women-owned suppliers. DMS provides injection molding, assembly and sequencing of interior trim parts. About 500 people are expected to be employed at the new DMS facility in Detroit.

- Detroit Thermal Systems (DTS): DTS – a joint venture between Valeo and V. Johnson Enterprises, a minority-owned supplier – is producing climate-control systems and components for the automotive industry, including supporting current product supply commitments to Ford. Ultimately, DTS is expected to employ approximately 500 people.

- Flex-N-Gate Corporation: Flex-N-Gate, a minority-owned company located in Urbana, Illinois, is one of the first examples of Ford's Joint Technology Framework (JTF) initiative. JTF is a special program aimed at improving suppliers' technical expertise through access to the Company's intellectual assets and other support. Flex-N-Gate technology is available on the 2013 Ford Fusion and Lincoln MKZ.

- Husco Automotive Technologies: Husco, a Hispanic-owned company based in Waukesha, Wisconsin, was added to Ford's list of preferred, Aligned Business Framework (ABF) suppliers. Husco produces actuators used for variable-camshaft-timing components across various Ford vehicles.

- SET Enterprises: In 2012, SET Enterprises, an African-American- and veteran-owned company, was awarded new blanking business, which is part of the sheet metal production process, for the Ford Transit. SET is a strategic "blanker" for Ford's Chicago Stamping Plant and a preferred "master coiler" in the U.S.

Related links

This Report

» Data: Purchases from Minority- and Women-owned Businesses

In 2012, Ford was honored as Corporation of the Year by the National Minority Supplier Development Council. It is the fourth time in a quarter-century that Ford has received this honor, which recognizes the Company's commitment to minority-, women- and veteran-owned businesses and job creation.

In addition, Ford was named 2012 Corporation of the Year by the Michigan Minority Supplier Development Council (MMSDC). Ford is the first automaker to garner this award for three consecutive years, which underscores the Company's commitment to developing and growing a diverse supply base.

Our record of minority supplier development has earned Ford a seat at the "Billion Dollar Roundtable" (BDR), an exclusive group of 18 companies that purchase a minimum of $1 billion annually from diverse suppliers. The BDR encourages corporate entities to continue growing their supplier diversity programs by increasing commitment and spending levels each year. For the second consecutive year, the U.S. Hispanic Chamber of Commerce named Ford to its Million Dollar Club for our work with Hispanic-owned businesses. In December 2012, Ford was recognized as the Michigan Hispanic Chamber of Commerce's Member of the Year.

Ford was also named as one of America's top corporations for its support of women-owned suppliers. The Women's Business Enterprise Council selected Ford for its 13th annual listing of America's Top Corporations for Women's Business Enterprises. This is the only national award honoring corporations for world-class programs that level the playing field for women's business enterprises to compete for corporate business. Ford became the first automaker to earn top honors for supporting women-owned businesses.

Ford earned these awards for developing and driving innovative best practices across our organization that result in productive business partnerships with minority and women entrepreneurs and valuable products and services for their customers.

We are unwavering in our commitment to incremental year-over-year percentage increases in sourcing from diverse suppliers. We encourage similar actions across our supply chain. In 2012, more than 400 of our largest Tier 1 suppliers purchased $2.1 billion from minority- and women-owned enterprises in support of Ford business.

Data

DATA ON THIS PAGE

A. Working Conditions Training and Assessment Status for Supply Chain

Working Conditions Assessments (as of 12/31/12)	Americas	Asia Pacific and Africa	Europe	Global Total
Average violations per assessment	13.4	11.8	13.3	12.4
Assessments completed to date	257	484	70	811
Follow-up assessments completed to date (third party and/or internal)	371	514	98	983
Working Conditions Training (as of 12/31/12)	**Americas**	**Asia Pacific and Africa**	**Europe**	**Global Total**
Training sessions conducted to date	69	56	17	142
Total number of attending companies	846	903	343	2,092
Total number of trained managers (attendees)	1,478	940	342	2,760

Working Conditions Training (Scope of Impact: Supplier-Submitted Data as of 12/31/12)	Global Total
Training cascade to management, individuals trained	24,965
Training cascade to workforce, individuals trained	430,257
Communication to suppliers, number of sub-tier companies	84,710

Notes to Data

Prior-year 'Assessments completed to date' figures reflect calculation errors in deriving totals. These errors have been corrected for 2012; however, certain figures may be slightly lower than in prior years due to the calculation corrections.

Related Links

This Report:

- Human Rights in the Supply Chain: Ford's Global Working Conditions Program

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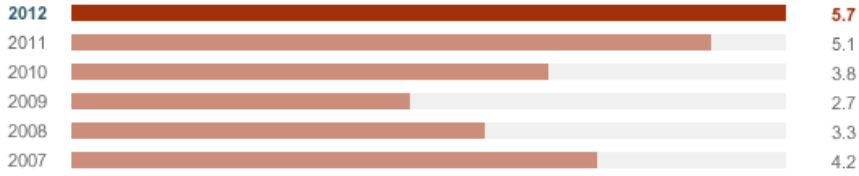
B. Total Purchases from Minority-owned Businesses – United States

$ billion



2007	2008	2009	2010	2011	2012
4.2	3.3	2.7	3.8	5.1	5.7

Notes to Data

From 2003 to 2007, purchases from non-minority, women-owned businesses were included within total purchases from all minority suppliers. Beginning in 2008, we provided separate data for women-owned businesses, which accounted in part for the reduced amount of purchases in 2008.

Analysis

In 2012, Ford purchased $5.7 billion in goods and services from approximately 250 minority-owned suppliers and $1.2 billion in goods and services from more than 150 women-owned businesses. Our 2012 results demonstrated the third consecutive year of improvement and exceeded our sourcing goals for both minority- and women-owned suppliers.

Related Links

This Report:

» Supplier Diversity Development

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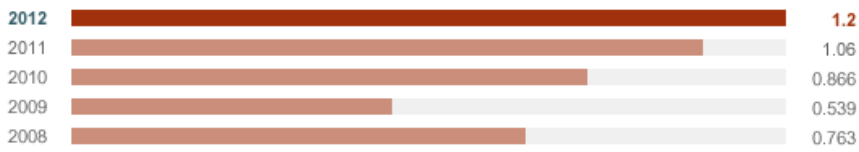
C. Total Purchases from Women-owned Businesses – United States

$ billion



2008	2009	2010	2011	2012
0.763	0.539	0.866	1.06	1.2

Notes to Data

From 2003 to 2007, purchases from non-minority, women-owned businesses were included within total purchases from all minority suppliers. In 2008, we began breaking out separate data for purchases from non-minority, women-owned businesses.

Analysis

In 2012, Ford purchased $5.7 billion in goods and services from approximately 250 minority-owned suppliers and $1.2 billion in goods and services from more than 150 women-owned businesses. Our 2012 results demonstrated the third consecutive year of improvement and exceeded our sourcing goals for both minority- and women-owned suppliers.

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- Supplier Diversity Development

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Patricia Jurewicz

Director
Responsible Sourcing Network

When it comes to supply chain issues, I've had the opportunity to be on different sides, looking at problems from a policy perspective, a corporate perspective and a grassroots advocacy perspective. As a result, I've learned that it's critical to take a multi-stakeholder approach to human rights abuses.

Consumers – especially younger generations – are becoming increasingly aware of global issues and want to know that accountability mechanisms are incorporated into the products they are purchasing, from cell phones to clothing to cars.

Here at the Responsible Sourcing Network, we are especially concerned about the violence and exploitation in the Democratic Republic of the Congo (DRC) that is fueled by revenues from the mining industry. The four "conflict minerals" – tin, tantalum, tungsten and gold – are embedded in today's consumer electronics and other goods, making the related supply chain problems ubiquitous and enormously complex to solve.

This is similar to what automakers faced a few years ago with charcoal from Brazil. Forced labor was found to be occurring far back in the supply chain at the charcoal level, which was then used in steel and eventually appliances, cars and trucks. Ford worked with the Automotive Industry Action Group (AIAG), government agencies and a local NGO to identify suppliers and have them stop purchasing charcoal made using forced labor. For conflict minerals, the auto industry has had an easier time addressing the issue, because the electronics and telecommunications (ICT) industries had already begun initiatives to trace these minerals to their origin.

While the auto industry was a bit slow in joining efforts to push for solutions in the DRC, I do give it credit for figuring out an industry-wide solution that would meet its needs. Through its work in the AIAG, Ford has been a leader in developing a traceability system for the entire industry. Ford is also active in our multi-stakeholder group and legislative efforts.

Now I would like to see the auto industry do more to encourage smelters to go through the auditing and verification process that was established by the ICT industries. The auto industry can have enormous influence on smelters of tin, which is used in many automobile components. Automakers should use their influence to push for accountability. Smelters need to hear that abuses linked to their raw materials will not be tolerated.

I want to emphasize, however, that companies should not simply ban all materials coming out of the DRC. We feel strongly that jobs – good, safe jobs – are needed in the region. We want companies to support efforts that certify mines, so we know that they are free of forced and child labor, and then to use the certified conflict-free minerals in their products.

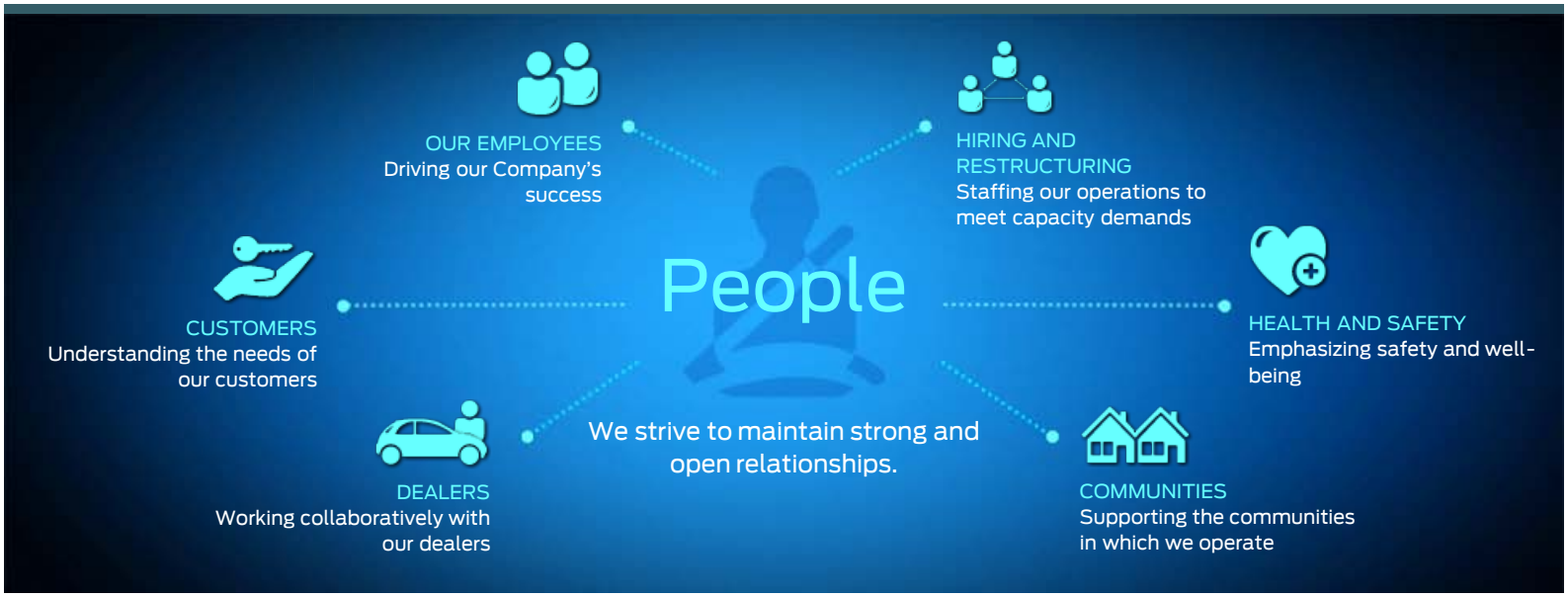
Global companies must have transparent and accountable supply chains. They should be able to know where their raw materials originate and under what conditions they are being mined or processed – as I often say, "all the way down to the dirt." From a diplomatic and policy perspective, the U.S. Securities and Exchange Commission helped to level the playing field when it issued its Conflict Mineral Section 1502 reporting rule. Now all companies are required to disclose where their materials come from.

The U.S. government, regional governments and the United Nations can all do more to encourage

peace and stability in conflict zones like the DRC. Corporations can encourage governments and international institutions to do their part to stabilize the region. When governments, human rights groups, investors and corporations are aligned and working together, they can shift revenues away from the human rights abusers and help end the conflict.

Companies today are looking at human rights issues more holistically and deeper in their supply chains than ever before. Businesses recognize that it's in their best interests to have vibrant, secure, stable and thriving economies where their materials are sourced. That's a big evolution from a few decades ago when companies would say: "We're not running that factory or those operations, so they're not our responsibility."

One company can't do much on its own to impact human rights abuses at the "dirt" level of its supply chain. But by working together with an entire industry, that single company can initiate real change.



Ford Motor Company operations affect a broad range of stakeholders. We believe that maintaining strong and open relationships with our employees, dealers, communities and customers plays an important role in our ability to meet our goals.

Positive relationships with employees and business partners help us to improve efficiencies, cost and quality, and allow us to develop and to innovate. Effective two-way communication with our customers, dealers and other stakeholders helps us to understand and deliver the products that customers want.

This section of our report focuses on the people who interact with our Company in different ways – the employees who work for us; the dealers who sell and lease our vehicles; the individuals who live and work in the broader communities in which we operate; and the customers who purchase our products. (Information on our suppliers can be found in the Supply Chain section. Information on our investors can be found on the Ford investor website.)

Eligible U.S. hourly employees received

$8,300

in average profit-sharing payments for the 2012 performance year.

Adding Jobs

We recently announced plans to hire 2,200 engineers, computer programmers and product development specialists – the largest increase in salaried workers in more than a decade.

Culture Shift

To reach our goal of zero fatalities and serious injuries,

we're focused on changing the culture of our workforce.

Workplace

In 2012 and early 2013, we made progress in a number of areas related to our employees. For example, we:

- Added more than 8,100 combined hourly and salaried jobs in 2012 in the U.S. to meet the growing demand for fuel-efficient, high-tech vehicles.
- Negotiated new collective bargaining agreements with labor unions in 11 countries globally.
- Made profit-sharing payments to approximately 46,000 eligible U.S. hourly employees and paid salaried employee bonuses for the 2012 performance period.
- Continued to win recognition for our diversity efforts.
- Marked the second year since 1918 without an employee work-related fatality.

To learn about our commitments in some of these areas, see our Goals and Commitments table.

Diversity and Inclusion Awards

Read about how we have been recognized for the value we place on our employees and our ability to work inclusively.

Employees

Here at Ford, our employees are the driving force behind our success. Our recent financial recovery can be attributed in large part to the dedication and strong performance of our workforce, which pulled together under our ONE Ford plan to restructure and return our North American operations to profitability. The same plan is currently guiding our restructuring efforts in Europe, where we made the difficult decision to close two U.K. facilities in 2013 and end production at a major assembly plant in Genk, Belgium, at the end of 2014.

Today, we're hiring again in North America and in other parts of the world. In the U.S., we have filled more than 9,000 of the 12,000 new hourly jobs we forecasted to deliver by 2015 during 2011 contract discussions with the UAW[1]. In 2012 we added more than 8,100 combined hourly and salaried jobs in the U.S., and in early 2013 we announced plans to hire 2,200 more salaried workers. In Asia Pacific and Africa, we added 2,470 hourly and salaried jobs in 2012 to help keep pace with product demand in that region.

As the Company continues to strengthen and grow in many regions, our employees are able to share in our success. In early 2013, for example, eligible U.S. hourly employees received average profit-sharing payments of $8,300 for the 2012 performance year. Salaried employees also received bonuses under the Annual Incentive Compensation Plan.

Our Company has a compelling vision of building cars and trucks that deliver the very best in quality, safety, fuel efficiency and design. And our employees are helping us do just that. A skilled and motivated workforce is the essence of Ford – today and in the future. We're focused on developing a diverse, skilled and motivated team, while providing a safe, respectful and inclusive environment.

Our goal is to attract, develop, engage and retain the talent we need to Go Further. To grow our pipeline of talent, particularly in the areas of science, technology, engineering and math (STEM), we're reaching out to diverse communities through our Partnership for Advanced Studies, professional organizations such as the Society for Women Engineers, and various scholarship programs.

Ensuring a great place to work requires an understanding of employee satisfaction and what employees value about being part of Ford Motor Company. We engage employees as individuals and foster leadership development in a diverse environment where people feel valued and included. A safe workplace and a healthy workforce are also critical elements of our strategy.

In the U.S., automakers are competing for talent, and we have stepped up our efforts to find the best people. We are using social media more than ever in our recruiting efforts and hosting webinars and virtual career fairs to expand our reach. For more on our hiring, read the perspective from our executive director of human resources for the Americas.

As of December 2012, we employed approximately 171,000 individuals globally. Ninety-five percent of the hourly employees in our Automotive operations are covered by collective bargaining agreements and are represented by 39 different unions globally. In the United States, approximately 99 percent of these unionized hourly employees in our Automotive sector are represented by the UAW. Approximately 2 percent of our U.S. salaried employees are represented by unions. Most hourly employees and many non-management salaried employees of our subsidiaries outside the U.S. are also represented by unions. These unions are key partners with Ford in providing a safe, productive and respectful workplace. For more information about our collective bargaining agreements, please refer to our Form 10-K (pdf, 6.56Mb).

Diversity and Inclusion Awards

Read about how we have been recognized for the value we place on our employees and our ability to work inclusively.

Added
2,470
hourly and salaried jobs in Asia Pacific and Africa in 2012

Related links

This Report

- Current Financial Health
- Focus on Europe

1. UAW originally stood for United Auto Workers; the full name today is the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America.

Supporting ONE Ford

While we have many types of employees and work arrangements, all of our employees together create a skilled and motivated team aligned around our overall ONE Ford objectives. Our ONE Ford plan aligns our efforts toward a common definition of success: having ONE Team, ONE Plan and ONE Goal for an exciting, viable Ford that delivers profitable growth for all. ONE Ford also provides consistent goals and expectations for employees – whether they work in the U.S., China or one of our other global locations – with a clear focus on the skills and behaviors we must demonstrate to accomplish our goals. All members of our global team are held accountable for incorporating ONE Ford into their daily work.

We have integrated ONE Ford into our people processes to support employee development and drive accountability for moving the Company forward while demonstrating expected behaviors that are fundamental to the success of ONE Ford:

- F: Foster Functional and Technical Excellence
- O: Own Working Together
- R: Role Model Ford Values
- D: Deliver Results

Over the last few years, implementing the ONE Ford plan has meant that we have focused our strategies on four key goals: creating a great place to work; developing a capable and effective workforce; aligning our organizational structure with our global business footprint; and providing the "people"- related processes to support our workforce. In early 2012, we extended the ONE Ford approach with our new Go Further campaign, which embodies our commitment to our customers. ONE Ford is our roadmap and plan, while Go Further is the promise behind our efforts.

Related links

This Report

- "Going Further"

Employee Satisfaction

Each year, we ask our salaried workforce to participate in the Pulse survey to gain insight into employees' overall satisfaction with the Company, their jobs, diversity and other aspects of their workplace experience. We encourage our employees to provide candid feedback, and we benchmark results and participation externally. Results of the survey are incorporated into our business planning review processes. Improving Pulse scores is an annual performance objective for many of our senior managers.

In 2012, 75 percent of our salaried employees across the globe participated in the survey, which included a total of 55 multiple-choice questions across 12 dimensions of workplace life, including training and development, management's commitment to diversity, and workplace safety practices. The results of the 2012 survey were highly favorable, with nine of the dimensions improved over 2011 and two unchanged. One dimension, which measured employee awareness and understanding of the Company's Go Further brand promise, was new for the 2012 survey.

The Employee Satisfaction Index (ESI) section of the survey, which asks employees questions such as whether they feel valued at work or whether they believe they are rewarded for their job performance, increased 2 percentage points from 2011. Considered the bellwether of employee satisfaction, Ford's ESI score is 5 percentage points above the Company's benchmark, which is comprised of a group of Fortune 500 companies.

Within the ESI, the highest score – 13 percent above the external benchmark – was for the question that asked employees whether they feel satisfied with the information they receive from management on what's going on with the Company.

This year's survey also showed improvement – an increase of 4 percentage points – over last year in the area that measures management's commitment to diversity. Two of the five questions that improved most were from the diversity category.

Not all questions saw improved results, however. Questions that resulted in lower scores this year included:

- "My workload does not interfere with my ability to do a quality job" – down 2 percentage points from the prior year to 64 percent.
- "My work group planned actions based on the results of the last Pulse survey" – down 1 percentage point to 66 percent.

In 2012, we surveyed hourly employees on health and safety, along with other topics, for the first time. The objective was to collect feedback from our hourly workforce to establish baseline metrics, measure the effectiveness of the ONE Ford strategy and its impact on employee satisfaction, and guide continuous improvement efforts in our manufacturing operations. Plant locations in nine countries participated, generating feedback from more than 22,000 employees. The survey included a minimum of 20 questions that were consistent with questions asked in the salaried Pulse survey. Regions could add more questions as needed. The most favorable responses were around Company mindset and quality work practices. Results were slightly below the salaried workforce scores, but within 10 percentage points. Improvement efforts will focus on the effective implementation of our overall Ford Production System, which encompasses safety, quality, delivery, cost, people, maintenance and environment. Read more in the Health and Safety section of this report.

As part of our efforts to increase satisfaction, we are constantly improving our strategies for fostering open dialogue with employees. Read more in the Employee Engagement section.

In addition, each year following the survey, we send managers and supervisors throughout Ford a report that shows how their specific teams responded to the questions on the survey. The goal is for the managers and supervisors to then meet with their work groups, discuss the results, and plan changes to improve the way their teams function.

Related links

This Report

- Data: Employee Satisfaction, Pulse Survey

For more information on the Pulse survey, see the Data section of this report.

Employee Engagement

Keeping our employees engaged with our Company overall, and encouraging them to stay connected with their peers and their communities, is an essential component of our people strategy here at Ford. We believe it's important to communicate with our workforce in ways that are open and transparent. We do so through a variety of interactive forums, from "town hall" meetings to intranet surveys and chats, from joint labor-management committees to diversity councils. We also use several publications, such as plant newsletters and our @Ford magazine, to communicate the latest information on the state of the Company and our products. In recent years, we have also increased our use of social media applications, such as Facebook, to inform and connect with our employees.

For our hourly employees, we work closely with their unions to develop agreements and governance plans over changes in our operations (e.g., reorganizations, plant shutdowns, employee transfers and reductions). In addition, joint labor/management committees are set up at each plant to give employees an opportunity to influence working conditions and practices.

For our salaried employees, most of whom are not covered by union agreements, we have a strong Code of Conduct and comprehensive Policy Letters and Directives covering topics, including diversity, relevant to our employees. We also practice regular two-way communication with all employees through webcasts, executive Q&A sessions between senior leadership and staff who wouldn't typically have face-to-face meetings with top-level management, quarterly "town hall" meetings, manager-to-employee business cascades, surveys and informal communications. We survey our salaried employees twice annually using the Global Pulse and Engagement survey.

Our employees are also our customers, and they can be strong ambassadors for our products. In Michigan, information sessions called "Go Further Employee Events" are held to give employees the opportunity to view, learn about and test drive yet-to-be-released vehicles. This lets the employees see how our products are meeting the needs of customers, while providing factual information about the vehicles. Our employees can then promote the vehicles to their friends and families, which, in turn, can increase sales and help to strengthen the Ford brand.

Our Employee Resource Groups also conduct a number of events and initiatives each year to engage our employees, provide product insights and reach out to our communities. (See the Promoting a Diverse and Inclusive Workforce section for more on these groups.)

We also believe it's important to engage our people within the communities in which we operate. Each year, we offer ways for thousands of our employees and retirees to participate in volunteer programs. We see these programs as not only critical to helping those in need, but pivotal to inspiring and energizing our employees around volunteerism and community service. Through these community initiatives, we support teamwork and build a sense of shared purpose and commitment. For more information, see the Community section.

In Thailand, Employees Put All-New Ford Focus to the Test

To build awareness of and excitement about the launch of the all-new Ford Focus in Thailand, 200 Ford employees had a chance to test drive the vehicle in the scenic town of Khao Yai. The full-day immersion included classroom sessions and specially tailored test-drive stations designed to highlight specific Focus features.

In the first station, participants were encouraged to test drive four cars on a slalom track. The second station – the universal favorite – was all about safety. Driving on a curved test track, the Focus' electronic stability features helped drivers negotiate a sharp bend with confidence, while the anti-lock brake system provided control and directional stability. The third station allowed employees to try out smart driver assistance technologies, including Active Park Assist, Blind Spot Information System and the hands-free Ford SYNC® system.

Related links

This Report

- Communities
- Data: Employee Satisfaction, Pulse Survey

“It’s not often we get to test drive different vehicles within one day,” said Jirawat Jeeradeepalung, a Ford human resources manager who helped to organize the event. “The overall feedback from this event was truly satisfying.”

Leadership Development

Employee development is crucial to delivering our vision of building great products that contribute to a better world. The most important thing we can do is stay focused on creating a skilled and motivated workforce. We do that by continuing to invest in our employees, strengthening their technical and leadership skills and recognizing them for delivering results that cultivate success. As we continue to grow our Company, we must also continue to grow the capabilities of our people.

We have been standardizing, simplifying and integrating talent-management processes; implementing global competency frameworks; and enhancing leadership development programs for experienced managers. And, we believe we have fostered a flexible and safe working environment in which people are respected and valued for the work that they do.

All employees at Ford are encouraged to invest in their own professional development by developing an Individual Development Plan, or IDP, to help them meet current and future goals while maximizing performance in their current assignments. Using the IDP, employees work with their managers to help them identify strengths and areas for improvement, and then create customized plans for their individual developmental needs.

We provide a comprehensive range of learning and development resources that align with ONE Ford and the key competencies required to support each functional area. These resources include virtual, web-based and classroom training, experiential learning, special projects, task forces, mentoring and coaching, social networking, and team “lunch and learn” and other similar workshops. All of these seek to foster functional and technical excellence, encourage teamwork, promote Ford values and enhance our ability to deliver results.

Similar to our vehicle development strategy, our learning and development strategy has been to leverage our global scale and standardize as much as possible. We are creating internal “colleges” that provide education and training in areas ranging from finance and information technology to product development and marketing. We also offer global leadership development programs including the following: the Global Leadership Summit, which is aimed at executives and general managers; the Global Executive Leadership Program, which is geared toward directors and senior managers; and the Experienced Leader Program, aimed at middle management. We also offer the Salaried Supervisor Institute/Program (SSI) for new or experienced leaders who want to enhance their ONE Ford skills. ONE Ford is designed to build our employees’ individual capability as well as our organization’s capability to drive the business forward.

Developing Future Talent

We’re also focused on ways to develop our workforce of the future. Looking ahead, we will need to fill an increasing number of positions with highly skilled individuals who have backgrounds in specialized and technical fields of study. Yet, we recognize an impending shortage of candidates with these skills. As such, we have developed a STEM (Science, Technology, Engineering and Mathematics) strategy, championed by our CEO and executive leadership team, which leverages our current programs to develop skills for the future. Developing a future pool of talent is essential not only to the success of Ford Motor Company, but also to the success of our dealers, our suppliers and the overall automotive industry.

Through partnerships with the Ford Fund and the community, we have actively supported programs that build these skills. We are also developing our own programs targeted at students along the education pipeline. Examples of Ford’s STEM outreach include:

- Ford Partnership for Advance Studies (PAS), Next Generation Learning: The Ford PAS program mobilizes educators, employers and community leaders to create a new generation of young people who will graduate from high school to be both college- and career-ready. Learn more in the Community section.
- Ford’s High School Science and Technology Program (HSSTP): The HSSTP is designed to

raise awareness among high school students about technical careers and demonstrate the importance of science and math in industry.

Ford Leadership

In late 2012, we announced that Alan Mulally will continue to serve as Ford president and CEO through at least 2014. At the same time, we named Mark Fields as the Company's new chief operating officer. Mulally will continue leading the long-term strategic development of the ONE Ford plan and its continuous improvement. Fields, who continues to report to Mulally, is now responsible for all business operations.

Easing Toward Retirement

In 2011, we piloted the Phased Retirement Program (PRP), a voluntary program available for retirement-eligible employees that allows them to work half-time at full pay for a period of six months immediately prior to exiting the Company. The program is beneficial to employees, giving them the opportunity to phase into retirement after many years in the workforce. The PRP also benefits the Company by enabling effective knowledge transfer from PRP participants to their successors. Due to the success of the pilot, we continued to offer the program in various U.S. business units of the Company in 2012 and again in 2013.

Diversity and Inclusion

Henry Ford saw the wisdom of creating a diverse workforce, long before such a concept was embraced by other business leaders. A century later, we continue to attract a highly skilled and committed workforce that reflects diversity across culture, ethnicity, race, perspective, age, religion, physical ability and sexual orientation.

The business case for diversity is strong. Companies with global and diverse workforces have better chances of succeeding with a diverse, international customer base.

Throughout the history of Ford Motor Company, inclusion has been as much a part of the Company's success as the products our diverse employee base has created. Ford is a leader in diversity and inclusion, and both remain key business strategies. Our diversity makes us a better and stronger Company, by bringing in fresh ideas, perspectives, experiences and life responsibilities, and by fostering a truly collaborative workplace.

We have received hundreds of diversity awards in recent years from publications and organizations recognizing the value the Company places on building a diverse and inclusive culture. Our employees also recognize Ford's efforts in this area. According to our 2012 Pulse survey, 86 percent of our workers globally believe Ford's management is committed to diversity. This is up from 82 percent in 2011 and is one of the highest scores on Pulse survey topics.

Detailed information on our U.S. workforce by minority groups and gender can be found in our Engagement and Community data.

Read more about Ford's history of diversity and inclusion.

> Ford is a global business. We have a lot of talented people working together, and our performance will be determined by the breadth and the depth of our inclusion of all of our people. The more we embrace our differences within Ford – diversity of thought, experience, perspective, race, gender, faith and more – the better we can deliver what the customers want and the more successful Ford will be."
>
> Alan R. Mulally, President and Chief Executive Officer

Related links

This Report

- Diversity and Inclusion Awards
- Data: U.S. Employment of Minority-group Personnel and Women at Year-end

Corporate.ford.com

- Diversity

Promoting a Diverse and Inclusive Workforce

Our definition of diversity includes all those things that make each of us unique individuals. Our backgrounds, opinions, experiences, perspectives and life situations are just some of the distinctions we bring to the global workplace. At Ford, diversity is:

- Respect – for our employees, customers, communities, dealers, suppliers and retirees
- Appreciation – of our differences
- Inclusion – of every person and every perspective
- Integrity – to do the right thing, always

We integrate our diversity strategy into our business through the following strategic areas of focus:

- Leading the way – The executive leadership team, led by our CEO, champions diversity and inclusion at Ford. To enable us to work together effectively across the global enterprise, the leadership team ensures that diverse perspectives are integrated into business objectives and key human resources processes.

- Supporting our diverse workforce and strengthening our external partnerships – Ford currently supports a number of employee networks, including 11 Employee Resource Groups (ERGs) that help to foster diversity and inclusion. These include groups for employees of African ancestry; Hispanic, Asian -Indian, Chinese and Middle Eastern employees; veteran and active military employees; employees dealing with disabilities; female professionals; working parents; gay, lesbian, bisexual and transgender employees; and the Ford Interfaith Network, which brings together separate affinity groups for Christians, Jews, Muslims, Hindus and other faiths. A number of the groups have chapters in our business units throughout the world. In addition to supporting our employees, these ERGs organize community volunteer activities and provide us with an opportunity to better understand the consumer needs and wants of individuals of diverse backgrounds. Some of their recent initiatives include mentoring students from local schools, assisting the homeless and sending care packages to our military overseas. Our Ford Hispanic Network, for example, partnered with Ford Credit to teach financial literacy workshops in local high schools and community organizations. Our Veterans Network works with the Wounded Warrior program.

- Fostering a respectful and inclusive environment – Ford's commitment to inclusion is incorporated into ONE Ford expected behaviors and communicated in ongoing forums such as "town hall" meetings and training. As a part of these efforts, we have held a Diversity & Inclusion Summit each year since 1999 to recognize individuals and teams who have exhibited the inclusive ONE Ford behaviors critical to our success as a company. The participation of our employees from around the world in this Summit continues to grow. In 2012, our CEO and other senior executives honored 33 teams and individuals in a global ceremony, with participation from Brazil, China, Germany, India, Mexico, the Philippines, South Africa, Spain, the U.K. and the U.S.

- Supporting work/life flexibility – We encourage employees and managers to discuss both business and personal goals. Work/life flexibility creates a competitive advantage and addresses the needs of our global, multi-generational workforce. Ford Digital Worker is a global information technology program that supports ONE Ford and enhances employees' ability to work remotely. Ford's efforts to provide employees with tools such as WebEx, Instant Messenger and enhanced mobile access capability have increased employee productivity and satisfaction. Flexibility solutions vary depending upon locations, teams and employees. Examples include the following:
  - In the U.S., a significant number of the salaried workforce occasionally uses "flextime," which allows employees to vary their daily work times. We have approximately 3,000 employees on formal work programs that involve telecommuting, part-time work and compressed work arrangements. Many more employees develop informal arrangements with their supervisors for occasional work-from-home opportunities. Our Flexible Work Network provides "flex mentors" to help advise employees on effective ways to work

differently.

- In Europe, we offer a variety of flexible working patterns. In the U.K. and Germany, for example, we support part-time working and telecommuting and offer child-care facilities for the children of our employees.

- In Canada, our many programs include “Summer Hours,” which give employees an opportunity to work with their managers to identify a compressed work-week schedule during the summer months.

- Several countries within Ford South America have established programs aiming to leverage work/life flexibility, including flexible work locations.

Other employee resources include employee assistance programs, “mothers’ rooms” for nursing mothers in some of our global locations, meditation rooms and wellness initiatives.

Ford has longstanding policies clearly stating that harassment in the work environment because of race, religion, color, age, sex, national origin, disability, sexual orientation, gender identity or veteran status is a violation of the spirit and intent of the Company’s nondiscrimination policies, and Ford has a commitment to zero tolerance of this type of behavior. These policies apply to all individuals, including part-time, supplemental and agency employees. Ford understands its responsibility to foster a respectful work environment free of harassment or discrimination at all levels of the organization. We take this responsibility seriously and thoroughly investigate any claim of violation(s).

Our collective bargaining agreements address this issue and allow union-represented employees the right to use the grievance process. Ford’s Code of Human Rights, Basic Working Conditions and Corporate Responsibility (Policy Letter #24) directly addresses the issue of respect and inclusion, as do the following additional global Policies and Directives:

- Local Equal Employment Opportunity Policy Statement
- Policy Letter No. 2: “Relationships with Employees”
- Policy Letter No. 6: “Equal Opportunity and Affirmative Action”
- Directive B-110: “Anti-Harassment/Zero Tolerance”

Across the globe, a number of internal avenues are available to employees who wish to make and/or document a complaint. These processes are communicated to all employees through the Open Door policy and through various policies posted online. These avenues include:

- Reporting the incident or concern to a supervisor or any other member of management
- Filing a complaint with the local human resources office
- Contacting the human resources representative at the division office or personnel relations at World Headquarters in Dearborn, Michigan
- Calling a hotline, through which concerns may be raised
- In the U.S., using peer review, which is an internal alternative dispute resolution process

Also in the U.S., the Company has longstanding, strong relationships with the U.S. Equal Employment Opportunity Commission and state civil rights agencies. We stand committed to cooperating with those civil rights agencies that provide resources to the people of our diverse communities in an effort to eliminate discrimination and harassment in the workplace.

Within the U.K. we have a highly robust, comprehensive Dignity at Work policy that sets out the expected standards of behavior and what steps can be taken if there are infringements on the high standards. All employees are trained on the content of the policy, with further training for supervisors and managers who investigate allegations of harassment and/or bullying.

Diversity and Inclusion Awards

We have received hundreds of awards in the last few years from publications and organizations that recognize the value we place on our employees and our ability to work inclusively. For example, we have been on *DiversityInc's* "Top Companies for Diversity" list 11 times. Specific diversity awards given in 2012/13 include the following:

- America's Top Companies for Women's Business Enterprises – Women's Business Enterprise National Council
- America's Top Organizations for Multicultural Business Opportunities – DiversityBusiness.com
- Best Places to Work – Human Rights Campaign
- Corporate Equality Index, 100% Rating – Human Rights Campaign
- Company of the Year for Minority Supplier Development – On Wheels
- Corporation of the Year – Michigan Minority Supplier Development Council
- Corporation of the Year – National Minority Supplier Development Council
- Corporation of the Year – Women's Business Enterprise National Council
- Diversity Elite 60 – *Hispanic Business*
- 40 Best Companies for Diversity – *Black Enterprise*
- Top Five Best Companies to Work For in Argentina – *Apertura Magazine*
- Top 25 Supplier Diversity Companies – *Hispanic Business*
- Top 50 Employers – *Equal Opportunity Magazine*
- Top 50 Employers – *Minority Engineer*
- Hall of Heroes – MBA Women International
- Top 100 Employers – Latino 100
- World's Most Attractive Employers – Universum

For a listing of corporate responsibility and governance awards for our Company, see the Awards and Recognitions section.

Workplace Health and Safety

Ford Motor Company Vision for Health and Safety

Our vision is to achieve zero fatalities and no serious injuries, and to protect and continually improve the health of our workforce.

At Ford, we aspire to create a safe workplace, with zero fatalities and no serious injuries. We aim to be a leader in safety – not just within manufacturing, but within all industries around the globe. We have made strong and steady progress, with overall injury rates dropping to a tenth of the levels of 1999, when we revamped our formal safety program. But we're not yet where we want to be, and we know we have more work to do.

Our top executives and managers remain committed to ensuring that our people stay safe and healthy while working as part of our ONE Ford team. In recent years, management compensation has been more heavily weighted to drive safety culture improvements. Our director of occupational health and safety, for example, provides comments on our Company's safety performance to the Board of Directors; those comments are used as part of the Board's annual review of CEO Alan Mulally.

We have integrated safety into all aspects of our business. Our Safety Operating System (SOS), which is part of our overall manufacturing strategy, provides for the health and safety of our employees through empowered teams of people working together. Safety is one of the core components of the Ford Production System, along with quality, delivery, cost, people, maintenance and environment. Improving our safety record is not only good for our employees; it's good for our business.

We're especially focused on changing the workforce culture within our plant operations, so the importance of safety is ingrained in all of our people, no matter their role. We're leveraging the ONE Ford philosophy of working together, caring for each other and creating a supportive environment. Read more about our work to change the workforce culture, including joint UAW initiatives.

The "health" part of health and safety remains a key driver for Ford. We recognize the impact that health issues like heart disease, diabetes and obesity can have on the well-being of our employees, as well as on the cost of providing health care to our workforce in the U.S. By helping employees to prevent serious diseases and effectively manage chronic conditions, we can have a positive impact on our employees' quality of life and our bottom line.

For more about our workplace safety systems, see the corresponding pages on Health and Safety Governance; Safety Culture and Accountability; Safe Conditions; Relationship Management; Health as a Strategic Advantage; and Our 2012 Safety Performance.

> Our most valuable asset is our people. Nothing is more important than their safety and well-being. Our coworkers and families rely on this commitment. There can be no compromise."
>
> Bill Ford and Alan Mulally

Related links

This Report

- Data: Workplace Safety

Health and Safety Governance

We have comprehensive governance systems for health and safety management. Our overarching Occupational Health and Safety (OHS) policy is established through a corporate Policy Letter and Directives. In addition, global OHS standards cover all health and safety topics, including safety, ergonomics, occupational hygiene, toxicology and clinical operations.

Often the most efficient and cost-effective way to reduce safety and ergonomic risks in the manufacturing process is to engineer them out upfront. Our global manufacturing engineering teams use the latest technology of “virtual manufacturing” to predict and eliminate risks during the design stage. We also have a global process to ensure that all materials used in our factories are safe for our people.

We review safety regularly at the plant level and in regional OHS committees. Our President and CEO and our senior operating team review safety performance as part of their regular business plan reviews, as does the global Manufacturing Operating Committee.

Within manufacturing we use an assessment process that is aligned with the Global Ford Production System. The process includes an integrated assessment that evaluates safety, quality, delivery, cost, people, maintenance and environmental operating systems, while recognizing their interdependencies.

Nonmanufacturing sites conduct yearly self-assessments of their OHS risks and performance. All sites must respond to a series of safety questions that have been integrated into the Ford General Auditor’s Office basic audit review program.

Ford faces workplace health and safety challenges similar to those of many multinational manufacturing companies. These challenges include establishing and reinforcing high, common expectations for the safety of our employees worldwide. Most of our manufacturing facilities have joint union/management safety committees that guide the development and implementation of safety programs in their operations. At least 75 percent of the Company’s workforce globally are covered by the health and safety committees. This includes the entire manufacturing workforce and some staff organizations.

Safety Culture and Accountability

We've been able to make some significant improvements in the safety of our operations over the last decade, with a substantial decline in the rates of injuries. We have improved our management systems, engineered out known safety risks wherever possible, and augmented our training. But in order to get to the next level – and our goal of zero fatalities and serious injuries – we need to change the culture of our workforce. Today, the major safety challenge at Ford is improving employee adherence to existing safety procedures and improving employee awareness to recognize and eliminate hazards.

Changing Our Safety Culture

To reach the hearts and minds of our people, we've been taking a more emotional approach to safety, and we believe it's been making an impact. On December 26, 2009, one of our employees died in a tragic accident at Ford's Kentucky Truck Plant in Louisville. Ronald Cassady's death shattered the tight-knit plant and profoundly impacted our Company.

The following year, we produced a documentary about Cassady – a 16-year Ford veteran who died of injuries after a 220-pound steel beam fell on top of him. The video, which was translated into multiple languages for required viewing by tradespeople at all of our manufacturing facilities, focuses on Cassady's friends, co-workers and family as they share the painful details of that horrific December day.

The video made a big impression on our people. And in the years since, we have been producing more videos that tell real-life stories of employees who were injured – or who had a close call – on the job. Some of the "Faces of Safety" videos include images of a worker's family to remind our people that when they ignore the rules of safety on the job, they're not just putting themselves at risk – they're putting the futures of their loved ones at risk, too.

Our target audience for the videos is skilled tradespeople – the employee category that is at highest risk for serious injuries. These are the individuals who troubleshoot equipment, make repairs and retool the manufacturing lines during plant shutdown. Eight of our last 10 fatalities – including Ron Cassady – occurred during maintenance activities. Approximately 20 percent of our employees are in the skilled trades. Yet they represent 80 percent of our fatalities.

Many of these serious injuries occur during plant shutdowns or other intense periods of major change. In the U.S., shutdowns typically take place in December and July of each year as we prepare our facilities for new vehicle models. In 2011 and 2012, we had three consecutive shutdown periods without a serious injury to a Ford employee – something that has never happened before.

As part of our cultural shift, we're also now working more closely with the UAW and thanking our plant work teams for safety successes. "Our congratulations go out to everyone for a job well done," wrote Jimmy Settles, vice president and director for the UAW, and Jim Tetreault, Ford's vice president of North American manufacturing, in a January 2013 letter to all U.S. plants. "Our continued success in periods of downtime must find its way into our everyday work. Returning to our families safe and healthy should be a value and expectation for every worker."

In 2013, we intend to survey our employees to find out what types of safety messages they find useful. For example, several years ago, Mike Rowe, known for his work in our TV commercials, was our spokesman for health and safety. He made a video and we used his likeness to display safety messages within the plants. We hope to determine whether efforts such as that, and our safety videos, are having the desired effect, so that we know where to focus in the future.

Reinforcing Accountability

We establish accountability for health and safety performance through our business planning, policy

deployment and scorecard processes, which set targets and assign responsibility for meeting those targets. Business operation and plant managers are responsible for health and safety in the operations they manage, and their performance in this area is a factor in their incentive compensation. In addition, safety performance is included in the scorecards of salaried employees as appropriate, including those of the CEO and business unit leaders.

As our safety programs have strengthened, we have looked for ways to increase the accountability of all workers so they not only follow the rules and procedures for themselves, but they also look out for their coworkers. Our safety data demonstrates to us that the majority of injuries are the result of individuals failing to follow established safety protocols. We have increased training programs to ensure that workers understand what is required of them and to further build accountability into individual safety performance.

Safety Surveys

In 2012, we began a pilot program to survey manufacturing employees in four locations and get their feedback on issues relating to safety. Sponsored and supported by a joint Ford/UAW initiative, the 15-minute survey from the National Safety Council (NSC) asks employees 50 questions related to their perceptions of safety at our Company. This is the first time we've been able to survey manufacturing employees. (Our Pulse survey, described below and in Employee Satisfaction, primarily surveys salaried employees.)

We plan to expand the survey to all U.S. manufacturing locations in 2013 and use the findings of all of the surveys to improve our safety efforts and culture. Individual plants will develop action plans based on the results of the survey.

The NSC survey, which is used by a variety of global manufacturing companies, focuses on six safety program categories, including management participation, safety support activities and safety support climate. The results of this paper-and-pencil survey also allow us to benchmark ourselves – and individual plants – against the NSC's database of all surveys, which contains more than 2 million responses from 550 organizations.

We also have several safety questions in the general employee Pulse survey. The results of this survey, combined with audits and routine gathering and sharing of performance data, provide a comprehensive picture of health and safety performance trends, as well as early warning of conditions that could lead to a decline in performance. The results of the 2012 Pulse survey show that the vast majority of Ford salaried employees – 87 percent, compared to 86 percent in 2011 – are satisfied with the Company's safety culture.

Safe Conditions

Many factors contribute to safe working conditions, including the design and maintenance of the facility and its equipment, effective work processes, and appropriate safeguards for potentially hazardous conditions. We use a variety of processes and programs to assess and manage risks. When potential hazards cannot be addressed through engineering, we use personal protective equipment and procedural controls to help prevent accidents and exposures.

We use internal and external benchmarking to drive health and safety improvements. Internal benchmarking helps us learn from plants that have demonstrated exemplary results and share the key leadership attributes that drive occupational health and safety excellence. Our annual President's Health and Safety Award program is used to identify the global best practices for replication.

External benchmarking on injury performance and safety processes serves to challenge our facilities to achieve best-in-class performance and document effective injury performance and management processes. For example, we participate in a multi-industry group of companies that shares information and best practices on safety performance. Participants include several auto industry peers as well as companies in a broad range of industries, from health care to aerospace.

Relationship Management

We know that to manage health and safety effectively, we must maintain good relationships with all stakeholders. Our unions globally share our commitment to a safe working environment and have been our partners at every step of the Health and Safety Leadership effort and other health and safety programs. We also maintain important external relationships with regulatory agencies, professional organizations and suppliers. In the U.S., formal partnerships among Ford, the UAW, the U.S. Occupational Safety and Health Administration and its state counterparts are a visible example.

We use multiple communication channels to reinforce safety messages, from our internal video broadcast system to messages from senior executives. In addition to regular safety talks, we periodically hold safety stand-downs that shut production at our plants to focus attention on a safety message. We can communicate nearly instantaneously with health and safety specialists worldwide, alerting those at similar facilities when a significant accident occurs, so they can take appropriate preventive action. For more information, see the Safety Culture and Accountability section.

Health as a Strategic Advantage

The continued good health of our workforce and their families remains a priority for the Company. Our approach to employee health and, in particular, U.S. health care, is rooted in our core business and our Employment Value Proposition. We are committed to the ongoing evaluation and improvement of programs that promote the good health, well-being, longevity and productivity of our workforce. Our vision is knowledgeable, motivated people who stay well and receive appropriate, efficient health care services. Since families tend to share health habits – good and bad – promoting health among our employees contributes to healthier communities.

In the U.S., health care availability and affordability continue to be of concern, as demonstrated by the national health care reform effort. To mitigate our health care-related costs, maximize worker productivity and improve the overall health of our communities, we are committed to health and wellness programs that maintain or increase the health status of our employees and their families. We provide resources and tools to educate employees to help them make sound choices about health care services and coverage. This will help them become better health care consumers.

Salaried workers in the U.S. who participate in a health risk appraisal and meet with their primary care physicians to better understand their health status are rewarded with lower insurance deductibles. In 2012, more than 80 percent of salaried employees and retirees met the objectives of this program and increased their awareness of personal health improvement opportunities.

For our hourly workforce, we are partnering with the UAW and Southeast Michigan health care providers to pilot a two-year program called the Enhanced Care Program. The focus of this program is on health improvement opportunities for those who have the greatest need. Those identified as eligible for the program will be assigned a nurse care manager (who works in the employee's primary care physician's office) and assist them in achieving their health improvement goals.

We are also collaborating with other large payers, health plans and government agencies by:

- Participating in regional health care quality measurement and public reporting initiatives, with potential data sharing and funding assistance from the government
- Promoting the development of health care initiatives that aim to improve or change the dynamic of the health care marketplace
- Developing new programs to improve the health of employees and family members who are affected by chronic diseases

Globally, we remain committed to the ONE Ford health care strategy. Our goal is to build a culture of wellness that lets people perform at the top of their game at work, at home and into retirement. Our efforts are tailored to meet local health priorities and to ensure that our people receive quality health care when they need it. We focus on health screenings, educational programs and promotional campaigns. We use global health metrics (such as percentage of population at low, medium and high risk for disease) to assess the health of our workforce and track the results of our programs. Through our U.S. and global health initiatives, we are confident we will be successful in improving the health of our workforce and managing our health care cost obligations in an efficient manner.

Our 2012 Safety Record

The year 2012 marked the second year since 1918 in which we did not have an employee work-related fatality. Tragically, however, we did experience a fatality of a joint venture (JV) employee at our JV facility in Thailand. Our primary objective remains zero fatalities on Ford property.

Overall, our safety record improved, although only slightly, compared to 2011. A major safety indicator – the lost-time case rate – was at 0.51, a statistically significant 10 percent improvement from 2011's rate of 0.57. We experienced 139 serious injuries among our direct employees, compared to 143 the previous year. In most of the cases, the injuries were related to slip, trip and fall events or performing work not according to our standards.

While we are pleased that we did not have a fatality among any of our own employees, we recognize that we must remain vigilant. In 2012, we had 312 reported events that could have resulted in more serious consequences, but did not. Each of the incidents was investigated, and appropriate preventive measures were adopted. While this number may seem high, we see it as a sign of higher organizational awareness of potential risks and a willingness to share information with others so the same events do not happen elsewhere.

We have been encouraging all employees to alert management to every injury or hazard, no matter how small, so that we can learn from any mistakes, take corrective actions and create a safer workplace for everyone. We continue working in a collaborative way with the UAW to change the culture so that individuals are motivated to take greater responsibility and ownership for addressing any safety risks and unsafe behaviors.

As we have rebounded from the economic downturn, our plants are making more vehicles than they were in recent years. Given the relative activity levels and relative rates of lost time and serious injury, our U.S. operations have the greatest opportunity for improvement of any of our locations worldwide.

We are in the process of upgrading our information technology to create a common global system for tracking workplace injuries, incidents and causal factors. Having a common system to record incidents will allow us to conduct much more detailed analyses of each event and, as a result, improve overall performance.

We're also continuing to work to develop a common global approach to the use of personal protective equipment. The new data-gathering system will allow us to make comparisons and analyze trends among injuries so we can identify which personal equipment result in fewer injuries.

For more information, see the Workplace Safety data page of this report.

Dealers

Our dealers are a source of strength. They are a critical part of our success and important economic contributors to their communities. They represent the face of Ford to our customers and communities and provide employment, tax support, leadership and customer service. As of year-end 2012, our 3,286 Ford and Lincoln dealers in the U.S. employed 189,000 individuals, with an annual payroll of approximately $7 billion. Worldwide, we had 11,619 Ford and Lincoln dealerships as of year-end 2012.

As part of our continuing efforts to improve the Ford retail customer experience and to create loyal advocates of our products and services, we began working collaboratively with our U.S. Ford dealers to improve dealership facilities. In addition, we began working with our Lincoln dealers to focus our mutual efforts on the transformational change necessary to meet the high expectations of the luxury customer, including upgrading dealership facilities and the services provided at those dealerships.

U.S. Ford dealers were more profitable on average last year than in 2011, as lower inventory costs and higher demand for our new and freshened models increased new vehicle sales.

Engaging with Dealers

Dealer relations are a key priority for us. The Ford and Lincoln Dealer Council provides a forum for open dialogue between Dealer Council members and Ford. Through the Council process, dealers can voice their concerns, needs and ideas for working more productively as a team. Also, dealers annually identify their priorities, which are published along with Ford management responses, providing transparency to the discussions between the Company and its dealers.

To ensure that communication lines remain open, Dealer Council members also participate as members of National Dealer Advisory Panels. The current Dealer Advisory Panels, and the topics they address, are as follows:

- Commercial Truck Advisory Board (CTAB) – sales, marketing and product programs
- Consumer Experience Committee (CEM) – opportunity areas to assist dealers, including consistency within Ford, warranties, single point of contact, empowerment, recognition, communication
- Customer Viewpoint Advisory Panel – customer satisfaction rating system, Viewpoint survey
- Dealer Product Advisory Committee (DPAC) – current and future product cycle plan, including lineup, design, styling and color/trim
- Fixed Operations Strategic Advisory Board – mutual fixed operations business growth opportunities
- Ford Credit Dealer Advisory Board – vehicle financing and competitiveness
- FordDirect Dealer Advisory Board – new products and services
- Government Affairs Committee – advice to Ford Motor Company's Government Affairs office on federal and state automotive legislative issues that have major implications to the business and industry
- Marketing Dealer Advisory Board (MDAB) – vehicle packaging strategy, advertising creative, incentive programs for Ford
- Parts and Service Manager Advisory Committee (PSMAC) – fixed operations programs, including employee recognition/retention
- Retail Experience of the Future (REOF) – third-party aggregators
- Training Advisory Board (TAB) – dealership employee training and recognition
- Young Leaders Committee – millennial perspective on the future of the business, specifically growth in demand for small cars

The feedback gathered through these interactions has helped us develop programs, change

Related links

This Report

- Electrification: A Closer Look
- Green Buildings

policies and enhance processes to improve customer handling and other significant elements of dealers' businesses.

In addition to the feedback provided through the Dealer Council and Advisory Panels, dealer satisfaction is measured in various ways, including the biannual survey of the National Automobile Dealers Association (NADA) as well as day-to-day interaction with our dealers. Approximately 64 percent of our dealers provided feedback through the summer 2012 NADA survey process. We remained consistent in many areas in this survey compared to our winter 2011 record improvements, including in our Regional Sales, Service and Parts Personnel rankings. In addition, Ford Motor Credit Company Capability rankings exceeded the industry and previous scores in nearly every category. Finally, Senior Management Effectiveness, Dealer Communications, Marketing and Vehicle Incentives also showed favorable results.

Dealer Diversity

Diversity and inclusiveness are part of Ford's DNA, and growing a strong minority presence in our dealerships is very important. At year-end 2012, Ford had 167 minority-owned dealerships, which represents 5.1 percent of our 3,286 U.S. dealerships. We continue to work with our dealers to provide a foundation for a stronger future for ethnic minorities in all aspects of the industry through the creation of a unified minority dealer group – the Ford Minority Dealer Association (Ford MDA). Working together, we have developed a ONE Ford approach to minority dealer operations by focusing on five key strategies to promote, sustain and grow ethnic minority representation of Ford Motor Company brands. With a focus on education and creating awareness, the Ford MDA will create minority retail career opportunities, enhance dealer profitability and viability and identify multicultural marketing opportunities and community involvement.

Dealer Sustainability Program

We continue to expand the "Go Green" Dealer Sustainability Program we launched in 2010, as dealers can now receive a Go Green energy assessment through the Ford Electric Vehicle (EV) Program. The goal of the Go Green program is simple: to collaborate with dealers to implement cost-effective ways to improve the energy efficiency of their facilities. Going forward, the Go Green program will continue to be a key component of our Ford Dealer Electric Vehicle Program as we expand our EV model offerings and EV dealer network. As part of the certification process to sell EVs, Ford EV dealers undergo an energy assessment to identify opportunities to reduce their overall carbon footprint and lower their energy expenses.

Ford established an Energy Team to manage the energy assessments, and we partnered with Harris Lighting and NEEM, Inc. – global leaders in energy consulting – to complete the actual assessments. Statistical data from the first phase of our Ford Electric Vehicle Program reveals an average dealer annual cost savings opportunity of more than $40,000 per year, or 29 percent of their energy costs, with an average dealer payback period estimated at 3.1 years. As of March 2013, more than 600 dealers in 48 states have completed our EV certification, including the energy assessment process, and more than 200 additional dealers have signed up to undergo the process during the remainder of 2013. For more information on Ford's EV dealer certification process please see the Electrification section.

In addition, beginning in 2013 the Go Green energy assessment will be an integral component of our U.S. Ford facility renovation program. Our goal to renovate more than 700 U.S. Ford Motor Company branded facilities during the next few years presents a tremendous opportunity for green technology implementation within our dealer network.

Salute to Dealers

Ford annually recognizes dealers' outstanding contributions to their communities through its "Salute to Dealers" program. The program was established in 2001 to demonstrate our commitment to dealers who provide outstanding products and services and improve the lives of those in need. These remarkable honorees and nominees are selected from a field of thousands of Ford and Lincoln dealers across the globe.

Ford is very proud of the contributions made by the dealers who are nominated for this award and the 94 men and women who have been selected as Salute to Dealers honorees since the program's inception. Considering the high quality and community spirit of our dealer body, this is a tribute to their hard work and dedication to make the world a better place.

Ford's 2013 Salute to Dealer award recipients. This program, started in 2001, recognizes dealers who provide outstanding products and services and improve the lives of those in need.

Our 2013 awards recognized the following dealer principals for their unparalleled generosity and commitment to their communities:

- Kittivut Chairat, Ford Chokechai Sukhothai, Sukhothai, Thailand: Kittivut Chairat is leveraging his success in the showroom to help his community through myriad projects targeted to help those in need. He is committed to and engaged in a series of charitable projects for the community that have benefited many in need and raised social awareness for those same causes. His San Fun project, which translates to "weave the dream for the children," benefits local schools in the province of Sukhothai. Through many different events, he and his dealership employees have raised necessary funds to improve school equipment and facilities in the region. One example is the construction of a restroom area where students are able to brush their teeth and wash their hands. Providing these facilities and teaching the importance of cleanliness is part of the health education in the school. A project close to Chairat's heart is the Baan Nokkamin Foundation, which provides shelter for homeless children. The foundation's name means "house of homeless birds." Chairat also sponsors educational scholarships for students with financial challenges. His dedication to improve the community he works and lives in is contagious and serves as a shining example that encourages others to follow. "I want everyone to work together and be selfless and build a culture toward giving," he said. "I want us to be able to get past 'me' or 'what's mine.' If everyone is giving, then our society will be much better."

- Dimas Arnoldo da Silva, Dimas Comércio de Automóveis Ltda, Florianópolis, Santa Catarina, Brazil: Dimas Arnoldo da Silva is dedicated to improving the quality of life for those less fortunate so they can succeed in his native Brazilian community. The value of social responsibility in the community has been passed down from Dimas to his two sons,

Ricardo and Daniel. Most of Dimas's charitable efforts focus on children in need, like the boys and girls at the Center for Education and Training Hope. The Center has a home for children, a day-care facility and an orphanage. Concerned about community needs, Dimas also donates his time and resources to several activities that promote the education and welfare of those living in the region. Through his partnership with the Center for Popular Education and Evangelization, he helped finance an event to educate underprivileged children on important health issues and citizenship. His Christmas campaigns, to collect toys and food for the poor, have helped thousands of children in need in several communities in and around his dealership. He also organized a significant winter clothes drive that resulted in the collection of more than one ton of needed clothing; the clothes were distributed to children, teenagers and the elderly in the surrounding communities. There are many smiles on the faces of Brazilian children as a result of the Dimas Group's generous outreach. Dimas's work with these causes and countless others typifies his passion for helping those in need. He explained: "Someone who comes from a poor family like me, and I had opportunities in life, I think that other people should have opportunity too. I always felt that I should help, because I have had people help me."

- William R. Jarrett Jr., Bill Jarrett Ford, Avon Park, Florida: Bill Jarrett is a humble man who is quietly making a big difference in the small community of Avon Park, Florida. He is well known in the area as being a tireless advocate for youth charities. From coaching Little League to serving as a personal mentor for teens, his contributions are immeasurable. One example is Jarrett's personal funding of an initiative for the local school district where students learn leadership skills through a program called the "Leader in Me." He not only commits financial resources, but tirelessly pledges his personal time for the betterment of the community. Jarrett sits on the board of South Florida State College, where he is currently working to raise more than $20 million for a new performing arts center. He also helped raise needed funds for the establishment of a hospice center for terminally ill patients and their families in the community. Jarrett's contributions have made him a household name throughout Highlands County. The Jarrett Family Foundation strives to build healthy hearts for young people by sponsoring the annual Rock'n Heartland Youth Triathlon Series. He also coordinates a yearly 5K run and walk to support the hospital, as well as the popular Drive Your Heart event. Habitat for Humanity is also a recipient of Jarrett's good will, where he has sponsored and built seven homes for needy families. Jarrett sincerely feels his purpose is to help others have a better life, and his vision is to uplift the community in doing so: "My 30-plus years as a Ford dealer is really just a privilege...a privilege to help others."

- Jack A. Kain, Jack Kain Ford, Versailles, Kentucky: Jack Kain, a first-generation Ford dealer, is a visionary in his community, helping to stimulate economic development in Woodford County. He is devoted to countless social and community causes in and around the Versailles, Kentucky area. His personal commitment of time and leadership helped turn an abandoned farm area into a booming economic resource with more than 2,000 new jobs for local families. As a keen supporter of local education, Kain personally donated land to allow for convenient public access to a local technical college. As a retired U.S. Air Force Officer, Kain became aware of the need for personal supplies for the troops in Iraq and Afghanistan. He implemented a program to adopt entire local military units for the duration of their tour of duty and provided needed supplies monthly. His involvement in social causes extends to the local Hope Center, where he is an adamant supporter of the facility, which provides drug rehabilitation services for substance abusers. Kain also championed full access to healthcare in the region, working tirelessly to keep the doors open at Bluegrass Community Hospital. He is also particularly committed to supporting organ donation in his community. This issue is very personal for him, as his daughter passed away before receiving a lifesaving liver transplant. As a means of giving back, Kain set up a special fund. For every car sold at his dealership, he donates a portion of the profits to the Kentucky Trust for Life organ donation program. Kain embraces his community with a lifetime of personal service and is the perfect role model for corporate citizenship. "Everything is new," he said. "I meet new people and get to tell my stories and hear their stories and it is important to me, and I can't think of anything that I'd rather do than try to help."

- Kevin P. Meehan, Imperial Ford, Mendon, Massachusetts: For Kevin Meehan, charity truly begins at home. Each year, he and his family transform their residence into New England's largest outdoor Christmas display. Called Millis Wonderland, it comprises 43+ acres. The Salvation Army is the sole beneficiary, and the display has become the organization's prime state-wide collection site. Meehan has also funded extensive renovations at a local hospital and hosted many charitable events at his dealerships, including a major fundraiser to cure breast cancer and an annual free car show and family fair that attracts 35,000 guests. His commitment to the community extends to his "Random Acts of Kindness" charity, which assists needy families during the Christmas season, plus to area schools, veterans groups, first responders, youth sports, scouting, DARE, Toys for Tots, and more. And, when the city of Mendon didn't have the funds to build a new police station, Meehan came to the rescue. For his philanthropy, he is one of New England's most loved, respected and admired businessmen. "I think that anyone who is successful within a community owes it to themselves and to that community to give back," he said. "It's doing the most and being the best that you can be, and being an example for your children."

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Gazi Osman Ovali, Ovali Otomotiv, Hatay, Turkey: Gazi Osman Ovali spends numerous hours on volunteer efforts focusing on health, education and improving the quality of life in his homeland of Antakya, Hatay, Turkey. In order to emphasize the importance of blood donations, he initiated a campaign to raise awareness among local citizens, resulting in a doubling of collections. As president of the Turkish Education Foundation Hatay Branch, he helps to provide thousands of scholarships for students with limited financial resources. He has donated a new library to the local science high school, will build a new automobile science laboratory for the local vocational high school and is continually working to create opportunities for high school graduates. These students are also better equipped to handle the transition to college due to the training they receive. His contributions to these projects are critical to their success. In an effort to educate local citizens, Ovali also established an association to protect historical artifacts in the region. The goal is to safeguard the integrity of ancient monuments, ruins and historical sites in the area. He is also active in helping Syrian refugees by providing food, medical help and clothing to the camps, and is the main sponsor and supporter of the orphanage and nursing home in Hatay. One can easily recognize the dedication and compassion that typifies Ovali's commitment to helping those in need. "These social and community problems are not only the problems of our nation, but worldwide," he said. "There are people who encounter these problems, people who were not at the right place at the right times. It is our responsibility to help them in any way that we can."

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Communities

With the same excitement with which we release products, we provide support to the communities in which we live, work and play. Our community support remains independent from but aligned with our Company goals and our ONE Ford plan. One of the outputs of ONE Ford is to build a better world, and so reaching out and providing assistance to our communities is an essential part of what we do.

Ford has been supporting community efforts since our founding more than 100 years ago. For us, it is not just about donating money. It's also about building partnerships and working with others to address the difficult challenges so many people are facing. Our community activities are guided by the sustainability and business priorities that guide our business, including water, human rights and driving safety. We also focus on improving community life by helping communities meet basic needs (such as food and shelter), supporting development programs, helping with emergency and disaster response and assisting in improving educational opportunities. We focus our community activities in these areas because we still believe, as Henry Ford did when he founded Ford Motor Company, that the Company is only as strong as the communities where our employees and customers live and work.

Several trends have reshaped our industry and our Company in recent years, including increased competition globally and changing markets for our products, with the bulk of future sales growth expected to occur in emerging economies. Ford is expanding its own footprint in emerging markets: We are expanding or building new plants at seven locations in the Asia Pacific region and we are hiring employees across that region. Ford and other companies are also expanding our supply chain in these lower-cost emerging markets, as a way to serve both local markets and the global supply chain. These changes are affecting not only how we manage our operations, but also how we engage with and affect the communities in which we operate. To address these changes, we have refocused our community efforts to reflect the global nature of our business, while recognizing that Michigan is our headquarters state and will always remain an important part of our focus.

Whether doing business in Michigan or Malaysia, we seek to respect and make a positive contribution to our host communities. Operating in emerging economies, however, does bring with it some new community issues for us to understand and manage.

One of these issues is human rights. Specifically, we must ensure that our products, no matter where they are made, are manufactured under conditions that demonstrate respect for the people who make them. We also must respect the rights of people living in the communities around our facilities, as well as our suppliers' facilities, who may be affected by those operations. We view respect for human rights as not only a core operational issue, but also a key to maintaining the trust and respect of local communities. That trust is critical if we want to continue to operate and, increasingly, sell our products in those locations. (See the Governance and Supply Chain sections for more on these topics.) We are also looking at water issues in relation to human rights and are exploring ways to connect our water strategy with water-related community initiatives. (See the Water section for more information.)

We have remained steadfast in our community involvement throughout the auto industry's recent struggles. In fact, we recognize the impact of the industry's struggles and resulting stresses on communities, and we were the only American auto company to continue our commitment to volunteerism during the downturn.

Investing in Communities

See some of the community-related projects we are working on around the globe.

Related links

This Report

- Supply Chain
- Water as a Community Issue

Engaging with Communities

To effectively and sustainably manage community relations, we look at the needs of the communities in which we operate around the world and focus on those needs. We also recognize that we must embed community issues into our core business practices and manage them with the same rigor as other aspects of our business.

Changes in the markets for our products have implications for how we engage with local communities. The mobility needs of potential customers in emerging markets differ in some fundamental ways from those in the developed markets the auto industry has primarily served to date. Local community engagement is a key strategy Ford is using to learn about and understand how best to meet the needs of these critical and fast-growing markets. (See the Financial Health section for more on this topic.)

In recent years, we have taken steps to develop a more integrated approach to managing the different dimensions of our community involvement. Our goal is to more closely connect our traditional community relations programs, community impact assessment processes, and key sustainability priorities such as human rights, access to water, and driving safety. Over time, we also want to link all of these efforts with our development of new products and services to meet the unique mobility needs of communities in emerging markets. (See the Mobility section for more on this topic.) In our view, this approach will not only increase efficiencies, but also maximize our impact and effectiveness.

The release of our Code of Basic Working Conditions in 2003 reinforced that our behaviors and actions include a focus on issues outside the walls of our plants and facilities. This Code was more formally adopted as Policy Letter 24 in 2007. In early 2012, Policy Letter 24 was revised, and the title was changed to the Code of Human Rights, Basic Working Conditions and Corporate Responsibility. One purpose of the revisions was to address the human rights “Protect, Respect and Remedy Framework” proposed by United Nations Special Representative John Ruggie. Policy Letter 24 also includes language to specifically address human trafficking and a commitment to work with local, indigenous people on sustainable water use. Finally, the Policy extends supply chain expectations to enforce similar policies to suppliers’ subcontractors, which is consistent with Ford’s Terms and Conditions for suppliers. The performance criteria for assessments of Ford-owned and -operated facilities now address several key community issues and evaluate engagement with members of the local community. (See the Governance section for more on this topic.)

Our work to develop and implement Policy Letter 24 has helped to establish our trustworthiness in communities in which we are developing our Blueprint for Mobility – our strategy for rethinking transportation solutions and personal mobility in the face of population growth, urbanization and other key societal and economic trends. In our view, developing a deep understanding of the unique mobility needs of emerging markets is a precondition of being able to do business in those places.

Related links

This Report

- Financial Health
- Governance
- Mobility Solutions

Investing in Communities
North America

Select a project location

Arizona Georgia Kentucky Mexico Michigan Ontario Oregon Québec Tennessee Texas Washington

Arizona

Stop Hunger Now

Mesa

In Mesa, 34 Ford and Ford Credit NRC volunteers participated in an Accelerated Action Day, Model Team “Stop Hunger Now” event. They packaged high-protein, dehydrated meals for use around the globe. The goal was packaging 16,500 meals to help stop hunger. The Stop Hunger Now organization presented the NRC with an award in appreciation for our Center, packaging a total of over 100,000 meals during Ford volunteer events.

Georgia

Atlanta Community Food Bank

Atlanta

Donated, nonperishable food items were sorted and delivered to needy citizens by Ford employee volunteers.

Kentucky

Dare to Care Hunger Walk

Louisville

Ford Motor Company volunteers staffed the water stop for the 5K walk/run participants at the Waterfront Park Festival Plaza.

Mexico

Donations for the Poor

Chihuahua

Plant employees donated clothes of all sizes for children and adults, to be donated to poor people in Chihuahua City.

Various Volunteer Activities

Mexico City

Employees at Ford's Cuautitlán Stamping and Assembly Plant helped a boy with muscular dystrophy realize a lifetime dream to become an engineer by giving him a tour of the facility, explaining the

manufacturing process and making him an honorary Ford employee. Cuautitlán employees also repaired benches and painted the Ministerio Vive, A.C.

Ford of Mexico Santa Fe and Ford Credit Mexico donated one ton of food to children served by Comeodor Santa Maria, planted 600 trees at Rancho Los Laureles, assisted the Raramuri Community and conducted an in-plant bazaar of native-made goods, and completely rehabilitated the outdoor play spaces at Ford Public School #200.

Michigan

Angels Place

Southfield

Ford volunteers constructed new railings, and reinforced and painted the other secure railings at a group home for developmentally delayed adults.

Community Living Center

Southfield

Ford volunteers constructed a storage shed and security fencing on the grounds of a group home for developmentally disabled adults. Volunteers removed an old shed, assembled a new 8' x 10' storage shed, erected approx. 60' of stockade fencing, and completed a minor landscape clean up.

Gleaner's Food Bank

Detroit

Volunteers packed "pantry pacs" and family food boxes, sorted food, pulled agency orders and performed other tasks.

Habitat for Humanity

Detroit

The 2012 Ford Blitz Build had over 200 volunteers building a Ford-sponsored home in Detroit. Volunteers completed the landscaping in October.

Habitat for Humanity

Monroe

Volunteers constructed the floor system for a new home in a Monroe County housing development. The floor system or floor framing consisted of a system of sills, beams, girders, joists and subflooring, all properly sized and connected together.

International Wildlife Refuge

Trenton

Ford volunteers built a wood pathway over sensitive wetlands, planted trees and built bird boxes.

Liberty Hill

Redford

An ambitious team of Ford volunteers removed overgrown bushes, prepared garden beds, planted new plants and spread mulch to update and beautify this home for its disabled residents.

Lutheran Child and Family Services

Farmington Hills

Volunteers re-stained two bridges on the campus, in addition to completing landscaping and ground maintenance chores.

Matrix Human Services

Detroit

Volunteers painted and spruced up the center, changing it into a colorful and inviting place for the 600 weekly visitors served through on-site services and programs.

Mom's Place

Cass Community – Detroit

Ford Volunteers built an outdoor playground/basketball court for the children and youth who live at Mom's Place and in the shelter programs. They also repaired and replaced fencing, installed bike racks and assembled seating areas for spectators and participants.

Munger School

Detroit

A group of 600 UAW workers built raised garden beds for the school's new home-gardening curriculum, where students will learn by planting and growing their own vegetables.

Pablo David Living Center

Detroit

Ford attorneys conducted a workshop to ensure that senior citizens were properly enrolled in programs so they can obtain the benefits they are eligible to receive.

Penrickton School for the Blind

Taylor

Ford employee volunteers modified battery-operated toys for use by blind children, made repairs and updates to the facility and painted walls in the play areas and living quarters.

Ruth Ellis Center

Highland Park

More than 30 volunteers built an intake area, installed storage cubbies for personal items, and painted and cleaned this facility for underserved and homeless youth needing shelter.

St. Vincent de Paul

Utica

At the Utica St. Vincent de Paul Resale store, Ford volunteers sorted donations, stocked and organized the selling spaces and work stations, and repaired bicycles and other equipment.

Clark Park

Detroit

A large group of Ford volunteers cleaned

Habitat for Humanity

Warren

Volunteers installed kitchen cabinets,

Vista Maria

Dearborn Heights

Volunteers helped clean up Vista Maria's campus with a number of projects: weeding, brush clearing, painting, etc. The activities helped prepare the campus for the upcoming winter months.

and landscaped the park for the enjoyment of the whole community.

countertops and laminate flooring in a newly constructed home for a needy family.

Ontario

Halton Trauma Center and SafetyNet

Oakville

Ford volunteers in Ontario hosted a fundraising event for the Halton Trauma Center and SafetyNet, and collected gently used and new toys, clothing and musical instruments.

Oregon

Firewood Donations

Sandy

Ford volunteers cut tons of wood for low-income families to heat their homes.

Québec

Homeless Shelter

Montreal

In Montreal, Ford volunteers visited a homeless shelter and prepared meals, set up the dining room, served the meals, and sorted food and clothing that were distributed to the visitors.

Tennessee

Habitat for Humanity

Nashville

Ford volunteers from the Nashville Business Center did work for Habitat for Humanity.

Texas

Dallas Meals on Wheels

Dallas

Dallas Ford volunteers delivered meals to homebound seniors and disabled adults.

Houston Interfaith Ministries

Houston

Volunteers accomplished a variety of needed tasks for this nonprofit organization.

Houston Meals on Wheels

Houston

Ford volunteers in Houston delivered meals to homebound seniors and disabled adults.

North Texas Food Bank

Dallas

Ten Ford volunteers donated, sorted and organized crates of nonperishable food items for needy citizens.

Tarrant Area Food Bank

Ft. Worth

Eight Ford volunteers sorted and classified the donated nonperishable food items at this food bank.

Washington

School Supplies and Feeding the Hungry

Tacoma

Volunteers from Titus-Will Ford helped gather supplies for local schools, and Scarff Ford volunteers prepared and served food to hungry teens in the community weekly for three months.

Seattle Gospel Mission

Seattle

Ford volunteers prepared and served breakfast and lunch to the residents; light cleaning and laundry tasks were also completed by the 25 participating volunteers.

Central and South America

Select a project location

Argentina Brazil Colombia Venezuela

Argentina

11 Volunteer Projects

Buenos Aires

Ford volunteers in Argentina undertook 11 different projects during the Ford Global Week of Caring, including building a house, working at a food bank, assisting with special activities for neglected children, working at local schools, doing landscaping work and conducting a blood drive.

Brazil

Toy Donations and Dental Exams

Sao Paulo State

In Brazil, the Ford Credit Corporate Citizenship Committee led the campaign to collect new and gently used toys and food that were delivered to children living in an orphanage in Sao Paulo State. Dental exams were also given to needy citizens.

Colombia

HEAL Foundation

Bogotá

Thirty volunteers in Colombia assisted the HEAL Foundation in offering support to families with children up to 18 years old who have cancer. HEAL provides psychological support, transport, accommodation and recreation.

Venezuela

Entertainment and School Supplies

Valencia

Ford employees provided entertainment and supplies to children from area orphanages, including providing a tour of the local plant. Children also received school supplies, including uniforms and educational materials.

Europe

Select a project location

Belgium Czech Republic Germany Hungary Romania Spain United Kingdom

Belgium

Home for Disabled Children

Genk and Limburg

Ford volunteers in Belgium went to work at a home for disabled children doing painting, gardening and clean-up work.

Czech Republic

Světluška

Prague

In the Czech Republic, Ford became a partner in a special long-term project called Světluška (Lightning-bug), supporting blind and visual handicapped children and adults. Světluška collects money through different events to help integrate people back into work and social life. Most recently, Ford employees helped coordinate the group's National Gathering.

Germany

15 Global Week of Caring Projects

Cologne

Fifteen Global Week of Caring projects were organized by Ford of Germany volunteers in Cologne. Employees from Purchasing, the IT Department, Powertrain R&A, Cologne Merkenich and Cologne Niehl were all involved. Several public schools, parks, an animal shelter, the elderly and disabled adult residents of the SBK home, and the cancer ward of the children's hospital in Cologne all benefited from the employees' efforts.

Leibniz-Gymnasium

Dormagen

Twenty Ford Germany Purchasing employees worked on projects with the Leibniz-Gymnasium Dormagen schools and kindergartens. Two full days were spent at a public school in Dormagen, which is near the Ford plant. The team painted the fifth-floor classrooms and restructured the school's play and sports areas.

Hungary

Pilisi Parkerdo

Budapest

Twenty-one volunteers from the European Review Team worked at the Pilisi Parkerdo (a large park) clearing trails in the Szentendre Forests.

Romania

Craiova Children's Hospital

Craiova

Ford volunteers refurbished the Craiova Children's Hospital yard. The place was littered with broken benches, an old gazebo and some rusty leftovers of play equipment. Also, the concrete fence was broken and unstable. Seventy volunteers worked first to clean up the site and then repaired the concrete fence, painted it, and

installed block pavement, new benches, a new gazebo and new play equipment. The place is now clean and safe for children.

Spain

Various Volunteer Projects

Valencia

Ford employees undertook a range of projects in Valencia, including cleaning the shoreline of Lake Albufera; donating clothing and time to a homeless shelter; organizing a collection drive for old cell phones, the proceeds from which funded the Spanish Red Cross and other charitable organizations; and donating supplies and time doing building maintenance to a local orphanage and a shelter for disabled women.

United Kingdom

SHARE Special Needs Youth Club

Basildon

Volunteers performed building and ground maintenance at the SHARE Special Needs Youth Club facility.

Essex Wildlife Trust

Brentwood

Volunteers assisted the Essex Wildlife Trust at Thorndon Country Park. Invasive plants were removed and debris left from felling trees and shrubs from the forest was cleared to improve and sustain wildlife habitat and improve biodiversity in the forest. Ford employees also worked on projects to re-grow new coastal marsh areas on the Essex coast, aiming to show how wildlife can flourish alongside profitable farming.

Hornchurch Country Park

Hornchurch

At Hornchurch Country Park, Ford employees worked on a variety of tasks in marshes, containing the largest freshwater reed bed in London. The tasks included pulling invasive Himalayan Balsam from along the banks of the River Ingrebourne and removing litter brought in by high rainfall.

Business in the Community

Dagenham

Employees participated in the Business Class program, an initiative run by the charity Business in the Community to get businesses working in long-term partnerships with local schools. Ford volunteers teamed up with the Robert Clack School to help kids.

Asia Pacific Africa

Select a project location

Australia Cambodia China India Indonesia Israel Japan Madagascar Malaysia Philippines Saipan South Africa Taiwan Thailand Vietnam

Australia

9 Global Week of Caring Projects

Melbourne, Victoria, and Geelong

The Ford Volunteer Corps worked on nine different projects during Ford's Global Week of Caring, including painting, planting and landscaping at nonprofit facilities and public parks.

Cambodia

Kurihara Sithor Primary School

Phnom Penh

At the Kurihara Sithor Primary School in Phnom Penh, 200 RMA-Cambodia volunteers built 40 meters of cement school fence; built a 2.5m x 2.5m garden to surround the statue of Sing Cheyvorahman VII; planted 100 tropical trees and flowers; donated study materials to 100 poor schoolchildren; and cleaned up the school campus, assisted by the schoolchildren.

China

Shanghai Social Innovation Center and Migrant Children's School

Shanghai

Through a two-day program at the Shanghai Social Innovation Center in Puxi, 120 volunteers created art with the mentally challenged youth in the program. In a separate project, 60 Shanghai Information Tower volunteers visited the Migrant Children's School in Baoshan and presented a program on the environment. Also, Ford Shanghai Information Tower employee volunteers traveled in three commercial buses to the East Beach near Shanghai and picked up litter and conducted a general cleanup of the landscape.

Water Projects, Charity Drive, Trash Cleanup

Nanjing

In arid southwest China, as part of their Sustainable Water Series, 60 Nanjing employees teamed up with the Amity Foundation and helped eight families build individual water cellars to capture water in the rainy season for use during the dry season. Also, a one-day activity was organized to raise awareness of water conservation and demonstrate Ford's focus on sustainable development. Ford employees also held a charity drive for an orphanage in rural Northern Jiangsu; a representative group of staff visited the orphanage with the proceeds of the drive. And, employees helped maintain the Purple Mountain natural area by picking up trash.

India

19 Volunteer Projects

Chennai

In Chennai, Ford volunteers participated in 19 projects, including bringing educational and awareness-raising programming on environmental sustainability, nutrition and other topics to local schools; conducting collection and donation drives for local orphanages, schools and other children's charities; and assisting with health screenings and health education programs.

Sanitation Projects and Eye-Care Screenings

Kancheepuram

In Kancheepuram, Ford employees helped to install sanitation and water purification treatment facilities at seven villages around Ford India Limited. Also, employees assisted with eye-care screenings in seven villages.

Doctors' Visits

Kalrayan Hills

Ford volunteers coordinated visits by a pediatrician and a gynecologist to residents of four villages.

Indonesia

Clean Water System

Tangerang, Greater Jakarta

More than 60 Ford Motor Indonesia employees worked with the poor residents of Rawa Burung in Tangerang to build a clean water shelter and install a machine that processes salt water into clean, fresh, potable water. The new system, a Water for Humanity project, now provides water to 5,000 area residents.

Israel

Gazelle Valley

Jerusalem

Ford's country manager and volunteers from Ford's Public Relations agency, Triwaks, worked on a project in the Gazelle Valley, a unique wildlife refuge in the middle of Jerusalem and part of the Society for the Protection of Nature in Israel.

Japan

6 Volunteer Projects

Hiroshima

Ford employees in Hiroshima participated in six projects, including beautifying the Peace Park, maintaining the cherry blossoms at the Haji Dan Park, and learning lifesaving CPR from the Hiroshima Red Cross.

Eco-Cap Committee

Tokyo

Ford employees collected plastic bottle caps for the Eco-Cap Committee program in Japan, where 800 caps will purchase polio vaccine for one person.

Madagascar

Rehabilitation of Local Schools

Ankorondrano

Ford volunteers in Madagascar collected funds for and helped with rehabilitation projects in local schools.

Malaysia

Blood Drive

Selangor

Ford volunteers in Malaysia held a blood donation drive as part of the Company's seventh annual Ford Global Week of Caring. The Malaysia initiative aimed to help boost the country's blood-bank levels, which remain low compared to many nations. Close to 100 employee volunteers took part.

Philippines

Free Clinics

Jose Rizal Gawad Kalinga Village

Ford volunteers coordinated a free medical, dental and minor surgery clinic in the Jose Rizal Gawad Kalinga Village and continued their monthly feeding program for 120 underweight children at SIBOL Elementary School. The clinics served 102 people with medical issues, and 79 people received dental care. Ford volunteers also helped construct water-collection stations for 250 families living in the Jose Rizal Gawad Kalinga Village. As a result of this project, these families now have four new deep-well units that replaced five nonfunctioning units.

Saipan

Walk for Health

Saipan

Employees from the CNMI Joeten Motor Company, Inc. dealership encouraged the entire community to join them in the “Fresh Air – Friendships – Feel the Difference Walk for Health.” The goal was to help promote healthful lifestyles and demonstrate how health walks are a cost-effective way to improve the nation’s health.

South Africa

Multiple Volunteer Projects

Port Elizabeth

Multiple projects were completed by volunteers from Ford’s Struandale Engine Plant, Silverton Vehicle Assembly Plant, Plant 4, Ford Motor Credit SA, Marketing & Sales, Purchasing & STA Department, Product Development, and the Silverton HR team in South Africa. They included working with severely physically and emotionally disabled and orphaned children, abused women and children, and the environment. The nongovernmental organizations benefited by these projects included: Chrysalis Preschool, Little Strivers, Funduzela Children’s Home Laphumilanga HIV/AIDS Orphanage Centre, Each One-Reach One, Unica School for Autism, Sinoville Crisis Centre, Leamogetswe Safe Home, and Friends of the Moreleta.

Multiple Volunteer Projects

Pretoria

Ford employees assisted with multiple projects in Pretoria. For example, they helped to install a 200-liter solar system at a shelter in Pretoria that cares for orphaned and abandoned children who have AIDS. Ford employees also gave time and supplies to the Circle of Life, a nonprofit organization serving orphans and the elderly. Projects included building and ground maintenance and enhancements, and educational programs. Ford volunteers also donated supplies and assisted with building maintenance, and provided educational programs at Leamogetswe Safety Home. Ford volunteers also cleaned up debris and invasive species at the Moreleta Spruit (river/wetland) that starts and ends in Pretoria. Ford employees also funded and assembled crisis kits that will be given to victims of sexual abuse, and distributed them to area police stations by the Sinoville Crisis Centre. Personal care and hygiene items, basic clothing, and toys for children were included in the kits made for both children and adults.

Orphanage Donations and Maintenance

Gauteng

Ford employees donated food, clothes, toys and other supplies and performed building maintenance at several orphanages in the area.

Taiwan

Foundation of Spinal Cord Injury

Taoyuan and Chungli

Ford Lio Ho volunteers donated time to the Foundation of Spinal Cord Injury (SCSRC). Approximately 200 employees assisted with the event. Activities included conducting a book sale and fundraiser for the SCSRC; helping the physically challenged during the wheelchair handcar race sponsored by the SCSRC; and completing necessary maintenance work at the center.

Thailand

Habitat for Humanity

Rayong

Ford volunteers, working with Habitat for Humanity Thailand, built 500-liter water tanks, water cooling systems including pumps, pipes, etc., and buildings to house the systems. The communities – Tasit, Pluakdaeng, Lahan and Nong Sue Chang – are located far from water-supply facilities, and needed water tanks to reserve natural water for using and drinking.

Vietnam

“Rice with Meat”

Hai Duong

A mini-charity fair was held in the Ford Hai Duong Plant to raise funds for the poor children living in the mountainous area. The funds collected were donated to the “Rice with Meat” program.

Ford Motor Company has a long legacy of compassion. More than 100 years after the Company began, we continue to touch lives. Our Company’s commitment to supporting local communities through charitable contributions and volunteer efforts has remained unwavering. We deliver on our commitments through our Company’s community relations arm, formally known as Ford Motor Company Fund and Community Services. (The Ford Foundation, meanwhile, is a separate entity from the Ford Motor Company. No member of the Ford family nor Ford Motor Company management is on the Ford Foundation Board of Trustees.)

Founded as a not-for-profit organization in 1949, Ford Motor Company Fund and Community Services is responsible for the Company’s philanthropy and volunteer efforts. Made possible by contributions from Ford Motor Company, the organization makes donations to qualified U.S. not-for-profit organizations that promote community enrichment in the communities in which Ford does business. It supports organizations in three strategic areas: driver safety, education and community life.

In addition to donations from the Fund, Ford also makes direct corporate contributions to a variety of charitable organizations and causes.

In 2012, Ford contributed a total of nearly $30.1 million (slightly above our total in 2011). Of that amount, $21.6 million was in the form of grants awarded by the Fund; the remainder was direct corporate giving.

In addition to grants, we encourage our employees to participate in programs that build stronger communities through the Ford Volunteer Corps. During 2012, some 25,000 Ford employees and retirees in 48 countries and 16 states provided more than 115,000 hours of work on more than 1,350 community service projects – the equivalent of just under $3 million of in-kind corporate contributions. Many of these volunteer projects received mini-grants to help complete the project.

Our community relations work extends to our areas of international operation. Employees from Ford of Mexico, for example, have been working for many years on a program to improve education in rural areas throughout the country. Since the program began in 1966, a total of 212 elementary schools have been built, allowing around 150,000 children to attend daily. Over the years, more than 1.6 million students have graduated from the 212 Ford Schools. Through this program, Ford of Mexico’s employees have also sponsored other initiatives such as the Annual Congress for Principals and Teachers, the National Sports Tournament for students at Ford Schools, and the Media Rooms Project, which is intended to close the technological gap and allow Ford School students access to state-of-the-art educational tools through the Internet.

Beginning in 2011, we engaged Ford employee teams in India and China to identify urgent, unmet community needs in our plant communities in those countries. In 2012 we began to implement strategies for addressing the needs identified by these teams. In China, for example, we are

Related links

This Report

» Ford Motor Company Fund and Community Services

building the capacity of 100 grassroots sustainability/environmental nongovernmental organizations in an effort to help them become more efficient and sustainable. In India, we are working on a range of basic issues in rural communities, including water, education and economic development. We will continue to expand our engagement beyond the Asia Pacific and Africa region in future years, with the goal of creating a ONE Ford approach to corporate social responsibility in Ford communities around the globe.

People

- Workplace
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- Voice: Cyndi Selke

Ford Motor Company Fund and Community Services

The vision of Ford Motor Company Fund and Community Services is to be recognized as a global leader in corporate philanthropy that builds a better world through community engagement, education and driver safety programs.

The goals of the Fund are the same as they were when Henry Ford II founded it 60 years ago: to support local and national programs that effect change in our communities and improve the quality of life. Investing in communities is more than the right thing to do; it's also smart business. Our global Company is only as strong as the local communities in which our employees and customers live and work, so it is in our mutual interest that we work with communities to make meaningful contributions to their quality of life.

It is in that spirit that Ford Motor Company Fund and Community Services supports programs and initiatives that help build vibrant and sustainable communities. The following are examples of some of our most significant or new programs in our three focus areas.

ON THIS PAGE

- Community Life
- Driving Safety
- Education

Community Life

- We expanded our Driving a Brighter Future program to partner with our dealers and a diverse range of nonprofit organizations to enhance quality of life. This program now operates in Chicago, Detroit, Miami, Louisville, Los Angeles, Nashville, Puerto Rico, Phoenix, San Antonio, San Diego and across the Northwest U.S. Our efforts support some of the most vulnerable citizens in the U.S. We also expanded elements of this program to China and India.
- We continue to expand our Ford Mobile Food Pantries program, which helps social service organizations in southeast Michigan collect and distribute food to those in need. Since the program began in 2009, we have donated 22 vans for food collections and deliveries. In 2012 alone, Ford contributed $353,000 to this program, enabling the Mobile Food Pantries to serve more than 1.1 million meals in southeast Michigan during the course of the year. Ford also assisted this program in expanding to other locations in the U.S.
- For the 12th consecutive year, Ford Motor Company and Newman's Own®, Inc. are partnering with Feeding America, the nation's largest hunger-relief organization, to provide refrigerated Ford trucks loaded with Newman's Own food products to food banks across the U.S. This unique "Partnership for Hunger Relief" began when Paul Newman reached out to Bill Ford in an effort to improve the distribution of produce and other perishable food to those facing hunger in rural America. Today, a fleet of 107 refrigerated Ford trucks and vans now reaches into all 50 states. To date, our donated trucks have delivered more than 209 million meals to families across the country, particularly in hard-to-reach, underserved communities.
- Ford employees and Ford Motor Company Fund and Community Services are major supporters of the United Way in the U.S., giving nearly $6.1 million in 2012 to support numerous community-based social services organizations.
- In 2012, we continued to expand the Ford Community Corps, which we launched in 2011. Through this program, a network of six Michigan colleges and universities have agreed to work with Ford to create new service learning initiatives that recognize scholastic achievement while encouraging service to the community. Unlike traditional volunteer programs, Ford Community Corps programs seek to match student know-how with specific nonprofit needs, connecting teams of students with work-related projects created by local nonprofit organizations. This allows students to provide more value to their nonprofit partners, while at the same time

Related links

External Links

- United Way
- Jesse Brown memorial Youth Scholarship
- Ford community corps
- National Disabled Veterans Winter Sports Clinic

gaining valuable work-related skills and experience.

- Ford has a long history of working with disabled American veterans. As a major contributor to the Jesse Brown Memorial Youth Scholarship Program, for example, Ford provides scholarships to students who volunteer at local Veterans Administration medical centers. For 17 years, Ford has also been a sponsor of the National Disabled Veterans Winter Sports Clinic, which brings hundreds of disabled veterans to the mountains of Colorado to participate in adaptive sports, including skiing, snowmobiling, sled hockey and rock wall climbing. In 2011, Ford donated funds for Disabled American Veterans (DAV) to purchase eight new vehicles for its headquarters and the DAV Transportation Network, in addition to providing $45,000 to the DAV's youth volunteer scholarship program.

- In 2012, Ford joined the Red Cross Disaster Responder program and pledged donations on an ongoing basis in advance of major disasters, which helps the Red Cross ensure an immediate response to meet the needs of those affected by disasters of all sizes, at no cost and regardless of income.

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Driving Safety

- The Fund supports safe driving through its award-winning Ford Driving Skills for Life (DSFL) program, a free, safe-driving curriculum that has trained hundreds of thousands of drivers through web-based and in-person driving sessions since the program was launched 2003. In the U.S. the program focuses on teen drivers. It was developed by Ford, the Governors Highway Safety Association and a panel of safety experts to address the no. 1 killer of teens in the U.S. – traffic crashes. In 2012, Ford DSFL launched a new online video game, which simulates the hands-on driving exercises taught in traditional Ford DSFL hands-on driving clinics. Ford DSFL is the nation's most comprehensive driving skills program, with free professional driver instruction, a web-based curriculum, state grants and free materials. Since 2003 in the U.S., Ford DSFL has hosted hands-on training in 40 states and Puerto Rico, and conducted programming in thousands of schools. In 2008 the program was expanded into Asian markets, where it now trains newly licensed drivers in China, India, Taiwan, South Africa, Thailand, Vietnam, the Philippines, Indonesia and Malaysia, as well as Puerto Rico. In 2012, Ford DSFL continued to expand by offering programming in Canada and the United Arab Emirates and plans to expand further in 2013. Ford DSFL programs are tailored in each of these markets to reflect the local driving environment and road conditions. In Vietnam, for example, Ford has added a "No Honking" campaign to its DSFL programming to help to raise awareness about the prevalent and inappropriate use of vehicle horns in Vietnam and its adverse effect on traffic safety.

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Education

- Our Next Generation Learning (Ford NGL) project mobilizes educators, employers and community leaders to develop a new generation of young people who will graduate from high school prepared for both college and careers. Ford NGL improves teaching and learning, promotes the development of career- and interest-themed high schools to better serve students, and aligns business and civic engagement in education to improve student and workforce outcomes. Through this program we work with national, regional and local partners to prepare young people to compete successfully in higher education and in the global, 21st century economy.

- The Ford Partnership for Advanced Studies (PAS) is an innovative high school curriculum that engages students in high-demand fields such as engineering, alternative energy and business, providing students with the critical skills they need to succeed in college and the workplace. Since its inception in 2005, Ford PAS has reached hundreds of thousands of students and garnered several awards, including the first Public–Private Partnership Award given by the National Governors Association for innovative educational programming.

- Through the Henry Ford Academies (HFA) program, Ford has replicated its award-winning small high school model – which we started with the original Henry Ford Academy, located on the grounds of The Henry Ford in Dearborn, Mich. – in three additional communities: Detroit, San Antonio and Chicago. Students at these schools benefit from the new HFA Model Curriculum, which is thought to be the first in the nation to focus explicitly on innovation and

creativity.

- The Ford Driving Dreams through Education program is a competitive, grant-based initiative in partnership with the League of United Latin American Citizens (LULAC). The initiative allows LULAC councils throughout the country to implement localized programs to address high school dropout prevention in their communities. To date, 28 communities have been positively impacted by the program. Building on the success of Ford Driving Dreams through Education grants, Ford has also partnered with the Irving Independent School District in Texas to launch the Ford Driving Dreams Tour. The Tour is a unique 360 degree approach to helping students stay in school and move on to college, through scholarships, motivational student assemblies, peer-to-peer support and an innovative district-wide contest to motivate students to pursue their dreams. The program reached nearly 9,000 students.

- The Ford College Community Challenge invites college partners to work with their local communities to put together innovative, student-led proposals that use the school's resources and capacity to address a social need or problem in the local community. Proposals must address the Challenge's theme – Building Sustainable Communities – in an innovative way, and must also address the issue of alternative energy and its role in building a sustainable community. Five winning proposals are selected each year and provided with funding for implementation.

- Through our Ford Blue Oval Scholars program, we award hundreds of scholarships to students throughout the U.S. The program includes a web-based initiative that links scholarship winners together through an online portal, allowing them to connect with Ford and others in a variety of ways. The program also sponsors an annual "Heart behind the Oval" scholarship contest that recognizes and rewards students making a difference in their communities. In 2012, the Ford Fund awarded more than $1 million in college scholarships.

In addition to the above, Ford supports a wide variety of other organizations through direct corporate contributions and sponsorships. Highlights from 2012 include the following:

- For more than 20 years, Ford has been involved in helping find a cure for juvenile diabetes.

- Ford has also been a long-time supporter in the fight against breast cancer. For 19 years, Ford has been a National Series Sponsor of the Susan G. Komen Race for the Cure® series and has dedicated more than $120 million to the cause in donations and in-kind gifts. Ford's commitment goes well beyond the October race; it lasts 365 days a year and focuses on raising awareness, support and donations for this cause, including apparel that is sold on fordcares.com. This specially designed "Warriors in Pink" clothing and accessory line is dedicated to those fighting this disease, and 100 percent of net proceeds go to the fight against breast cancer. Since 2006, we generated more than $4.2 million from apparel sales for the cause. In addition, more than 75,000 Ford employees and thousands of dealership employees are involved in races and supporting the cause in their local communities. In 2012, Warriors in Pink expanded the family of charities we work with to include the Young Survival Coalition, the Dr. Susan Love Research Foundation and The Pink Fund in addition to Susan G. Komen Race for the Cure. Consumers can designate which of these charities they help by selecting the charity of their choice at checkout. We also introduced nine female and two male survivors as part of our Models of Courage program. The inspirational stories of these survivors can be found on fordcares.com.

- Ford volunteers raised $530,000 for the March of Dimes. Ford Vice President Jim Tetreault and UAW Vice President Jimmy Settles served as UAW/Ford sponsors for the 2012 March for Babies campaign.[1] The combined efforts of the UAW/Ford teams exceeded the outstanding results from 2011. Over the past eight years, the UAW/Ford team has raised more than $3 million.

- Ford volunteers raised more than $319,000 for the National Multiple Sclerosis Society's Michigan Chapter in 2012. We were also awarded Corporation of the Year by the organization's Board of Directors.

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1. The full name of the UAW – which originally stood for "United Auto Workers" – is now the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America.

Ford Volunteer Corps

In addition to the financial contributions made by Ford and Ford Motor Company Fund and Community Services to hundreds of organizations globally, thousands of Ford employees and retirees volunteered to help build stronger communities around the world in 2012. Ford is a leader in community volunteerism. Volunteer efforts help to build the morale of our employees. There's a strong business case for volunteerism, too: Our volunteer projects help to strengthen the name of Ford and enhance purchase consideration for future buyers. Furthermore, our volunteer efforts help to build stronger communities, which in turn strengthen local economies, enabling more families to consider purchasing a new vehicle.

Volunteerism has been an integral part of Ford Motor Company since its creation in 1903. Today, we help build communities by leveraging the volunteer muscle of Ford employees and retirees around the world. In 2012, Ford's U.S. hourly workers, who already have a long tradition of volunteering through other channels, had the opportunity to join our Volunteer Corps. The new, four-year UAW/Ford Collective Bargaining Agreement, finalized in late 2011, expanded the Ford Volunteer Corps program to include Ford's UAW-represented workforce.

The Ford Volunteer Corps operates across six continents to strengthen the communities in which our employees and customers live and work. Ford Motor Company offers its U.S. salaried employees two workdays per year to volunteer in the community. In 2012, more than 25,000 Ford employees and retirees in 28 countries provided more than 115,000 hours of volunteer time for their communities, or the equivalent of slightly under $3 million in in-kind corporate contributions.

In 2012, Ford held four "Accelerated Action Days" – concentrated one-day efforts to meet critical needs identified by our agency partners. Each Accelerated Action Day had a special focus, such as families and children or the environment. For these events, Ford volunteers are mobilized into MODEL Teams that are matched with local social service agencies requesting their help. The daylong service programs benefit shelters and schools, children's homes, soup kitchens and parks and playgrounds, to name just a few. In 2012, more than 60 community organizations shared $230,000 in mini-grants to support the volunteer projects (e.g., for purchasing the paint and lumber needed to complete a project). We also include a collection or drive on each action day. For example:

- On our "Children and Families" action day we collected diapers and formula
- On our "Better World" action day we collected electronic waste such as phones and printers
- On our "Giving and Sharing" day we collected coats and jackets for the Salvation Army

Software designed and launched by the Ford Volunteer Corps aligns our volunteer projects with the needs of nonprofit organizations. Using this system, employees can go online to sign up for volunteer projects based on their interests and availability. Before launching this software system, Ford volunteers would essentially tell the nonprofit organizations when we would provide hands-on assistance, without fully assessing when would be the best time for our partners to receive assistance. Now, our nonprofit partners can tell us when they need help and what manner of assistance they need. We are continuing to expand the system to strengthen data-collection capabilities – especially in our non-U.S. operating regions – and to enhance the employee user experience.

In 2012, Ford held its seventh annual Global Week of Caring, a weeklong series of volunteer events around the world that is coordinated by the Ford Volunteer Corps. During one week in September, more than 10,000 Ford employees worked in 28 countries to complete over 268 volunteer projects, 25 more projects than last year. Ford contributed more than $100,000 in grants for the tools and supplies needed by volunteers to complete their projects in the Asia Pacific countries of Australia, China, India, Indonesia, the Philippines, Taiwan, Thailand and Vietnam, as well as South Africa. Another $140,000 in grants was shared by nonprofits in the U.S. During this week, participants repaired schools in Australia and South Africa, created water projects in China

and Indonesia, worked on environmental conservation in the U.K., helped at orphanages in India and served meals at a homeless shelter in Canada, to name just some of the efforts. In many locations, Ford retirees participate side by side with current employees on these volunteer projects.

Customers

Our customers' wants and needs continue to evolve. We monitor consumer trends and develop and promote products to fit certain market segments. In recent years, we have paid particular attention to the growing demand for more fuel-efficient and cleaner vehicles.

We are also working to understand the unique and changing needs of our customers in urban and emerging markets, where congestion, air pollution, traffic safety issues and social inequalities add a new range of challenges to delivering personal transportation solutions. The Mobility Solutions section discusses our efforts to understand and address these challenges.

As the marketplace becomes more diverse, we are also working to better reach multicultural audiences, particularly in the United States. We have made dedicated efforts to market Ford and Lincoln products to African-American and Hispanic customers, including developing Spanish advertising programs targeting the U.S. Hispanic market. We have also been a leader in the development of in-language, internet-based advertising programs. Our Spanish website, es.ford.com, is one of the most extensive in the industry. And, we were among the first to utilize Google with Spanish search programs.

This section discusses how we engage with customers, understand customer needs, build customer awareness of our products and increase customer awareness of environmental issues.

Engaging Customers

Maintaining good relationships with our customers is one of our most important activities. We provide a variety of means for customers to reach us, including mail, email and toll-free phone. We reach out to customers and potential customers through focus groups and other market research, and we track customer satisfaction.

We also gather online, consumer-generated content to learn what consumers are saying about both our Company and the industry in general. Increasingly, customers are using these electronic media – including websites, discussion groups, blogs and social networks – to research, discuss and problem-solve topics related to their current vehicles and those they are interested in purchasing. In recent years, we have been participating more actively in this social media arena, monitoring consumer-generated content found online. Summary reports are compiled based on what we find and gather online, to convey what consumers are saying about our Company and our products. These reports are shared throughout the Company – from brand managers and product development engineers all the way up to senior-level management.

In addition to listening to what customers are saying online, we are also increasingly sharing information and engaging in discussions through social media. For more on our social media guidelines for employees, please see the Governance section of this report.

Related links

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- Governance

Understanding Customer Needs

We must keep pace with consumers' evolving wants and needs in order to remain competitive. We monitor global market trends, shifting consumer interests, and social and political developments to identify issues that are likely to affect our consumers, our industry and our Company. We rely on a global network of internal and external experts to ensure that we have a wide-ranging, comprehensive perspective on consumer trends and how they will affect consumers' future choices about vehicles and mobility. We apply these trend analyses throughout our marketing, product development, research and design organizations to guide future product and technology developments.

Our marketing experts use an intensive research and analysis process to understand who our potential customers are, what they value and what they want in a vehicle. We define a "brand DNA" and a "target customer" for each of our main brands and products. The brand DNA and target customer profiles go beyond simple demographic information such as age, gender and income; we build complete profiles of our target customer, including information such as what they like to do, what music they listen to and where they shop. Using a fully developed, typical customer as the focus for vehicle development brings our market research data to life and keeps everyone on the product development team focused on designing a vehicle that meets customers' needs and desires.

We develop our target customer profiles based on psychological traits and archetypes that transcend national characteristics and country-specific customer desires. This is a critical part of our drive to develop truly global vehicles that appeal to customers in multiple markets. Toward this end, we are focusing more on the emotional and psychological elements of how customers choose their vehicles as well as the traditional economic criteria of price and features. In addition to developing vehicles that deliver best-in-class features and price for value, our goal is to develop vehicles that fulfill the dreams and aspirations of each target customer group. We believe this approach not only helps us to understand our customers better, it also helps us to develop vehicles that capture the imaginations, dreams and loyalty of our customers across the globe. Of course, we are keenly aware that economic pressures can push the boundaries of brand loyalties, and we need to work to continue to build vehicles that customers can afford.

We know that we cannot predict the future. However, we can prepare for a broad range of possibilities through "futuring" exercises that help us to ensure we have robust strategies in place, whatever the future might bring. Therefore, in addition to product- and brand-specific market research, we have an office dedicated to tracking shifts in social, technological, economic, environmental and political arenas. In late 2012, for the first time, we made our global customer trends research public in *Looking Further with Ford*, a report revealing insights about consumer habits and behaviors expected to shape 2013 and beyond. This trends report leverages years of research and collaboration with thought leaders from around the world. By publishing it, we hope to spur further discussion, inspire deeper insights and showcase the innovative and thoughtful side of Ford Motor Company.

Looking Further with Ford presents a series of micro trends that will influence the market landscape in 2013 and beyond, none of which are specific to the automotive industry. The underlying purpose of the trend work is to understand the forces affecting what is happening in social, technological, economic, environmental and political arenas as a means to better anticipate the future wants, needs and desires of consumers. This collection of trends reveals recurring themes of trust, authenticity and self-reliance. Some examples of the trends we are seeing include the following:

- Trust and transparency as differentiators: Given its relative scarcity, trust is emerging as a key positive differentiator for brands and companies. Correlation of trust to brand equity has increased by 35 percent since 2009. As a result, companies are rethinking how they communicate with and reveal themselves to consumers. The more real and authentic they are, the better. Similarly, consumers are rewarding companies for "getting real": Admissions of failure and imperfection are often seen as signs of strength by consumers who seek greater authenticity.

- Increasing demand for more fuel-efficient vehicles: In the wake of the global recession, consumers have never been more keenly aware of the operating cost of vehicle ownership. Recent studies have shown that customers across the globe are willing to pay more for more efficient vehicles that will pay back their investment over time. This increasing interest in fuel efficiency is also reflected in a trend towards a “post-green” culture in which the obstacles to environmentally beneficial behavior are lowering while peer pressure to be green is mounting. As a result, there continues to be growing interest in green action and recognition that – big and small – positive environmental actions add up.

- Increasing interest in safety and security: Safety and security remain a top priority, as concerns about health and wellness remain paramount in our day-to-day lives. Consumers are eager for products, services and experiences that provide lasting peace of mind.

- An increase in “engaged consumption”: Consumers are increasingly using their consumption to express their values, recognizing that they can change their lives and the world through their purchases. In a trend we call “consumer republic,” consumers are recognizing that the choices they make at the cash register can hold corporations accountable, change lives and impact the world.

- A desire for products that “work harder”: Consumers are increasingly interested in products that help them help themselves, and that deliver maximum performance in order to minimize the number of things we need. In other words, consumers are demanding products and services that work harder for them and provide feedback on their performance as the user and tools for personal accountability. In the automotive arena, this translates into expanding interest in vehicles that help consumers improve their lives. This includes vehicle technologies that provide real-time feedback on fuel efficiency so that drivers can improve their driving habits, and in-vehicle communications technologies that give customers information and connectivity to make the most of their driving time safely.

- The increasing popularity of urban living: In a trend we are calling the “rise of the intima-city,” we are seeing an increasing interest in urban living and people-focused cities that provide a range of integrated personal mobility options, including vehicle sharing, bike- and pedestrian- friendly design and mass transit.

Building Customer Awareness

One important goal of our marketing and communications activities is to increase consumers' knowledge of our products and our corporate performance. We are particularly focused on improving consumers' awareness of the Company's excellent quality, safety, environmental and social performance. We use a wide range of communication methods to share information about Ford with potential customers and to get feedback from drivers. This Sustainability Report is one key element of that strategy. We also engage in two-way communications with consumers and other stakeholders through a variety of stakeholder engagement forums.

In 2012 we introduced a new global brand promise, which is summarized by the phrase "Go Further." Put simply, Go Further represents our culture and what makes Ford different from any other automaker. It promises that we are always going to go further to deliver a strong business that builds great products for a better world. While Go Further is used for marketing and advertising, it is much more than a tagline. It's about how Ford employees deliver ingenious products, make them available to everyone and believe in serving each other, our customers and our communities.

These communication efforts – coupled with delivering products of world-class quality, with world-class fuel economy, technology and other features – are paying off. From 2011 to 2012, we saw increases in favorable opinion and purchase consideration for our brands in Argentina, Brazil, India, Korea, Saudi Arabia, South Africa, the U.S. and the U.K. Some of these increases were quite large. For example, from 2011 to 2012 purchase consideration for Ford vehicles increased by 7 percentage points in Saudi Arabia, 6 percentage points in Thailand, 5 percentage points in India and 4 percentage points in Brazil.

We track consumers' familiarity with, opinion and consideration of, and shopping and purchase intentions in regard to our vehicles as part of our brand value and awareness tracking. Tracking these elements helps us to understand how consumers view our vehicles and where we need to focus our product development and communications efforts to improve consumers' perceptions of and interest in our vehicles.

Social Media

Social media is now a mainstream communication channel. Companies such as Facebook, LinkedIn, Zynga and others are publicly traded, and companies, media and individuals are using these platforms at an unprecedented rate. Facebook alone, for example, has more than 1 billion active users.

We are using social media platforms such as Facebook, Twitter, Google+, Instagram, YouTube and others to connect with customers and get the word out earlier than ever about our new products. Ford was the first automaker to reveal vehicles via social media and social gaming. In 2010, for example, instead of revealing the new Ford Explorer at an auto show or using another traditional marketing approach, we introduced the vehicle first to our fans on Facebook. In 2012, we launched the all-new Ford Escape through Escape Routes, a campaign that combined social media and a primetime television reality show. Beyond these large campaigns, our efforts with groups of influencers have expanded as well. In January 2012 we invited 150 bloggers from 16 countries to Detroit for the North American International Auto Show for the revealing of the 2013 Ford Fusion, Fusion Hybrid and C-MAX Energi. The bloggers treated the event like traditional journalists, holding scrums with our executive team and producing enough content to dominate with a 40 percent share of voice at the entire show.

We continue to actively use Twitter to engage with consumers on all matters, including customer service. We answer questions, provide information and give customers help when needed. The volume of requests we have handled through our @FordService Twitter account has more than tripled in three years, and our customer satisfaction rates for communications through this platform are 92 percent or higher. Twitter also remains the best resource for real-time assessment of what

Related links

This Report

- Sustainability Governance

people are saying about us and provides us with a valuable platform for listening.

On our Ford websites, we are making it easier for visitors to find third-party content about Ford online, particularly with the ever-evolving Ford Social site. We hope that integrating third-party information into our sites will provide a valuable service to consumers and will show our confidence in the vehicles we're producing.

We were recognized in 2011 for our use of social media to communicate sustainability, ranking third in the SMI-Wizness Social Media Sustainability Index. This ranking highlighted our Ford Social site, sustainability reporting website and use of Twitter.

Through these and other innovative communication methods, we are seeking to stimulate user discussions about our products. Opportunities for discussions and information monitoring on the Internet are countless. So, in addition to the institutionalized efforts of our Communications and Marketing divisions, we are empowering some of our employees to communicate about Ford on the web by making our "digital participation guidelines" more widely available and giving employees the information they need to communicate successfully in these arenas. We think that allowing employees to have open and real communications within their digital communities sends a clear message that Ford is committed to forging relationships online and being accessible to its audiences. For more on the guidelines, see the Governance section.

Other Nontraditional Marketing

We use a range of other nontraditional marketing and communications efforts to increase awareness of our products and engage consumers and stakeholders. Through our Drive One campaign in North America, for example, we offer opportunities for people to experience our vehicles firsthand. The goal of Drive One is to encourage people who might not otherwise be considering a Ford product to see for themselves what we offer. Drive One is based on our belief that, when people drive our vehicles, they will have more positive opinions of our products and will be more likely to buy them. The campaign highlights Ford's four key brand pillars: safety, quality, green technologies and smart technologies.

Based on the Drive One approach, we hosted our first ever "global test-drive" event to launch the all-new Focus in February 2011. For this event, we chose 50 consumers from around the world and flew them to Spain for a two-day driving experience in Focus prototypes, even before the car was in dealerships. We chose the test drivers through our Focus Facebook page. We also asked them to record their experiences and their views and share them with others directly through their social networks.

We believe that supporting causes that are important to our customers is a key way to show our commitment to social responsibility and strengthen our community ties. We emphasize this approach through the "Drive One 4 UR School" and "Drive 4 UR Community" campaigns. Through these programs, participants test-drive a new Ford vehicle and help raise money for their local high school or local nonprofit. For each test-drive that occurs during the single-day events, Ford donates $20 (up to a total of $6,000 per event) to fund school and nonprofit activities. These programs have been successful at both raising money for local organizations and raising consideration of Ford products. The programs have raised more $10 million for schools and nonprofits and have enabled more than 495,800 participants to test-drive Ford products; approximately 69 percent of these drivers did not own a Ford product at the time of the test-drive. Feedback from participants shows that both purchase consideration and favorable opinion of the Ford brand improved after participating in the program.

Traditional Advertising

Finally, we use traditional advertising to inform consumers about our products and our corporate performance. We use three primary advertising strategies: corporate-level communications about Ford Motor Company, advertising about our brands and specific products, and dealer-level product advertising. The goal of these advertising strategies is to sell vehicles. But just as important, we are aiming to increase general awareness about the excellence of our products and our corporate performance among people who are not yet in the market for a vehicle. To develop new products, we respond to market demands through our market research and product development efforts. Through our advertising, we hope to increase interest in and preference for our vehicles and our Company, based on the excellence of our products and the positive actions of the Company.

As part of our ONE Ford transformation, we are working to improve the effectiveness of our advertising communications by involving dealers more closely in the development of our advertising strategies. Dealers communicate with our customers every day, and they have special knowledge about consumers' needs and wants. We included our dealers from the start in our Drive One campaign. In fact, prior to developing Drive One, we sought input from our entire Ford dealer body, and that feedback informed the campaign's development. Together we arrived at a campaign that works at the corporate, brand, product and dealer levels.

Increasing Consumer Awareness of Environmental Issues

Ford is also working to increase consumer awareness of key vehicle-related environmental issues, including how drivers can help to improve the environmental performance of their own vehicles.

We offer an "electric vehicle" website to help consumers understand the different electrified vehicle technologies and options. The site provides jargon-free explanations of the differences between hybrid electric vehicles, plug-in hybrid vehicles and all-electric vehicles, including details on the technologies that make them possible, such as battery chemistry, charge ports and regenerative braking. The site is part of Ford's relentless effort to educate consumers about the choices offered by the Company's range of electrified vehicles and to help potential buyers determine which electrified option might best suit their specific driving habits and needs. Consumers who visit the site can review videos, text and cutaway diagrams that illustrate the differences between vehicles such as the Ford Fusion Hybrid, the Ford Focus Electric and planned Ford plug-in hybrids. The site does not offer opinions on which vehicle technology is better. Rather, it provides clear explanations about how gasoline, hybrid, plug-in hybrid and all-electric vehicles work, to help consumers decide which vehicle could be the best option for them. The site, which had been visited by more than 200,000 people as of April 2012, also features a quiz to help people identify the right car to fit their needs based on questions about their lifestyle. We also launched a Plug Into Ford website, which provides customers with an in-depth look at how to make the most of the electric vehicle lifestyle. Read more about our electric vehicles in our Electrification section.

In early 2012 we launched a calculator to help our fleet customers think through the relative lifecycle carbon emissions of different vehicle options. In addition to measuring emissions (such as carbon dioxide, volatile organic compounds and oxides of nitrogen) based on the vehicle's fuel source, the calculator also provides fuel-cost estimates based on regional pricing data. The calculator provides a comparison between any two Ford models currently on the market, including hybrid-electric, plug-in hybrid and all-electric vehicles. For more information on this carbon calculator, please see Quantifying Our Environmental Impact.

We are also collaborating with SHFT.com, a media platform that provides ideas and inspiration to lead a more eco-conscious life, on an inspiring documentary series featuring innovative leaders who are shaping sustainable businesses and influencing positive change around the world. This partnership, which aims to inspire people through film, design, art, transportation and culture to make smarter environmental decisions, includes developing creative content, such as a short documentary series, live events and film festivals. The first set of films, released in 2012, highlighted leading influencers from industries such as sustainable fashion and transport, advanced upcycling and smart plastics.

We are also educating drivers about environmental issues while they drive. For example, Ford's advanced in-vehicle system – SYNC® with MyFord Touch™ – offers an array of real-time information on fuel-economy performance that can coach drivers to get more miles to the gallon and save on fuel costs. For example, SYNC with MyFord Touch enables drivers to monitor and track their vehicle's real-time fuel-economy performance and mile-per-gallon averages for the past five, 10 and 30 minutes. In addition, the SYNC with MyFord Touch map-based navigation system offers an Eco-Route option that quickly calculates the most fuel-efficient route a driver can take to get from point A to point B.

In the U.S., our hybrid and other electrified vehicles offer a SmartGauge™ with EcoGuide instrument cluster tool, which provides real-time fuel-economy data and promotes fuel-efficient driving by showing a graphic of growing leaves and flowers as drivers' fuel efficiency improves. We launched a similar system in Europe called Ford EcoMode. Similar to EcoGuide, EcoMode helps educate the driver to achieve improved real-world fuel economy. It was first introduced on the Ford Focus ECOnetic and will be implemented as an option in more European Ford models in the future.

For more information on how we are using in-vehicle information technology to help drivers improve their fuel efficiency, please see the Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance section.

Related links

This Report

- Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance
- Electrification: A Closer Look
- Driver
- Quantifying Our Environmental Impact

We have also developed eco-driving tips that help drivers improve their fuel economy by almost 25 percent. We provide these tips on our website and through a Ford Driving Skills for Life online training program. We started providing eco-driving training in 2000 in Europe and have since expanded it to the U.S. and Asia. For more information on our eco-driving training programs, please see the Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance section.

Data

IN THIS SECTION

Engagement and Community

- Employee Satisfaction, Pulse Survey
- Overall Dealer Attitude
- Employment by Business Unit
- U.S. Employment of Minority-group Personnel and Women at Year-end
- Charitable Contributions
- Volunteer Corps

Workplace Safety

- Global Lost-time Case Rate (per 100 Employees)
- Lost-time Case Rate by Region (per 100 Employees)
- Workplace Health and Safety Violations
- Global Fatalities

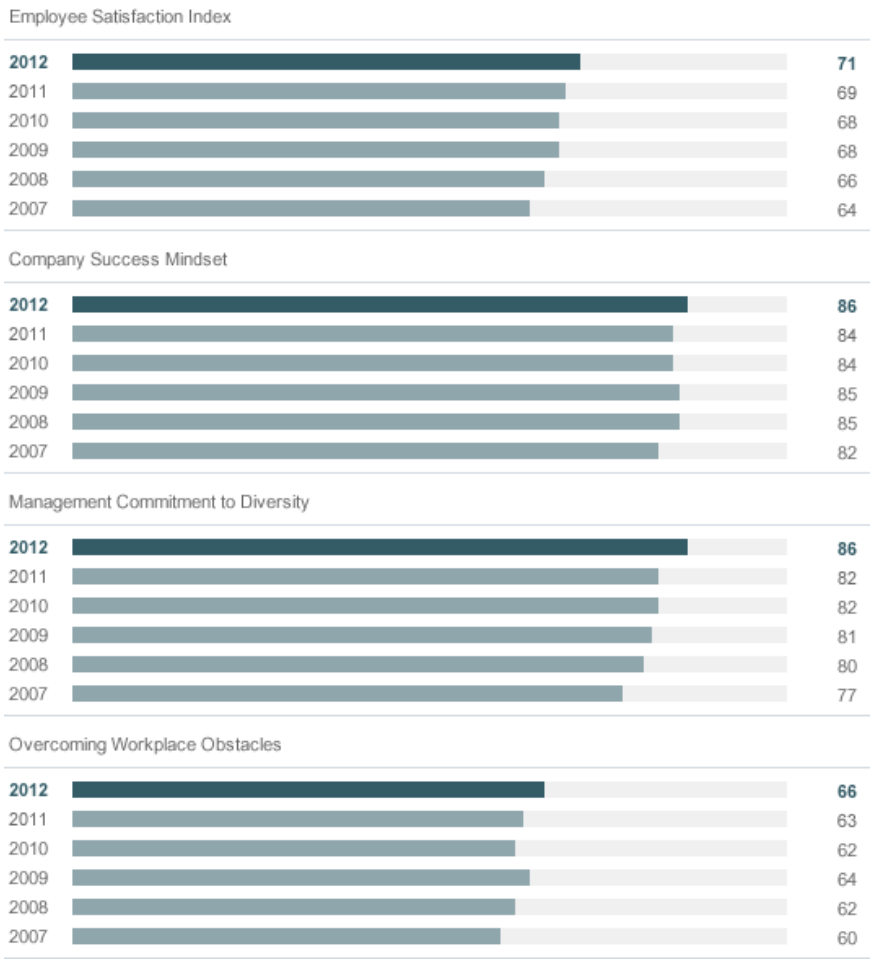
Data:

Engagement and Community

DATA ON THIS PAGE

A. Employee Satisfaction, Pulse Survey

Percent satisfied



	2007	2008	2009	2010	2011	2012
Employee Satisfaction Index	64	66	68	68	69	71
Company Success Mindset	82	85	85	84	84	86
Management Commitment to Diversity	77	80	81	82	82	86
Overcoming Workplace Obstacles	60	62	64	62	63	66

Notes to Data

Each year, we ask our salaried workforce to participate in the Pulse survey to gain insight into employees' overall satisfaction with the Company, their jobs, diversity and other aspects of workplace satisfaction.

In 2012, the Employee Satisfaction Index continued a nine-year trend of scores equal to or better than the prior year. The topic of Management Commitment to Diversity continued a six-year trend of scores equal to or better than the prior year.

Related Links

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- Employee Satisfaction

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B. Overall Dealer Attitude

Relative ranking on a scale of 1–100 percent

	2007	2008	2009	2010	2011	2012
Ford (winter/summer score)	64/69	69/68	71/80	83/85	84/82	84/83
Lincoln (winter/summer score)[1]	64/66	66/64	66/71	71/62	61/64	68/67
Industry (winter/summer score)	70/72	73/72	70/74	75/78	80/81	82/81

Notes to Data

1. Ford stopped production of Mercury with the 2011 model year. Beginning in 2011, the dealer satisfaction data for Lincoln dealers no longer include Mercury dealers.

Overall dealer attitude is measured by the National Automobile Dealer Association (NADA) Dealer Attitude Survey. Scores are for the summer and winter respectively of the year noted.

Analysis

Approximately 64 percent of our dealers provided feedback through the summer 2012 NADA survey process. We remained consistent in many areas in this survey compared to our Winter 2011 record improvements, including in our Regional Sales, Service and Parts Personnel rankings. However, scores continued to increase in the categories of Ford Motor Credit Company Capability, Senior Management Effectiveness, Dealer Communications, and Marketing and Vehicle Incentives.

Related Links

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- Dealers

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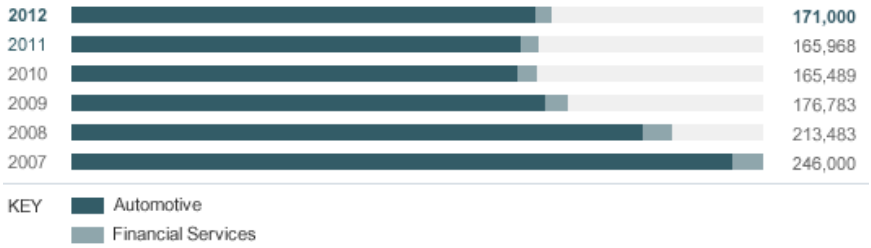
C. Employment by Business Unit

Average number of people employed



	2007	2008	2009	2010	2011	2012
Automotive	235,000	203,316	168,610	158,470	159,540	165,000
Financial Services	11,000	10,167	8,173	7,019	6,428	6,000
Total	246,000	213,483	176,783	165,489	165,968	171,000

Reported to regulatory authorities

Notes to Data

These employee numbers do not include dealer personnel; 2009 employee numbers have been adjusted to reflect the new accounting standard on the deconsolidation of many of our variable interest entities.

Related Links

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- Employees

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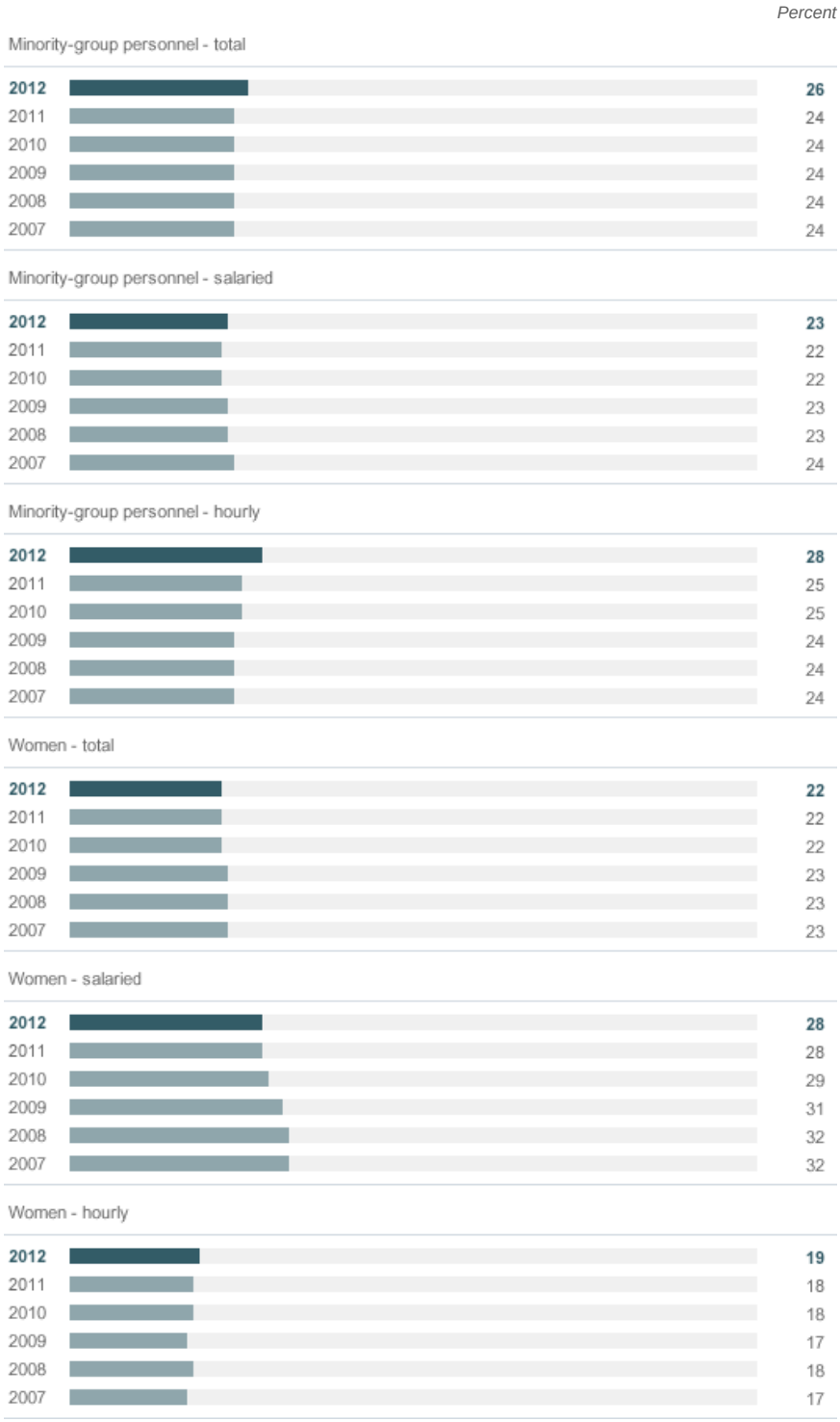
D. U.S. Employment of Minority-group Personnel and Women at Year-end



	2007	2008	2009	2010	2011	2012
Minority-group personnel – total	24	24	24	24	24	26
Minority-group personnel – salaried	24	23	23	22	22	23
Minority-group personnel – hourly	24	24	24	25	25	28
Women – total	23	23	23	22	22	22
Women – salaried	32	32	31	29	28	28
Women – hourly	17	18	17	18	18	19

Reported to regulatory authorities

Notes to Data

To align with the 2003–2007 reported data, 2008 data has been modified to reflect the total Company. Previously, 2008 data reported Ford Automotive data only.

Related Links

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» Diversity and Inclusion

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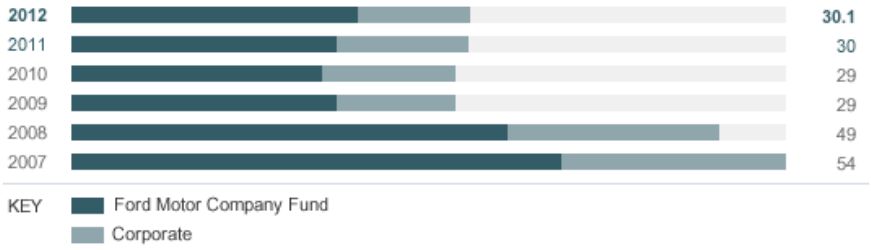
E. Charitable Contributions

$ million



	2007	2008	2009	2010	2011	2012
Ford Motor Company Fund	37	33	20	19	20	21.6
Corporate	17	16	9	10	10	8.5
Total	54	49	29	29	30	30.1

Related Links

This Report:

» Investing in Communities

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F. Volunteer Corps

Thousand volunteer hours

2007	2008	2009	2010	2011	2012
86	100	100	112	110	115

Related Links

This Report:

- Ford Volunteer Corps

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  - Engagement and Community
  - Workplace Safety
- Voice: Cyndi Selke

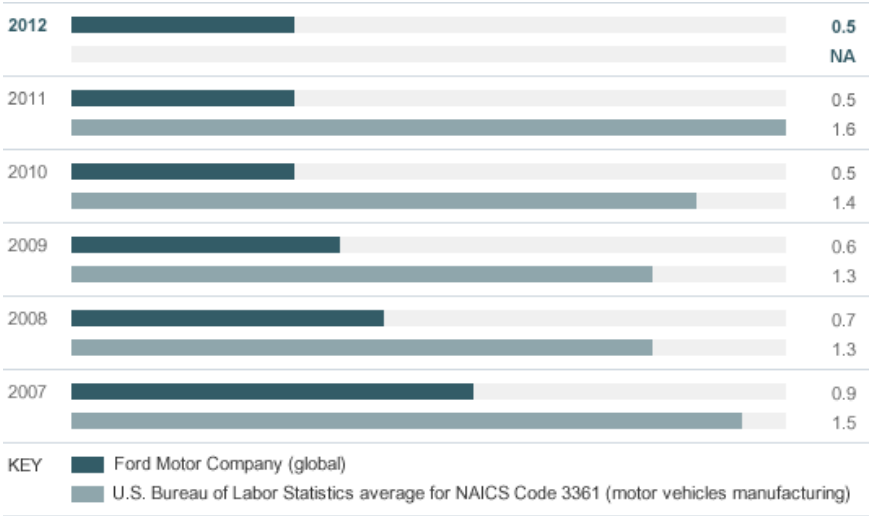
Data:

Workplace Safety

DATA ON THIS PAGE

A. Global Lost-time Case Rate (per 100 Employees)

Cases with one or more days away from work per 200,000 hours



	2007	2008	2009	2010	2011	2012
Ford Motor Company (global)	0.9	0.7	0.6	0.5	0.5	0.5
U.S. Bureau of Labor Statistics average for NAICS Code 3361 (motor vehicles manufacturing)	1.5	1.3	1.3	1.4	1.6	NA

Related Links

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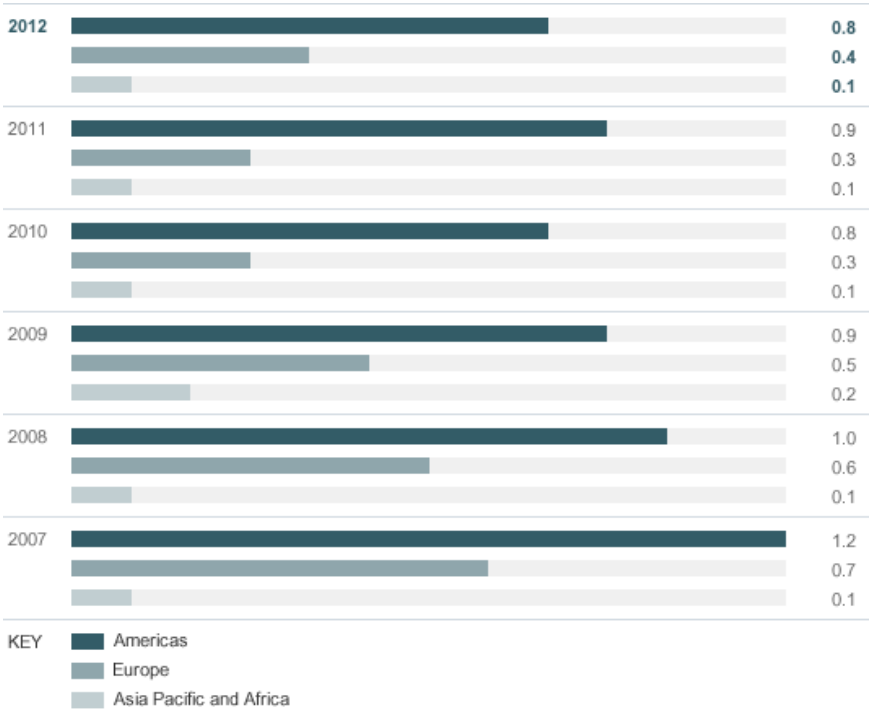
B. Lost-time Case Rate by Region (per 100 Employees)

Cases with one or more days away from work per 200,000 hours



	2007	2008	2009	2010	2011	2012
Americas	1.2	1.0	0.9	0.8	0.9	0.8
Europe	0.7	0.6	0.5	0.3	0.3	0.4
Asia Pacific and Africa	0.1	0.1	0.2	0.1	0.1	0.1

Reported to regulatory authorities

Related Links

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» Workplace Health and Safety

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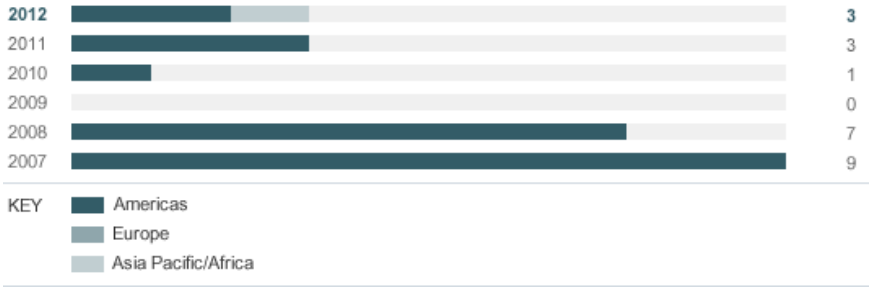
C. Workplace Health and Safety Violations

Number of violations



	2007	2008	2009	2010	2011	2012
Americas	9	7	0	1	3	2
Europe	0	0	0	0	0	0
Asia Pacific and Africa	0	0	0	0	0	1
Total	9	7	0	1	3	3

Related Links

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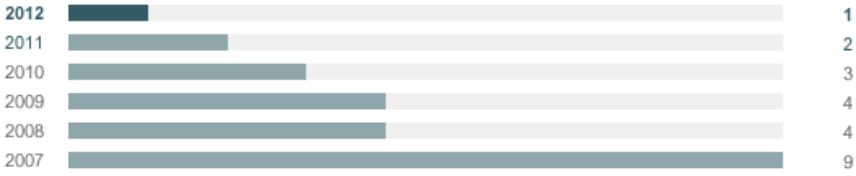
D. Global Fatalities

Number of fatalities



2007	2008	2009	2010	2011	2012
9	4	4	3	2	1

Notes to Data

Global fatalities data include Ford employees and contractors.

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People

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- Voice: Cyndi Selke

Cyndi Selke

Executive Director
Human Resources for the Americas
Ford Motor Company

This is an exciting time for our Company, especially when it comes to recruiting. In early 2013, we announced plans to hire 2,200 salaried workers. The last time we hired that many employees in one year was in 2000.

One of the challenges, from a human resources perspective, is getting our recruiting machine back up and running at a pace that we have not experienced in more than a decade. With the economy recovering in North America, companies – and especially major automakers and key automotive suppliers – are competing for talent. We have increased our presence on college campuses, and we're doing much more with social networking to attract early-career candidates.

However, most of the individuals we're hiring are experienced workers – engineers and information technology specialists in particular. So the question becomes – where do you go to find them? We're hosting virtual career fairs and leveraging social media sites to reach out to the best people.

Among current Ford employees, one of our primary areas of focus is employee development. To thrive in this economic environment, we must develop our employees so they have the skills to succeed and the desire to continue working for Ford Motor Company. Our attrition rate is very low, but that doesn't mean that we aren't constantly thinking about how to retain our employees.

Our Employment Value Proposition (EVP) – simply defined as why people choose a given employer and then stay with that employer – is based on three core elements: our corporate reputation ("Great Products, Strong Business and Better World"); our global brand promise of "Go Further" (which defines who we are and what we do); and a skilled and motivated team (focusing on working together, employee development, leadership quality, compensation and benefits, and worklife flexibility). These are the elements that make Ford a great place to work.

Every interaction between a leader and an employee is an opportunity to strengthen the value of working at Ford. Defining and strengthening our EVP will improve our ability to attract, engage and retain prospective and current employees. The ONE Ford plan is the driver for realizing the core elements of our EVP, and an effective EVP becomes an enabler for the ONE Ford plan.

Of course, when we talk about skills development, we're not just talking about our current workforce. We also must look ahead to the workforce of the future. One way we're getting involved is through school-based programs that promote science, technology, engineering and mathematics – otherwise known as STEM initiatives. We simply must get high school students more interested in these areas so we can be sure we have a viable pool of candidates for the years to come.

As strong as we are in America right now, we must remember that our European operations are having a difficult time and are going through hardships similar to what we experienced in the U.S. five years ago. As a global company, when one of our regions struggles, we all struggle – that's one outcome of the ONE Ford approach. So, we're taking what we learned from our North American restructuring and applying those lessons to Europe.

Despite the difficulties in Europe, I see so much enthusiasm from Ford's workforce today – enthusiasm around our products, our leadership and what the ONE Ford plan is delivering. Taken in total, these elements form the basis for why people come to Ford and stay at Ford. You can't have great products if you don't have a company that cares about its people and about ethics.

Related links

This Report

- "Going Further"

You have to have an engaged team to deliver results. If you don't have the hearts and minds of your employees, then you can't succeed. Employees today want to be part of something that's bigger than themselves. They want to work for a company that makes products that are safe and products that are green. In other words, they want to make products that our customers want and deserve. So much of what we do today at our Company resonates with our employees. But it all starts with the product, and I've never seen so much excitement around what we're building.

There's nothing better than growing, and we're growing with exciting products around the world. I never want to go back to the place where we were five years ago – it's not something we ever want to repeat.

Ford Around the World

Our global vision emerges from a deep understanding of what drives people in local markets.

Read about our regions:

South America › | Europe › | Asia Pacific and Africa ›

Around the world, Ford continues to go further by reducing the environmental impact of our products and facilities, supporting positive social change and ensuring economic viability for long-term growth. The success of ONE Ford is powered by a commitment that's global in scale.

That is why we continue to highlight key regional sustainability initiatives in their own sections of our full report.

Our business is organized into four regional segments: North America, South America, Europe, and Asia Pacific and Africa. North America and Europe are our largest markets.

Despite the Company's financial progress, the business environment in Europe remains challenging, with industry-wide sales hitting a nearly 20-year low in 2012. In response, we outlined a European transformation plan, including actions to increase cost efficiencies, address manufacturing overcapacity and strengthen our brand.

The Asia Pacific and Africa region is our fastest-growing market. China and India, in particular, are expected to continue to experience rapid and substantial growth in the next 10 years. To meet this growing demand, we will bring 50 new vehicles and powertrains to the region by mid-decade. We also are growing our dealer network; building seven new, state-of-the-art, highly flexible manufacturing facilities; and significantly expanding our research and engineering center in Nanjing, China.

In South America, we currently are launching a new global product lineup. Brazil and Argentina are our highest-volume markets in this region.

Sustainability highlights from our regions include the following:

- In Asia, the two new plants we opened in 2012 – the Changan Ford Automobile Assembly Plant 2 in Chongqing, China, and the Ford Thailand Manufacturing Plant in Rayong, Thailand – use the "Three-Wet" high-solids paint process. This revolutionary, environmentally friendly technology was piloted in 2007 at the Ohio Assembly Plant in the U.S. and has since been expanded globally to plants in Chennai, India, Cuautitlán, Mexico, and Craiova, Romania, as well as elsewhere in the U.S. The Three-Wet technology improves paint quality, depth and durability while significantly reducing volatile organic compounds, carbon dioxide (CO_2)

Our global vision emerges from a deep understanding of what drives people in local markets.

Reducing Emissions in Asia

In Asia, our "Three Wet" paint process is improving paint quality and reducing VOCs, CO_2 emissions and waste.

Fuel-Efficient Products in South America

Ford's global vehicle line with advanced flex-fuel technology

emissions and waste. We will be expanding our Three-Wet capacity to more plants globally in the years to come.

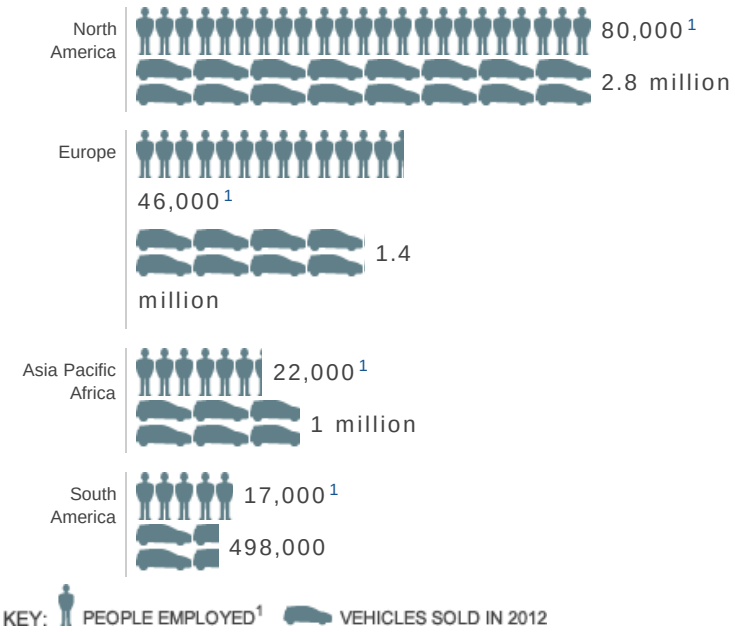
- In Europe, the latest entry in the EcoBoost® family of gasoline engines – the 1.0L EcoBoost – set a new benchmark for downsized engines. Launched in the Ford Focus in early 2012, the 1.0L EcoBoost was named “2012 International Engine of the Year” by a panel of 76 journalists from 35 countries. This engine also is available on the Ford C-MAX and the Ford Fiesta, Europe’s best-selling small car in 2012. In 2013, several additional vehicles will launch equipped with Ford EcoBoost gasoline engines, including the Ford Kuga, Fiesta ST, Transit and Tourneo Connect, and EcoSport.

- In South America in 2012, we launched several new fuel-efficient products. In Brazil, for example, we launched the new Ford Fusion with a 2.0L EcoBoost engine. Also in Brazil, Ford produces a global vehicle line with advanced flex-fuel technology, enabling the use of locally produced ethanol.

allows the use of locally produced ethanol.

Discover more about our global organization by visiting our website.

Our Regions at a Glance



1. As of year-end 2012. Does not include Ford Motor Credit employees or our unconsolidated joint ventures.

Ford Asia Pacific and Africa

Our Asia Pacific and Africa (APA) region encompasses 11 markets – Australia, New Zealand, Japan, China, Taiwan, India, Thailand, Indonesia, the Philippines, Vietnam and South Africa – on three continents. The fastest-growing markets for automobiles are in rapidly developing countries like China and India.

22,000
people employed in Asia Pacific and Africa[1]

1 million
vehicles sold in Asia Pacific and Africa in 2012

We expect 60 to 70 percent of our growth in the next 10 years to come from the Asia Pacific and Africa region. Accordingly, we have increased (and are planning to increase further) our dealer networks and manufacturing capacity in the region. For example, we are building seven new state-of-the-art, highly flexible manufacturing facilities as part of our plan to have production capacity of approximately 2.8 million vehicles in the region by mid-decade. We are also significantly expanding our research and engineering center based in Nanjing, China.

2012 Performance Highlights and Awards

In the past year, Ford:

- Achieved record revenue, wholesales and market share in Asia Pacific and Africa. Ford Asia Pacific and Africa sold more than 1 million vehicles for the first time, a 15 percent increase from 2011, and recorded $10 billion in revenue, also a record. In the fourth quarter of 2012, Ford Asia Pacific and Africa increased market share from 2.8 percent to 3.4 percent, a quarterly record for the Company in the region.
- Continued the largest and fastest manufacturing expansion in more than 50 years, adding capacity to support growth plans. Our joint venture, Changan Ford Automobile (CAF),[2] expanded its passenger car assembly plants in Chongqing, China, and we have recently opened the Ford Thailand Manufacturing Plant in Rayong, Thailand. Overall, Ford is building seven new plants – five in China and two in India – as part of our plan to have production capacity of 2.8 million vehicles in the region by mid-decade.
- Introduced our new Thai-built Ford Focus in our ASEAN[3] markets, which will be available with SYNC®, Blind Spot Information System, Active Park Assist and Active City Stop.
- Announced plans to bring Lincoln to China.
- Achieved 100 percent water recycling and zero wastewater discharge at our plant in Chennai, India, by implementing a state-of-the-art Zero Liquid Discharge system. The Silverton Assembly Plant in South Africa commenced operation of a state-of-the-art, $2.5 million wastewater treatment plant. The treatment plant increases the amount of water that can be reused by up to 15 percent.
- Continued the Ford Driving Skills for Life program in eight markets, providing free training to 13,500 licensed drivers in China, India, Taiwan, Thailand, the Philippines, Indonesia, Vietnam and South Africa.
- Launched the SUMURR Maternal and Child Health pilot project in Tamil Nadu, India, a public/private partnership to improve the delivery of health care services to underserved mothers and children by improving the mobility and connectivity of village health nurses.

Awards

- In Australia, our 1.0L EcoBoost® engine won the 2012 *Fleet World* Honours Innovation award, given by the publishers of *Fleet World* magazine.
- Ford Philippines received an award for health and safety in the 8th Annual Health and Safety

Awards given by the Philippines Department of Labor and Employment. Ford Philippines was recognized for its holistic approach to occupational health and safety, and for having in place standard programs and processes, including safety standards and procedures, safety trainings, standardized work procedures, visual factory systems, general safety promotions, health and wellness programs, and fire safety assessments, as well as corporate citizenship programs.

- In Taiwan, Ford Lio Ho received a Corporate Role Model Award from the local government, for being a leader in providing a comfortable, encouraging and innovative work environment for employees. The award is also based on health and safety practices, employee development and training, compensation and benefits, gender equality and employee support programs.
- Ford Australia won two coveted Australia's Best Cars awards in 2012, given by Australia's top motoring organizations. The Ford Falcon G6 with EcoBoost was voted Best Large Car Under $60,000, and the six-speed automatic Focus Titanium turbo-diesel was voted the country's Best Small Car Over $35,000.
- In the Philippines, the Ford Explorer 3.5L AWD was named Car of the Year.
- The Ford Ranger was named a Top 12 Best Buy for 2012 by *CAR Magazine* in South Africa, and Ute of the Year for 2012 by *Delivery Magazine* in Australia.
- The Ford Focus was named New Zealand Car of the Year by New Zealand Motoring Writers' Guild.

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1. As of year-end 2012. Does not include Ford Motor Credit employees or our unconsolidated joint ventures.
2. Our Chinese joint venture was formerly known as CMFA and recently restructured as Changan Ford Automobile Corporation, Ltd. (CAF) to increase our ownership percentage.
3. Association of Southeast Asian Nations

Dave Schoch

President
Ford Asia Pacific and Africa

Ford Asia Pacific and Africa:

Welcome

Asia Pacific and Africa is Ford's fastest-growing region. We expect 60 to 70 percent of Ford's growth in the next 10 years will come from this part of the world. As with many rapidly expanding economies, the region is also faced with mounting challenges related to the environment – air quality, water scarcity and hazardous waste, to mention a few. Ford plans to be part of the solution to these sustainability challenges; it is vital for our customers, our team and our business.

When we introduce 50 new vehicles and powertrains to the region by mid-decade, we will significantly expand the availability of the EcoBoost® engine, which improves fuel efficiency by 20 percent and reduces carbon dioxide (CO_2) emissions by 15 percent

We are currently pursuing Ford's largest and fastest manufacturing expansion in more than 50 years to support our aggressive growth plan for the Asia Pacific and Africa region. At the same time, we are investing heavily in green technologies to reduce the environmental impact of our products and facilities, help local communities and make Ford a great place to work for our employees.

We are committed to offering great products with leading fuel efficiency in the region. When we introduce 50 new vehicles and powertrains to the region by mid-decade, we will significantly expand the availability of the EcoBoost® engine, which improves fuel efficiency by 20 percent and reduces carbon dioxide (CO_2) emissions by 15 percent. The innovative EcoBoost powertrain is being well received by customers. In China in 2012, 66 percent of the Mondeos sold and 98 percent of the Edges sold were equipped with the EcoBoost engine. In 2013, we will expand the EcoBoost range in the region to include 1.0L, 1.6L, 1.5L and 2.0L engines, and we will more than double the number of vehicles available with EcoBoost engines as compared with 2012. In fact, EcoBoost engines will be available in every market in our region.

In our plants, we are using cutting-edge green manufacturing technologies and processes to save water and energy and reduce emissions and waste to landfill. For example:

- Of the eight global Ford plants that use the industry-leading, environmentally friendly "Three-Wet" paint process, three are in Asia Pacific and Africa. The Three-Wet process has helped Ford reduce CO_2 emissions by 15 to 25 percent and volatile organic compound (VOC) emissions by 10 percent at those facilities. More new plants in our region will also adopt this process.
- In 2012, the Ford Geelong Engine and Stamping Plant in Australia installed a new, water-efficient cooling system in its compressor house. The system utilizes air cooling most of the time and uses 80 percent less water than conventional evaporative cooling towers.
- The Chennai assembly and engine plants in India saved more than 4.72 million gallons of water in the last five years by adopting various water conservation methods and developing state-of-the-art facilities. The assembly plant now recycles 100 percent of its wastewater.
- Our Jiangling Motors Corp. assembly and engine plants in China, Chennai assembly and

engine plants in India, Ford Lio Ho Assembly plant in Taiwan, and Ford Thailand Manufacturing in Thailand have all already achieved zero waste to landfill.

We are also committed to programs in each of our markets that help to build a better world. For example:

- We have been offering the Driving Skills for Life program for six consecutive years, providing free training to licensed drivers to help improve road safety and fuel efficiency. In 2012, we trained 13,500 people, bringing the total number of people trained in the region to more than 63,000.

- Our employees have taken part in the Ford Global Week of Caring volunteering initiative for seven consecutive years. In 2012, more than 3,800 employees across the region worked on 85 projects during the Global Week of Caring, with a total volunteer time of more than 21,000 hours.

- In 2013, we will strengthen our employee volunteering programs to further help local communities.

Ford has a long history of providing great products and value to society in a way that builds a strong business and a better world. We are committed to continuing that legacy here in Asia Pacific and Africa.

Dave Schoch
President
Ford Asia Pacific and Africa

Ford Asia Pacific and Africa:

Financial Health

Ford experienced strong sales and growth in many of our regional markets in 2012. The Asia Pacific and Africa (APA) region is our fastest-growing market, and we continue to invest in this region for further growth.

China will remain the largest car market in the world for the foreseeable future, and we estimate India will become the third-largest market in the world in the coming decade. By 2020, total annual vehicle sales in the Asia Pacific and Africa region will likely top 50 million vehicles (with some 30 million of them in China[1]), and one in every three Ford vehicle sales globally will take place in the APA region. To keep pace with this enormous growth, we are building new plants and expanding existing ones, hiring workers, building our dealer networks and further developing our supply chain across China, India and Thailand. These actions will help us reach the goal of increasing worldwide sales to about 8 million vehicles per year by mid-decade.

Ford's wholesale sales in the APA region were up 15 percent in 2012 compared to 2011, totaling 1.033 million units. Our overall market share for the region increased to 2.8 percent in 2012 from 2.7 percent in 2011.

APA at a Glance

- Total Asia Pacific and Africa investment = $6.7 billion by 2015[2]
- New plants under construction in China = 5
- New plants under construction in India = 2
- New Ford vehicles and powertrains to the region = 50 by mid-decade
- New salaried jobs to the region = 3,000 by 2015

We are investing more than $6.7 billion[3] in the APA region. Our operations include the following:

Joint Venture Facilities

- Our joint venture Changan Ford Automobile (CAF) already operates two passenger car vehicle assembly plants in Chongqing. CAF has two more assembly plants under construction – Chongqing 3 and Hangzhou – and two powertrain plants under construction, including an engine and transmission plant.
- Our commercial vehicle joint venture, Jiangling Motors Corp. (JMC), is investing $300 million for an assembly plant in Nanchang, China, for Ford- and JMC-branded vehicles.

Ford-Owned Facilities

- We broke ground in 2011 on a $1 billion integrated manufacturing facility in Sanand, Gujarat, India. The new facility, which includes an assembly plant and an engine plant, will create 5,000 jobs and will initially be able to produce 240,000 vehicles and 270,000 engines per year, starting in 2015.
- In Thailand, we have invested $450 million in a new plant in Rayong province that builds the Focus for Thailand and other Asian markets.
- In early 2012, we announced we will be investing $142 million to build a new compact SUV – the EcoSport – at our plant in Chennai, India. We expect to roll out the first EcoSports in mid-2013 for Indian consumers.
- We have invested $72 million to increase production capacity at our Chennai engine plant.

Small cars account for 60 percent of APA industry sales volume and are anticipated to continue to

More than
$6.7 billion
invested

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- Focus on Asia
- Joint Venture Expansion in Chongqing
- Saving Lives in Rural India

benefit from favorable government policies. The Ford Focus was the best-selling nameplate in China in 2012. For the full year, sales of the Focus in China totaled 296,360 vehicles, more than any other domestically manufactured passenger car, according to industry consultancy IHS Automotive.

We anticipate further success with the introduction of the all-new EcoSport in 2013. The EcoSport is based on Ford's global B-car platform, like the Fiesta, and was developed from a previous-generation model that has proved extremely popular in South America since its launch in 2003. The new EcoSport will be sold in more than 100 markets worldwide. It will initially be built in India, China, Thailand and Brazil.

At the same time, we know that our long-term success in these developing and revitalizing economies will depend on our offering new types of mobility solutions that are sustainable and tailored to the unique needs of these markets. Our Blueprint for Mobility is aimed at ensuring we do just that. During 2012, for example, we kicked off a novel project in the region of Chennai, where we have manufacturing operations. The project, called SUMURR (Sustainable Urban Mobility with Uncompromised Rural Reach), is using our vehicles and our technology to address critical social needs, such as maternal health care. The pilot program in the remote hills of rural India helped 41 pregnant women give birth to healthy babies.

For a discussion of our global economic impact and financial health, please see the Financial Health section, including a Focus on Asia and a case study on our joint venture expansion in Chongqing, and more about our SUMURR project.

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1. IHS Automotive
2. In U.S. dollars for the time period of 1995 through 2015.
3. In U.S. dollars for the time period of 1995 through 2015.

Ford Around the World

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Ford of Europe

Ford South America

Ford Asia Pacific and Africa:

Climate Change and the Environment

Ford is committed to minimizing the environmental impacts of our vehicles and operations, including reducing our contribution to climate change. This commitment is guided by goals and strategies. We have a science-based strategy to reduce greenhouse gas (GHG) emissions from our products and processes, based on the goal to stabilize carbon dioxide (CO_2) concentrations in the atmosphere. We have also made a commitment to deliver the most fuel-efficient vehicles in every market in which we participate.

We're delivering on this commitment in our Asia Pacific and Africa (APA) region by introducing small cars, fuel-efficient gasoline engines and alternative-fueled vehicles. In China, we have announced that Ford will bring 20 new powertrain products to the country and improve fuel economy by up to 20 percent (compared to 2010) by 2015.

To help accomplish this, we are introducing our fuel-efficient EcoBoost® engines across Asia, and they are being well received by customers. In China, 66 percent of Ford Mondeo vehicles sold in 2012 were equipped with the EcoBoost engine. In early April 2013, we announced that the first application of the 1.5L EcoBoost engine will be the new Mondeo in China. In June 2012 we launched the Ford Edge in China with a 2.0L EcoBoost engine; sales of the EcoBoost-powered Edge accounted for 99 percent of total Edge sales in China from June to December 2012. In Australia, the EcoBoost is now available on the Focus ST and will be in the all-new Ford Kuga. Ford Australia launched the Mondeo with EcoBoost in 2011 and the Falcon with EcoBoost in 2012.

We have also launched the award-winning 1.0L EcoBoost in the region on the all-new EcoSport and new Fiesta. (The 1.0L EcoBoost won the "2012 International Engine of the Year" award from 76 journalists around the world.) The 1.0L EcoBoost made its ASEAN[1] debut in the new Fiesta at the Bangkok International Motor Show in March 2013. And, the EcoSport in India will be powered by the 1.0L EcoBoost. This will make Ford the first manufacturer in India to launch an SUV with a 1.0L gasoline engine. (Read more about the EcoBoost engine in our Climate Change section.)

In India, in addition to our EcoBoost offerings, we continue to introduce vehicles with other engines that have excellent fuel economy. The Fiesta, for example, – powered by 1.5L Ti-VCT gasoline and TDCi diesel powertrains developed for India – delivers class-leading fuel economy and reduced CO_2 emissions compared to the outgoing model. This builds on fuel-economy leadership established with the Ford Figo, launched in March 2010, which has two engine options: a best-in-class, fuel-efficient 1.4L TDCi diesel and a very competitive 1.2L gasoline engine. These vehicles are highly significant to our success in India, as our studies show fuel economy to be the most important criteria in purchase consideration in that country.

As a technology leader in biofuels, Ford will also continue to develop and introduce flex-fuel vehicles that meet market needs throughout the APA region. All current Ford models are compatible with ethanol blends of 10 percent (E10), with the Ford Focus and Ford Escape compatible with ethanol blends of 20 percent (E20).

We are also addressing non-CO_2 tailpipe emissions in the region. Since 2010, our new gasoline-fueled passenger vehicles have been designed to comply with China Stage IV requirements (i.e., non-CO_2 tailpipe emission regulations based on European Stage IV standards). China plans to implement standards based on the most recent European Stage V standards starting in 2013 in large cities. Korea and Taiwan have adopted very stringent U.S.-based standards for gasoline vehicles, with European-based standards for diesel vehicles. Japan, which has unique standards and test procedures, began implementing more stringent standards in 2009. Ford is working to comply with all of these standards using a variety of approaches, including on-board diagnostics and after-treatment technologies.

In terms of facility-based emissions, we monitor greenhouse gas emissions at our plants in China and Taiwan, and we were the first automaker in China to voluntarily report greenhouse gas emissions at our plants. One way we're reducing greenhouse gas emissions is by bringing new

We are bringing 20 new powertrain products to China and improving fuel economy by up to

20 percent

by 2015

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- EcoBoost

technology into the plants, such as the “Three-Wet High Solids” paint process, which allows multiple coats of paint to be applied without having to bake each one dry first. This saves an enormous amount of energy in the drying process, reduces CO_2 emissions and cuts the amount of waste chemicals produced. The Chongqing 2 and Ford Motor Thailand plants used this and other initiatives to reduce the carbon footprint of their manufacturing. Ford’s upcoming new integrated facility in Sanand, Gujarat, in northwest India will employ the most efficient and environmentally friendly technologies, including Ford’s rotational dip technology and the Three-Wet process, dramatically improving paint quality, depth and durability, as well as significantly reducing volatile organic compound emissions, CO_2 emissions and waste.

For a discussion of our global climate change impacts, policies and commitments, please see the Climate Change and the Environment section.

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1. Association of Southeast Asian Nations

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Ford of Europe

Ford South America

Ford Asia Pacific and Africa:

Water

For many years, we have demonstrated our commitment to water issues primarily through our own operations, focusing on water efficiency, effluent quality and water reuse. We also are committed to moving beyond our own fences to address water issues within our communities of operation. We are working with stakeholders to better understand issues around water accessibility and sanitation, in water-stressed communities especially.

In the Asia Pacific and Africa (APA) region, Ford India's Chennai manufacturing facility has been able to conserve water by adopting various water conservation methods and implementing state-of-the-art systems such as a Membrane Bio Reactor and a Zero Liquid Discharge system. The Chennai plant recycles 100 percent of its wastewater and is also "Best in Ford" in terms of water use per vehicle. At our manufacturing plant under construction in Sanand, Gujarat (India), the focus is already on becoming a zero-water-discharge site. One hundred percent of the wastewater generated will be treated on-site and re-used in the production process or for irrigation of the site's green spaces.

In China, the two vehicle assembly plants operating in Chongqing are recycling considerable amounts of wastewater every day. The plant environmental teams closely monitor water usage and report any increases to plant management. This allows plant personnel to quickly investigate and correct any water losses as well as implement continuous improvement programs. In addition, both plants have invested in advanced water treatment equipment – including physical-chemical systems, membrane biological treatment and reverse osmosis treatment – to maximize water reuse. After on-site purification, the water is reused again in vehicle production processes, significantly reducing the plant's demand for fresh water. The average amount of water recycled at Chongqing 1 and Chongqing 2 on a daily basis is 100,000 gallons and 65,000 gallons, respectively.

We are committed to mobilizing opportunities for communities in the developing world through the provision of clean water. Specifically, we're investing in community water stewardship projects around the world, especially in areas where access to potable water is limited. Projects vary by location. In Cambodia, Ford and our long-time partner, RM Asia, provided $70,000 to construct dozens of community water wells in villages where residents lack access to clean, potable water. The new wells, which are expected to be completed by the end of 2013, will also provide residents with sufficient water supplies to irrigate their fields. Ford India recently helped to refurbish two schools in villages near our plant in Maraimalai Nagar, a suburb of Chennai. The refurbishment included new sanitation facilities and drinking water fountains.

Our Ford Motor Company Volunteer Corps, meanwhile, is placing a priority on water-based community projects during our Global Week of Caring and Accelerated Action Days. In 2012, the Ford Fund supported 19 water-related projects in China, Indonesia, Thailand, the Philippines, India, Germany and South Africa. In arid southwest China, 60 Ford employees from Nanjing teamed up with The Amity Foundation to help eight families build individual water cellars to capture water in the rainy season. In Indonesia, Ford employees helped to install a machine that processes salt water into clean, potable water for 5,000 area residents. In the Philippines, Ford volunteers helped construct water collection stations for 250 villagers.

For a discussion of our global commitment to water issues, please see the Water section.

Our Chennai plant recycles

100 percent

of its wastewater

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Ford of Europe

Ford South America

Ford Asia Pacific and Africa:

Vehicle Safety

Ford remains a global leader in vehicle safety. We aim to give customers peace of mind and make the world safer by developing advanced safety technologies and making them available across a wide range of vehicles.

The Ford Fiesta is the first car in its segment to earn top crash test ratings in each of the world's largest auto markets that perform safety testing – i.e., the U.S., China, ASEAN[1] and Europe. The Ford Focus and the Ford Mondeo also have received five-star ratings in C-NCAP testing in China. And, the Ford Kuga earned a five-star ANCAP rating in Australia.

We have developed an array of programs and technologies that help to encourage safer behavior on the roadways for both experienced and novice drivers. For example, Ford Driving Skills for Life (DSFL), Ford's driver education program, demonstrates our commitment to help new drivers to improve their motoring skills. For Asia Pacific and Africa, the Ford DSFL program was customized to address the higher average age of beginner drivers in the region, as well as the unique driving environments within each market. The program also places equal emphasis on safe driving and eco-driving, as customers in the region are interested in both.

Ford launched the DSFL program in Asia Pacific and Africa in 2008 with a "train-the-trainers" workshop in Bangkok, Thailand. At the workshop, professionals from Germany trained representatives from the Philippines, Vietnam, Thailand and Indonesia. In 2009 and 2010, we held train-the-trainers workshops in Shanghai, China, and Chennai, India, and continued with the successful roll-out of the program to mainland China, Taiwan, India and South Africa.

In 2012, Ford DSFL trained 13,500 licensed drivers in Asia in mainland China, India, Indonesia, Taiwan, Thailand, Vietnam, the Philippines and South Africa. We expect to train another 14,000 in 2013. More than 63,000 people have been trained in the Asia Pacific and Africa region since the program began.

The Ford DSFL training addresses the local driving environment and specific needs of drivers in each Asian market. In China, for example, Ford DSFL added a segment on the use of child safety seats after a new regulation went into effect there. In Indonesia, Thailand and several other Asia countries, sessions were added tailored for female drivers. In Vietnam, Ford DSFL launched a "No Honking" campaign to reduce the adverse effects on road safety of the prevalent and inappropriate use of vehicle horns. Ford DSFL also launched campaigns in India and China inviting drivers to "pledge to drive safe;" this campaign will expand into more countries in 2013.

See the Vehicle Safety and Driver Assist Technologies section for more on our vehicle safety technologies and activities.

Trained
13,500
licensed drivers in Asia

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Ford of Europe

Ford South America

Ford Asia Pacific and Africa:

Supply Chain

Ford's suppliers are critical allies in helping us to achieve success in the marketplace and meet our sustainability goals.

The basis of our work with suppliers is the Ford Code of Human Rights, Basic Working Conditions and Corporate Responsibility, which applies to our own operations as well as our $90 billion supply chain. The Code addresses workplace issues such as working hours, child labor and forced labor, as well as nondiscrimination, freedom of association, health and safety, the environment and other issues.

We work to ensure that Ford and our suppliers have management systems in place to mitigate potential risks, ensure continuity of supply and improve the overall sustainability of the complex global automotive supply chain. Our aim is to leverage our supply chain – and our industry – to make a positive impact in the markets in which we do business.

We take a three-pronged approach to supply chain sustainability:

- Building strong relationships with suppliers and engaging strategic suppliers
- Developing shared commitment and supplier capability
- Collaborating within the automotive industry to develop common approaches to sustainability issues

In 2012, the Automotive Industry Action Group (AIAG) jointly sponsored (with participating OEMs) supplier training sessions in Argentina, China, Mexico, Russia, Thailand, Turkey and Venezuela. More than 325 Ford suppliers attended these classroom sessions. This brings the global total for trained Ford suppliers to nearly 2,100. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with the AIAG and other automakers.) Because attendees are required to subsequently cascade the training and expectations to the entire factory population and suppliers, these trainings indirectly reach even more companies and individuals.

In 2013 we plan to conduct additional supplier training sessions in conjunction with the AIAG in Brazil, Mexico, Romania, South Africa and Turkey. The intent is, once again, to increase the scope of impact of the training and push working conditions expectations further down the supply chain.

For a discussion of our global commitment to supply chain sustainability and detail on the status of our working conditions assessments, please see the Supply Chain section.

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» Supply Chain

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Ford of Europe

Ford South America

Ford Asia Pacific and Africa:

People

Our employees are crucial to delivering our vision of building great products that contribute to a better world.

In Thailand, our employees had the opportunity to test drive the all-new Ford Focus to build awareness and excitement for the launch. The full-day immersion included classroom sessions and specially tailored test-drive stations designed to highlight specific Focus features.

Throughout the APA region, Ford has made a positive impact on communities and the environment through initiatives such as the Global Week of Caring, the annual Conservation and Environmental Grants China Program (CEGC) and the Ford Driving Skills for Life (Ford DSFL) program, which teaches drivers about fuel efficiency as well as safety.

Since Ford launched the CEGC program in 2000, for example, we have awarded more than $2.7 million in grants to hundreds of grassroots organizations and individuals to support environmental projects throughout China. Ford Motor Company Executive Chairman Bill Ford was in Shanghai to hand out the CEGC grants to winners in 2012 – the third time he has attended the CEGC award ceremony.

In Australia, Ford was the naming-rights sponsor of the annual Ford Rainforest Ride, a mass-participation road-cycling event that aims to encourage respect between vehicle owners and bike riders on the road, and educate them about safe driving habits. Hosted by Geelong's premier philanthropic organization, Give Where You Live, Ford's V8 racecar drivers Mark Winterbottom, Will Davison and David Reynolds took part in the Ford Rainforest Ride in February 2013. The event raised $70,000 for the charity.

See the Investing in Communities section for a full list of our Global Week of Caring and other volunteerism efforts in the APA region and elsewhere.

Workplace Health and Safety

The year 2012 marked the second year since 1918 in which we did not have an employee work-related fatality. Tragically, however, we did experience the fatality of a joint venture (JV) employee at our JV facility in Thailand. Our primary objective remains zero fatalities on Ford property. For a discussion of our global commitment to health and safety, please see the Workplace Health and Safety section.

For a discussion of our global commitment to our stakeholders, please see the People section.

$2.7
million in grants awarded

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Ford of Europe

Ford of Europe is responsible for producing, selling and servicing Ford-brand vehicles in 50 individual markets, and employs approximately 46,000 employees at its wholly owned facilities, or approximately 69,000 people when joint ventures and unconsolidated businesses are included.

46,000
people employed in Europe[1]

1.4 million
vehicles sold in Europe in 2012

Ford of Europe operations include a Ford Customer Service Division and 24 manufacturing facilities (15 wholly owned or consolidated joint venture facilities and nine unconsolidated joint venture facilities), as well as Ford Motor Credit Company. The first Ford cars were shipped to Europe in 1903 – the same year Ford Motor Company was founded. European production started in 1911.

2012 Performance Highlights and Awards

- The latest entry to the EcoBoost® family of gasoline engines set the new benchmark for downsized engines. The 1.0L EcoBoost launched in the Ford Focus in spring 2012 was awarded "2012 International Engine of the Year." In addition to the Focus, this engine is now available in the C-MAX and the Fiesta – the latter of which was Europe's best-selling small car in 2012. The EcoBoost 1.0 offers best-in-class carbon dioxide (CO_2) emissions of 99 g/km in combination with Auto Start-Stop.
- During 2013, additional vehicles will launch equipped with EcoBoost gasoline engines, including the Kuga (1.6L), Fiesta ST (1.6L), Transit and Tourneo Connect (1.0L) and EcoSport (1.0L).
- During 2012, 830 Ford employees each contributed up to 16 hours of their time (paid for by Ford) to local community projects, totaling 12,400 hours.

Awards

- Ford Motor Company won three out of a possible seven 2012 Euro NCAP best-in-class safety awards – more than any other manufacturer. Euro NCAP is Europe's largest independent authority on vehicle safety, and the awards reflect vehicle crash-test performance as well as the availability of advanced safety technologies. The new Kuga topped the SUV sector, the Transit Custom triumphed in the Business and Family Vans class, and the B-MAX was the joint winner in the small multi-purpose vehicle (MPV) category. Also in 2012, the new B-MAX, new Fiesta, new Kuga and new Transit Custom were each awarded a maximum five-star rating under Euro NCAP's new crash test scoring system. The Ranger and Focus retained the five-star ratings awarded in 2011, against more stringent 2012 requirements.
- We won an award from the European Logistics Association for our "Network Integrator," a logistics concept with Penske Logistics. It realizes savings of 25,000 truck kilometers and 10,000 tons of CO_2 each year, based on an assumption of 750,000 shipments per year.
- In Germany in early 2013, we received an "Engagement of the Year 2012" award from the state of North Rhine-Westphalia. This award honors Ford's Community Involvement Program in Germany as a role model for corporate citizenship.

1. As of year-end 2012. Does not include Ford Motor Credit employees or our unconsolidated joint ventures.

Stephen Odell

Executive Vice President and President
Europe, Middle East and Africa
Ford Motor Company

Ford of Europe:

Welcome

In Europe, despite the challenging economic conditions, we continue to make great progress toward our sustainability commitments – commitments that relate to our vehicles, our manufacturing sites and our engagement with local communities.

Ford's fuel-efficient 1.0L EcoBoost® gasoline engine – voted 2012's "International Engine of the Year" – will be available in eight Ford nameplates in Europe by the end of 2013. It will be joined by the Focus Electric, the Company's first zero-emission, all-electric car, in the summer of 2013. The Focus Electric will be the starting point for Ford's lineup of electrified vehicles in Europe; it will be joined next year by the C-MAX Energi plug-in hybrid, followed by the Mondeo Hybrid.

With our range of ECOnetic Technology models – all of which are leaders or among the very best in their class in terms of fuel economy – we are providing our customers with an increasing number of fuel-efficient diesel and gasoline-powered vehicles. Ford of Europe's vehicle-related carbon dioxide (CO_2) reductions to date contribute to the Company's efforts to meet its global target of reducing the CO_2 emissions of our vehicles by 30 percent by 2020.

In our manufacturing facilities this year, we will build on the sustainable strategies for water use, waste and emissions that we announced last year by outlining strategies for energy use and purchasing. Ford of Europe already employs an array of alternative energy sources at its manufacturing sites, including a major solar panel installation on the roof of our new European Parts and Distribution Centre in Cologne that opened in the last quarter of 2012 and could save 550 metric tons of CO_2 every year.

Our emissions-reduction efforts outside of manufacturing also have been recognized. For example, we were given an award for our "Network Integrator" logistics concept with Penske Logistics by the European Logistics Association. This initiative realizes savings of 25,000 truck kilometers and 10,000 tons of CO_2 each year, based on an assumption of 750,000 shipments per year.

In addition, we remain actively involved in the communities around all of our Ford sites in Europe. In so doing, we contribute to positive social and economic development, which benefits both our employees and other community members.

For us, sustainability is not just the right thing to do; it is also a core part of our business strategy. With smart and sustainable manufacturing solutions and an exciting selection of technologically advanced, fuel-efficient vehicles, we are putting in place the foundations that ensure our long-term business success in Europe.

Stephen Odell
Executive Vice President and President
Europe, Middle East and Africa
Ford Motor Company

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Ford of Europe:

Financial Health

Ford experienced strong sales and growth in many of our regional markets in 2012.

Despite overall Company financial progress in 2012, the business environment in Europe remains challenging, with industry-wide sales hitting a nearly 20-year low in 2012. In response, we outlined a European transformation plan, including actions to increase cost efficiencies, address manufacturing overcapacity and strengthen our brand.

For a discussion of our global economic impact and financial health, please see the Financial Health section.

Related links

This Report

- Financial Health
- Focus on Europe

Ford of Europe:

Climate Change, Environment and Water

Ford is focused on minimizing the environmental impacts of our vehicles and operations, including reducing our contribution to climate change.

We are committed to doing our share to prevent or reduce the potential for environmental, economic and social harm due to climate change. We have a science-based strategy to reduce greenhouse gas (GHG) emissions from our products and processes that focuses on doing our share to stabilize carbon dioxide (CO_2) concentrations in the atmosphere. We have also made a commitment to deliver the most fuel-efficient vehicles in every market in which we participate.

Ford of Europe continues to make significant strides toward our target of reducing CO_2 emissions from all of our vehicles. By 2012, we had already reached an average CO_2 emission level below 137 grams per kilometer (g/km), with 65 percent of our vehicles recording an average of around 121 g/km, or 5 g/km better than the target requested by European legislation for 2012.

EcoBoost Engines and ECOnetic Technology

In 2012 we introduced the new 1.0L EcoBoost® gasoline engine into Ford's lineup, joining the 1.6L and 2.0L EcoBoost engines. The 1.0L EcoBoost was named "2012 International Engine of the Year" by a panel of 76 journalists from 35 countries.

EcoBoost engines use turbocharging and direct-injection technology to produce levels of performance that are usually associated with larger-capacity engines. The 1.0L EcoBoost, for example, offers the power of a traditional 1.6L gasoline engine but with a CO_2 level as low as 109 g/km. This engine was launched in the Ford Focus in early 2012, making it the most fuel-efficient gasoline car ever offered by Ford of Europe. During 2012 the 1.0L EcoBoost was introduced in the C-MAX, the all-new B-MAX and the new Fiesta, achieving best-in-class CO_2 levels in those vehicles' individual segments.

We have also continued to expand the availability of our low-CO_2 ECOnetic variants of our vehicle lineup. In 2012, for example, we launched Ford's most fuel-efficient passenger car ever – the Ford Fiesta ECOnetic, offering fuel economy of 3.3L/100 km and with just 87 g/km of CO_2. This model includes a range of Ford technology features, including revised gear ratios; a special aeropack to improve aerodynamics (comprising undershield wheel deflectors and low rolling resistance tires); a variable oil pump; a more efficient air conditioner, cooling fan and alternator; as well as friction and combustion improvements in the engine. It also features Auto Start-Stop, smart regenerative charging, EcoMode and a shift indicator light.

The Fiesta ECOnetic was joined later in 2012 by the Focus ECOnetic, which emits just 88 g/km of CO_2. To reach this class-leading level, the Focus ECOnetic employs a specially calibrated 1.6L Duratorq TDCi diesel engine, combined with exclusive technologies like a lean NOx adsorbing trap and a water-cooled charge air cooler, as well as our Active Grille Shutter technology.

Electrification

In the summer of 2013, Ford will add its first all-electric passenger car to the successful Focus lineup in Europe by introducing the Ford Focus Electric. In coming years, based on our success with electrified vehicles in North America, we will introduce further electrified vehicles in Europe, including the C-MAX Energi and the Mondeo Hybrid.

In the U.K., Ford continues to work with Scottish and Southern Energy (SSE), the London Borough of Hillingdon and the University of Strathclyde on the U.K.'s Ultra Low Carbon Vehicle Fleet Demonstration (UKLCVD). The UKLCVD is collecting data on the performance of a fleet of 25 Transit Connect Electric vehicles, which are being driven by a mix of fleet and private users.

In Germany, Ford is working with 11 other partners on the colognE-mobil program, using a fleet of electrified vehicles – including Focus Electrics and C-MAX Energi plug-in hybrids – to conduct road testing. This program is part of a much larger research effort in several German cities that is partly

Average vehicle CO_2 emission level below

137 grams

per kilometer (g/km)

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- Electrification: A Closer Look
- Greening our Operations

funded by the German government and involves multiple automakers, utility companies, universities and technology partners.

We believe these kinds of collaborative efforts across sectors are essential for ensuring customer-focused products that provide the right value. They also help to ensure that the infrastructure is in place to support these types of vehicles.

Sustainable Manufacturing

In early 2012, Ford of Europe announced our five-year sustainable manufacturing strategies for water, landfill waste and emissions. The ambitious targets embedded in these strategies would see the average Ford vehicle using 30 percent less water and creating 70 percent less waste to landfill in manufacturing over the next five years.

Our Cologne, Genk and Saarlouis plants have already achieved zero waste to landfill. The remaining five Ford-owned sites in Europe are embarking on location-specific programs to drastically reduce, by as early as 2013, the four main waste areas that make up approximately 80 percent of our waste: paint sludge, municipal waste, grinding sludge and material filter waste. Our aim is to reduce average waste to landfill per vehicle from 5 kg in 2011 to 1.5 kg by 2016.

Our new water strategy is expected to drive a 30 percent reduction in manufacturing water use, which is equivalent to 1,100 liters per vehicle and could alone save us €2.3 million. We will achieve this target primarily through continued metering and evaluation. Our global target is to reduce water use per vehicle from 9.5 m^3 to 3.5 m^3 by 2015. Ford of Europe will reduce water use per vehicle from 3.5 m^3 to 2.4 m^3 between 2011 and 2016.

In our operations, we have looked to new technologies, including a process known as “dry-machining” that lubricates cutting tools with a fine spray of oil, rather than the conventional “wet-machining” that required large amounts of metal-working fluids and water to cool and lubricate the tools. For a typical production line, dry-machining, also known as Minimum Quantity Lubrication (MQL) machining, can save more than 280,000 gallons of water per year. Our engine plant in Cologne, Germany, for example, decreased water use per engine by 50 percent from 2011 to 2012 by switching to the MQL process.

In late 2012, our European Parts and Distribution Centre in Cologne was fitted with a new photovoltaic solar panel installation by German energy provider RheinEnergie. The installation will feed 1,100 MWh of electricity into the power grid every year; enough to power 370 average Cologne households or 460 Focus Electric vehicles covering an annual 15,000 km each – the equivalent of 6.9 million kilometers of driving. RheinEnergie will offer new customers of the Ford Focus Electric – our first-ever zero-emissions passenger car – the chance to buy this green energy via special contract, helping drivers to maximize the environmental benefits of opting for a Ford battery electric vehicle and travel with no carbon footprint left behind.

Even before these solar panels were installed, Ford had already been using green energy at its sites around Cologne, including electricity from three hydropower plants in Norway and Sweden. The Niehl Plant and the Merkenich Technical Centre also use steam generated as a by-product of its co-generation power plant to supply its heating. Combined, these measures reduce annual CO_2 emissions by 190,000 metric tons.

For a discussion of our global climate change impact and commitments, please see the Climate Change and the Environment section. For a discussion of our global commitment to water issues, please see the Water section.

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Ford of Europe:

Vehicle Safety

Ford remains a global leader in vehicle safety. We aim to give customers peace of mind and make the world safer by developing advanced safety technologies and making them available across a wide range of vehicles.

Ford is the first car manufacturer to earn six different Euro NCAP Advanced rewards for outstanding technological innovation; we received the awards for MyKey® on the new Fiesta and SYNC® with Emergency Assistance on the all-new B-MAX, new Fiesta, C-MAX, Focus and all-new Kuga.

We had already achieved Euro NCAP Advanced rewards earlier in 2012 for Active City Stop – a safety system designed to help drivers avoid low-speed collisions – on the all-new B-MAX and Focus. The Ford Focus also has achieved Advanced rewards for Driver Alert, Forward Alert and Lane Keeping Aid.

We also won three out of a possible seven 2012 Euro NCAP best-in-class safety awards – more than any other manufacturer. The awards reflect vehicle crash test performance and the availability of advanced safety technologies. The new Kuga topped the SUV sector, the Transit Custom triumphed in the Business and Family Vans class, and the B-MAX was the joint winner in the small multi-purpose vehicle (MPV) category. Also in 2012, the new B-MAX, new Fiesta, new Kuga and new Transit Custom were each awarded a maximum five-star rating under Euro NCAP's new crash test scoring system.

EuroNCAP also made special mention of the new Ford Ranger, after it became the safest pickup yet tested by the organization. The Ranger achieved the only five-star EuroNCAP rating ever awarded to a pickup. It scored highly in all areas of the assessment, receiving particular credit for pedestrian protection. These results were achieved in 2012 after EuroNCAP re-graded the Ranger using its new, tougher scoring system, and the pick-up still achieved the maximum possible five-star rating. Thus the Ranger remains the only five-star-rated pickup on sale. The best-selling Focus also retained its five stars after being reassessed.

See the Vehicle Safety and Driver Assist Technologies section for more on our vehicle safety technologies and activities.

Earned

six

different Euro NCAP Advanced rewards for outstanding technological innovation

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Ford of Europe:

Supply Chain

Ford's suppliers are critical allies in helping us to achieve success in the marketplace and meet our sustainability goals.

The basis of our work with suppliers is the Ford Code of Human Rights, Basic Working Conditions and Corporate Responsibility, which applies to our own operations as well as our $90 billion supply chain. The Code addresses workplace issues such as working hours, child labor and forced labor, as well as nondiscrimination, freedom of association, health and safety, the environment and other issues.

We work to ensure that Ford and our suppliers have management systems in place to mitigate potential risks, ensure continuity of supply and improve the overall sustainability of the complex global automotive supply chain. Our aim is to leverage our supply chain – and our industry – to make a positive impact in the markets in which we do business.

We take a three-pronged approach to supply chain sustainability:

- Building strong relationships with suppliers and engaging strategic suppliers
- Developing shared commitment and supplier capability
- Collaborating within the automotive industry to develop common approaches to sustainability issues

In 2012, the Automotive Industry Action Group (AIAG) jointly sponsored (with participating OEMs) supplier training sessions in Argentina, China, Mexico, Russia, Thailand, Turkey and Venezuela. More than 325 Ford suppliers attended these classroom sessions. This brings the global total for trained Ford suppliers to nearly 2,100. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with the AIAG and other automakers.) Because attendees are required to subsequently cascade the training and expectations to the entire factory population and suppliers, these trainings indirectly reach even more companies and individuals.

In 2013 we plan to conduct additional supplier training sessions in conjunction with the AIAG in Brazil, Mexico, Romania, South Africa and Turkey. The intent is, once again, to increase the scope of impact of the training and push working conditions expectations further down the supply chain.

Addressing environmental impacts is also an important part of our supply chain sustainability work. Employees from Cotarko, Ford of Europe's Cologne-based component forging supplier, have been going further to achieve ISO 50001 energy management certification. The certification is for a three-year period and confirms that the company – which is fully owned by Ford – operates to the highest standards and rules regarding the usage of energy.

For a discussion of our global commitment to supply chain sustainability and detail on the status of our working conditions assessments, please see the Supply Chain section.

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Ford of Europe:

People

Our employees are crucial to delivering our vision of building great products that contribute to a better world.

Ford is dedicated to contributing to society and being actively involved in the communities at all of our sites globally. In Europe, we remain true to this corporate citizenship mindset and are proud of our long history of working to benefit society outside of just the vehicles we produce.

In 2000, Ford in Germany launched the Community Involvement Program, which connects Ford employees to opportunities for volunteering in the community. As of year-end 2012, nearly 10,000 Ford employees had volunteered through this program, working on some 1,260 projects and dedicating more than 160,000 working hours. In 2012 alone, we supported approximately 115 volunteering and community projects through this volunteering program. Specifically, 830 employees each contributed up to 16 hours of their time, funded by Ford, totaling 12,400 hours. We also provided five Ford Transit vans to support 86 additional community projects. The vans were driven a total of 73,000 km, which equates to 556 vehicle-days on the road.

Also in 2012, Ford of Europe volunteers went out into the community as part of the Ford Global Week of Caring:

- In Belgium, for example, more than two dozen Ford volunteers went to work at a home for disabled children – painting, gardening and doing clean-up work.
- In Romania, some 80 Ford volunteers helped to renovate the yard at Children's Hospital Craiova. The hospital grounds were in poor condition, and Ford employees' team effort created a cleaned-up and inviting site for the children to rest and play.
- In Germany, approximately 70 Ford employees organized a charity art project to celebrate the 10-year anniversary of Ford's cooperation with the city of Cologne, raising about €7,000 for the oncology ward of a children's hospital. Employees of Ford and the city of Cologne jointly supervised the donation marathon.
- In Spain, Ford Valencia employees removed floating debris from Albufera lake waters. Multiple teams of three to four employees used rowboats to access and pick up the trash, which tended to get stuck between the shore plants.
- In the U.K., approximately 80 Ford volunteers were involved in various natural conservation activities to support the Essex Wildlife Trust, a long-standing collaboration to protect wildlife.

In Germany in early 2013, Ford received an "Engagement of the Year 2012" award from the state of North Rhine-Westphalia. This award honors Ford's Community Involvement Program in Germany as a role model for corporate citizenship. The prize money was donated to the nonprofit school project Gandhi Award in Cologne, which aims to foster and reward diversity at schools, conflict management and volunteering. Ford actively supports Gandhi Award activities.

See the Investing in Communities section for a full list of our Global Week of Caring and other volunteerism efforts conducted by Ford in Europe and elsewhere. For a discussion of our global commitment to our stakeholders please see the People section.

830 employees each contributed up to 16 hours of their time, totaling 12,400 volunteer hours

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Ford South America

Ford's principal markets in South America include Brazil and Argentina; we are the fourth-largest automaker in both markets. Brazil's economy and demographics – with growing per-capita income, low vehicle ownership rates and a young population – have helped its automotive market to more than double since 2002. These favorable factors are expected to continue to contribute to growth in vehicle sales in Brazil.

17,000
people employed in South America[1]

498,000
vehicles sold in South America in 2012

2012 Performance Highlights

In the past year:

- Ford South America received a total of 29 awards for our Company and our products (see below section), in part due to new global product launches in the region.
- We also improved our corporate reputation in Brazil, according to the research firm DYG, Inc., reaching 74 percent in the Overall Positive Impression ranking – a full 10 points higher than in the last analysis. This ranking puts Ford in second place.
- We began to export the global 1.6L Sigma engine to Europe.
- We presented the new Ford EcoSport to the world in a public event at Farol da Barra, a famous tourist spot in Salvador city (Bahia state, Brazil). The event brought together nearly 100,000 people and generated more than 12 million Twitter posts.
- Ford Argentina unveiled the new Ford Ranger, which is being produced at the Pacheco plant in Buenos Aires.
- Ford Venezuela celebrated its 50th anniversary as an assembly operation in the country; it was the first assembly plant to be established in the Valencia Industrial Zone. A book was published to commemorate the anniversary.
- Ford Venezuela also incorporated a full line of robots in the Valencia plant's paint system, becoming the first automotive plant in the Andean region to include this level of automation.
- For the fourth-consecutive year, Ford Venezuela gave out a Henry Ford Environmental Award to a worthy recipient in the community. This year's award went to "Fundacion Tierra Viva" for a project recycling vegetable oil in a rural community.

Awards

- Ford was chosen as one of Argentina's Top 10 Best Companies to Work For by *Apertura Magazine*, one of the country's premier business magazines.
- We were also recognized as one of the top 10 most prestigious brands in Argentina at the Prestige Awards, which are sponsored by the business newspaper *Ambito Financiero* and the Public Opinion Research Centre. We were the only automaker in the top 10.
- Ford won in five out of eight categories at the Brazilian Car of the Year Awards sponsored by *Autoesporte* magazine. The Ford EcoSport won SUV of the Year, the Fusion EcoBoost® 2.0L won Premium Car of the Year, the Fusion Hybrid won Green Car of the Year, the Ranger earned Pickup of the Year, and our Duratorq 3.2L engine won Engine of the Year (for 2.0L engines and above).
- *Quatro Rodas*, a Brazilian auto magazine, named the new EcoSport the Year's Best Choice.
- In the Top Car TV Awards, the new Ranger was named Best Pickup and the New EcoSport earned Best SUV.

- Ford won five categories of the Abiauto Awards, which are sponsored by the Brazilian Association of Automotive Press. The EcoSport won Best SUV; the Fusion was named Best Imported Vehicle; the New Ranger earned Best Pickup; the EcoBoost 2.0L won Best Engine (1,401 cc to 2,500 cc); and the Duratorq 3.2L was named Best Diesel Engine (2,000 cc to 3,500 cc).

- Ford Argentina ranked 10th in *Apertura Magazine's* Corporate Image Research. This survey asked 200 trendsetters – including businesspeople, consultants and journalists – to consider several attributes for each analyzed company, such as: reliability of products and services; ethics and transparency applied to doing business; economic and financial solvency; employment generation; presence in the country; management quality; investment and production in the country; corporate social responsibility; advertising and communication activities; and consumers' attention.

- For the eighth-consecutive year, Argentinian consumers selected Ford as the most trusted automobile brand. With this recognition, *Selecciones* magazine honored Ford with its "Trusted Brand" award.

- For the second time, the Ford Fiesta Kinetic Design was named the Safest Car in Argentina in the B class, by CESVI Argentina (the Center for Experimentation and Road Safety). The Fiesta Kinetic Design was the first car in its segment to introduce advanced safety equipment, which is normally found only in luxury vehicles in Argentina.

- The all-new EcoSport and new Ranger were chosen as Best SUV and Best Commercial Vehicle of 2012 by the Argentina Automotive Industry Journalists.

- Our public relations strategy for the new EcoSport launch, known as EcoSport Parade, won the Public Opinion Award from São Paulo's Public Relations Regional Council. The award aims to identify and honor the best public relations activities in eight categories.

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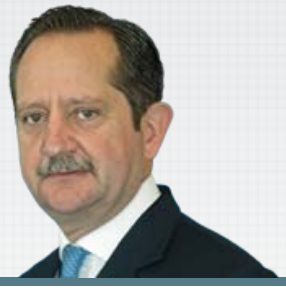
1. As of year-end 2012. Does not include Ford Motor Credit employees or our unconsolidated joint ventures.

Eduardo Serrano

Executive Director, Marketing & Sales Operations
Ford South America Operations



Ford South America:

Welcome

Take a minute to think about the legacy we are leaving for future generations. Do we want them to have the resources they need to have a bright future? We certainly do. But, wanting something does not mean it will automatically happen – we must actively support the causes we care about.

At Ford, we believe in sustainability, and therefore we work to make the world a better place in which to live. This may not seem like enough, due to the complexity of environmental challenges, but we believe that noble attitudes have the strength to change the world. Will it take a long time? Definitely. But, we cannot feel intimidated by the challenge, no matter how hard it may seem. Henry Ford was once told that cars were not a viable option, but he did not take “no” for an answer. It is in Ford Motor Company’s DNA to break down barriers and show the world that there is always an alternative that is worth the effort to pursue.

In our commitment to sustainability in South America, we are making choices that are changing consumers’ habits. The lineup we offer brings to the region an array of Ford’s global advanced technologies that not only enhance drivers’ and passengers’ well-being, but also make important contributions to our world, such as improved fuel economy and reduced greenhouse gas emissions.

Last year, we launched a range of global products in the region that reinforced Ford’s commitment to sustainability. With the Ford EcoSport, for example, we improved overall vehicle sustainability and efficiency using new materials and designing a lighter structure. This SUV achieves a high level of fuel efficiency with both engine options (the 1.6L Sigma and the 2.0L Duratec), each of which have an all-aluminum block, cylinder head and crankcase bearings, reducing vehicle weight by about 30 percent. The vehicle also has an intelligent fuel cut-off system that decreases power consumption when the engine is in neutral.

The new Ranger is the most modern and complete pickup in the region. From its design, which reduces dynamic drag to improve fuel economy, to the battery management system, we focused on reaching maximum levels of efficiency with this new vehicle.

With the launch of the new Fusion in Brazil, Ford introduced EcoBoost® technology, which is not only 20 percent more fuel efficient, but also reduces carbon dioxide (CO_2) emissions by about 15 percent.

The new Fusion Hybrid is another example of our more sustainable offerings. It boasts cutting-edge features such as a lithium-ion battery, as well as increased range in electric mode. Vehicles such as the Fusion Hybrid demonstrate our commitment to seeking out options for alternative materials, innovative processes and intelligent use of natural resources, which helps us to prevent waste and protect our environment.

We also aim to promote citizenship and environmental awareness in the community. Recently, for example, we opened the doors of our Environmental Education Center, located in the area of

Ford's Camacari Plant (in Bahia, Brazil), to receive public school students. This Center seeks to demonstrate how students can be eco-conscious and also be agents on behalf of the planet.

Taking care of the environment and using available resources in a conscientious way is everyone's responsibility, and we will continue to do our best to make Ford an increasingly more efficient and sustainable company.

Eduardo Serrano
Executive Director, Marketing & Sales Operations
Ford South America Operations

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Ford South America:

Financial Health

Ford experienced strong sales and growth in many of our regional markets in 2012.

In South America, pre-tax profits were substantially lower than a year ago, in part due to higher costs and unfavorable exchange in Brazil. Ford's 2012 market share for our South America region was 9 percent, down 0.3 percentage points from 2011. Brazil and Argentina are our highest-volume South American markets; our market shares for these two countries are shown in the table below.

South American Market Share

Major Markets	2012 Combined Car and Truck Market Share	Percentage Points Better/(Worse) than 2011
Total South America	9%	(0.3)%
Brazil	9.1%	(0.4)%
Argentina	12.3%	(0.6)%

In South America we are investing in global platforms to deliver global products, with 18 product actions (i.e., new or remodeled products) planned for 2013. Our strategy is focused on improving both quality and customer experience. Beginning in 2013, Ford South America will offer versions of our global small and midsize vehicles, including Fiesta- and Focus-sized small cars and utilities, Fusion- and Mondeo-sized midsize cars and utilities, as well as compact pickups and commercial vans.

In 2012, the Brazilian government announced new tax breaks for companies that invest in science, technology and fuel efficiency. These measures are intended to stimulate investment in the automotive industry in Brazil. Brazil is the world's fourth-largest auto market and is a critical piece of Ford's global strategy. Going forward, we are making our largest-ever five-year investment in our Brazil operations, committing R$4.5 billion by 2015, to accelerate the delivery of more fuel-efficient, high-quality vehicles and offer a lineup that consists of 100 percent global products.

We implemented several exciting product launches in South America in 2012:

- We launched the new EcoSport in two additional versions: 4WD and automatic. We also launched the new EcoSport in Argentina for the first time.
- We unveiled the all-new Fiesta Sedan for the first time worldwide during the São Paulo Auto Show.
- We launched the all-new Ranger, which is produced at the Pacheco plant in Buenos Aires. This launch required an investment of $250 million to prepare the Pacheco plant for the Ranger's production. In its first complete month of sales, the new Ranger reached the best volume ever registered in the light pickup segment.

Also, we announced that we reached production of 800,000 units of the Fiesta Rocam Hatch model in Brazil.

We know that our long-term success in the developing and revitalizing economies of South America will depend on our offering new types of mobility solutions that are increasingly sustainable and tailored to the unique needs of these markets. The section on our sustainable mobility strategy describes how we are aiming to do just that.

For a discussion of our global economic impact and financial health, please see the Financial Health section.

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Ford South America:

Climate Change and the Environment

Ford is focused on minimizing the environmental impacts of our vehicles and operations, including reducing our contribution to climate change.

We are committed to doing our share to prevent or reduce the potential for environmental, economic and social harm due to climate change. We have a science-based strategy to reduce greenhouse gas (GHG) emissions from our products and processes that focuses on doing our share to stabilize carbon dioxide (CO_2) concentrations in the atmosphere. On the product side, we have also made a commitment to deliver the most fuel-efficient vehicles in every market in which we participate. In South America, we have committed to improving fuel economy across our product lineup.

We are improving fuel economy in South America by introducing some of the efficient engine and transmission technologies currently used in North America, and by using technologies specifically relevant to the widespread use of biofuels in Brazil. In 2011 in Argentina, we introduced the Ford Mondeo with an EcoBoost® engine, which marked the debut of EcoBoost technology in South America. We are continuing to implement the new, more-efficient Sigma engine, which improves efficiency compared to current engines through reduced internal friction and improved electronic throttle controls. We have also improved the gearing ratios, aerodynamics and rolling resistance of our South American models, further increasing fuel economy. In 2012, we launched several new fuel-efficient products. In Brazil, for example, we launched the new Ford Fusion with a 2.0L EcoBoost engine. Also in Brazil, Ford produces a global vehicle line with advanced flex-fuel technology, allowing the use of locally produced ethanol.

For the 2012 model year and beyond, we are planning to introduce even more fuel-efficient twin independent variable cam timing engines and direct-injection engines, Battery Management Systems, smart alternator systems, dual-clutch automatic transmissions and improved aerodynamics in the B- and C-sized vehicle segments, which make up approximately 80 percent of the Brazilian market.

Aligned with our global standards and the Brazilian New Automotive Regime (Inovar Auto) – a federal government measure that aims to stimulate investment in the Brazilian auto industry – Ford Brazil is focusing on achieving fuel-efficiency targets and investing in engineering. Also in Brazil, newly introduced fuel economy and CO_2 emission regulations will speed up the introduction of new fuel-efficiency technologies, including three-cylinder engines, EcoBoost engines, Auto Start-Stop technology, Active Grille Shutter Systems that improve aerodynamics, and lower-rolling-resistance tires.

Ford is also using recycled and/or natural material in our vehicles in South America. All vehicles locally produced use 5 to 7 kg of recycled PET plastic in the form of carpets, ceiling linings, wheel boxes and acoustic blanket carpeting. And, the instrument panel of the new Cargo trucks is made with sisal natural fiber.

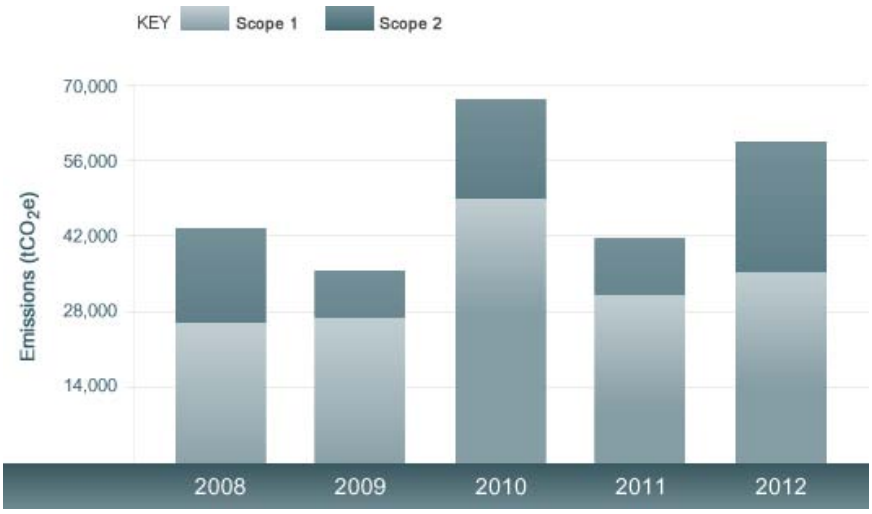
We are the first automobile company in Brazil to voluntarily report our facilities' GHG emissions to the Brazilian Greenhouse Gas Protocol. As a participant and one of the founders of the Protocol, we have conducted an inventory of our facility emissions and have set reduction goals. The results of the inventory can be seen in the graph below. Our absolute GHG emissions went up in 2012. Our GHG emissions per unit of production also showed an increase of approximately 38 percent compared to 2011, due to the 2012 electricity CO_2 emissions factor increase of 135 percent from 2011 and an overall decrease in production of 9.7 percent. (Regardless of production rates, plants require a minimum energy base load and operate most efficiently at high capacity. Generally, GHG emissions per unit of production trend upward when production decreases and trend downward when production increases.) For the 2012 emissions year, therefore, it was difficult to accurately determine the impacts of any facility process improvements.

Historical Emissions by Scope

Related links

This Report

- Climate Change and the Environment
- South American Policy



Year	Emissions (tCO_2e)	
	Scope 1	Scope 2
2008	25,925.00	17,392.00
2009	26,826.00	8,758.00
2010	48,834.23	18,620.00
2011	36,215.28	10,655.00
2012	35,278.41	23,769.00

The conservation of native vegetation at our plants is also a priority. Employees at the Camaçari, São Bernardo do Campo, Troller, Taubate and Tatui facilities, as well as the Miguel de Oliveira Port, took part in a variety of environmentally focused events, ranging from workshops and lectures to nature walks and site visits. At several locations, employees were given plants and seeds for their gardens.

For a discussion of our global climate change impact, policy and commitments please see the Climate Change and Environment section.

Ford Around the World

- Ford Asia Pacific and Africa
- Ford of Europe
- Ford South America
  - Welcome
  - Financial Health
  - Climate Change and the Environment
  - Water
  - Vehicle Safety
  - Supply Chain
  - People

Ford South America:

Water

For many years, we have demonstrated our commitment to water issues primarily through our own operations, focusing on water efficiency, effluent quality and water reuse. We also are committed to moving beyond our own fences to address water issues within our communities of operation. We are working with stakeholders to better understand issues around water accessibility and sanitation in water-stressed communities especially.

We are committed to mobilizing opportunities for communities in the developing world through clean water. We're investing in community water stewardship projects around the world, especially in areas where access to potable water is limited. Projects vary by location.

Ford unveiled its global sustainability programs goals for the coming years, with significant reductions in the consumption of water and energy. Several initiatives are being developed in the Company's factories in South America to meet these goals.

In Brazil in the last five years, we achieved a 23 percent reduction in absolute water consumption and 16 percent reduction per vehicle produced, representing a total of 307 million liters of water.

At our Camaçari plant (in Bahia state), we have wetlands where wastewater is purified in a rice and papyrus plantation. This method treats more than 11,352 m^3 liters of water per year. After passing through the filtering process, the facility reuses the treated water to irrigate the green areas of the complex. Ford was the first automotive industry in Brazil to have this system of soil filtration.

For a discussion of our global commitment to water issues, please see the Water section.

307 million
liters of water saved in Brazil

Related links

This Report

- Water

Ford Around the World

- Ford Asia Pacific and Africa
- Ford of Europe
- Ford South America
  - Welcome
  - Financial Health
  - Climate Change and the Environment
  - Water
  - Vehicle Safety
  - Supply Chain
  - People

Ford South America:

Vehicle Safety

Ford remains a global leader in vehicle safety. We aim to give customers peace of mind and make the world safer by developing advanced safety technologies and making them available across a wide range of vehicles.

The new EcoSport brings advanced systems for both passive and active protection to prevent accidents and ensure the vehicle is in control under various driving conditions. The EcoSport comes with front airbags as standard, offers curtain side airbags as optional and is the only vehicle in its category prepared to receive child seats according to the ISOFIX standard. (ISOFIX is the global standard for child safety seat attachment points.)

The new Fiesta achieved the highest score in safety tests conducted by the Latin New Car Assessment Program.[1] Ford's model received four stars in safety for both adults and children, the best among all evaluated.

The Focus, is the best-selling car in the world in 2012, and will soon have a new model available in South America. The Focus is recognized for its advanced design security and vehicle dynamics. In addition to an ultra-rigid safety cell protected by crumple zones, its arsenal includes dual airbags, front seatbelts with a pre-tensioned limiter and ABS brakes with electronic brake distribution and cornering brake control.

See the Vehicle Safety and Driver Assist Technologies section for more on our vehicle safety technologies and activities.

Related links

This Report

- Vehicle Safety

External Websites

- Global NCAP
- Latin NCAP

1. Several public and private agencies around the world perform crash testing of vehicles and publish safety ratings, however these rating systems are relatively new in South America. Recently, New Car Assessment Programs (NCAPs) are being launched in regions where they have not existed in the past. This is partly due to a new nonprofit organization based in London called Global NCAP that is promoting the establishment of NCAPs around the world. Global NCAP developed a Latin NCAP system, which is now providing ratings on vehicles in South and Central America.

Ford Around the World

- Ford Asia Pacific and Africa
- Ford of Europe
- Ford South America
  - Welcome
  - Financial Health
  - Climate Change and the Environment
  - Water
  - Vehicle Safety
  - Supply Chain
  - People

Ford South America:

Supply Chain

Ford's suppliers are critical allies in helping us to achieve success in the marketplace and meet our sustainability goals.

The basis of our work with suppliers is the Ford Code of Human Rights, Basic Working Conditions and Corporate Responsibility, which applies to our own operations as well as our $90 billion supply chain. The Code addresses workplace issues such as working hours, child labor and forced labor, as well as nondiscrimination, freedom of association, health and safety, the environment and other issues.

We work to ensure that Ford and our suppliers have management systems in place to mitigate potential risks, ensure continuity of supply and improve the overall sustainability of the complex global automotive supply chain. Our aim is to leverage our supply chain – and our industry – to make a positive impact in the markets in which we do business.

We take a three-pronged approach to supply chain sustainability:

- Building strong relationships with suppliers and engaging strategic suppliers
- Developing shared commitment and supplier capability
- Collaborating within the automotive industry to develop common approaches to sustainability issues

In 2012, the Automotive Industry Action Group (AIAG) jointly sponsored (with participating automakers) supplier training sessions in Argentina, China, Mexico, Russia, Thailand, Turkey and Venezuela. More than 325 Ford suppliers attended these classroom sessions. This brings the global total for trained Ford suppliers to nearly 2,100. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with the AIAG and other automakers.) Because attendees are required to subsequently cascade the training and expectations to the entire factory population and suppliers, these trainings indirectly reach even more companies and individuals.

In 2013, we plan to conduct additional supplier training sessions in conjunction with the AIAG in Brazil, Mexico, Romania, South Africa and Turkey. The intent is, once again, to increase the scope of impact of the training and push working conditions expectations further down the supply chain.

For a discussion of our global commitment to supply chain sustainability and detail on the status of our working conditions assessments, please see the Supply Chain section.

Related links

This Report

- Supply Chain

Ford South America:

People

Our employees are crucial to delivering our vision of building great products that contribute to a better world.

Through initiatives like the Global Week of Caring and the Henry Ford Environmental Awards, Ford has made a positive impact on communities and environmental issues throughout South America.

Global Week of Caring

During the 2012 Global Week of Caring, we provided dental care treatment for students from public schools. Also, Ford employees and partner companies collected more than 12 tons of nonperishable food for drought victims in Bahia state (Brazil). The donations were sent to the cities of Bom Jesus da Serra and Planaltino Ouriçangas.

In 2012, Ford employee initiatives also included the following:

- At the São Bernardo do Campo plant, Ford employees collected more than 2,800 pieces of clothing and shoes for six charities in the region.
- At the Brazilian Proving Ground, volunteers collected personal hygiene items for a public school, as well as clothes, furniture and electronic devices.
- Our engine and transmission facility in Taubaté promoted the exhibition and sale of handicrafts made by a charitable association.
- Ford Argentina organized its 12th blood donation day, which was attended by several employees. This initiative is part of an agreement with the Hemotherapy Institute from Buenos Aires's health ministry to promote awareness about blood donation.
- Ford Argentina has joined forces with Un Techo para mi Pais ("a roof for my country"), a well-known International NGO, to build a house in Buenos Aires. More than 20 Ford volunteers participated in this Global Week of Caring event, in order to foster the spirit of solidarity and enthusiasm among Ford employees.
- Ford Argentina's hourly employees provided donations of clothes and toys to a primary school located in Puerto Constanza, in Entre Rios Province. They also took the schoolchildren to Buenos Aires to see a movie.
- Ford Argentina employees participated in a plastic bottle recycling program.
- In July, as part of a program in Argentina we call "Ford and its Dealers, Generating Education for a New Future," we finished the renovation of our 18th school. This school, which is located in Los Chañaritos, Catamarca province, was built and donated entirely by Ford and our dealers in 1978. The renovation of the school includes sustainability upgrades such as wastewater filtration, solar energy installations and a device to gather rainwater.
- At the Valencia plant in Venezuela, more than 300 Ford volunteers organized and provided an entertainment day for 120 children (ages 5–12) from low-income orphanages. Children were taken on a short plant tour and later received school supplies, snacks and refreshments.
- More than 400 volunteers participated in a world beach cleanup day, contributing to cleaning one of the most important beaches in the central coast region in Venezuela.

Explore a full list of our Global Week of Caring and other volunteerism efforts in South America.

For a discussion of our global commitment to our stakeholders, please see the People section.

12 tons
of food collected for drought victims

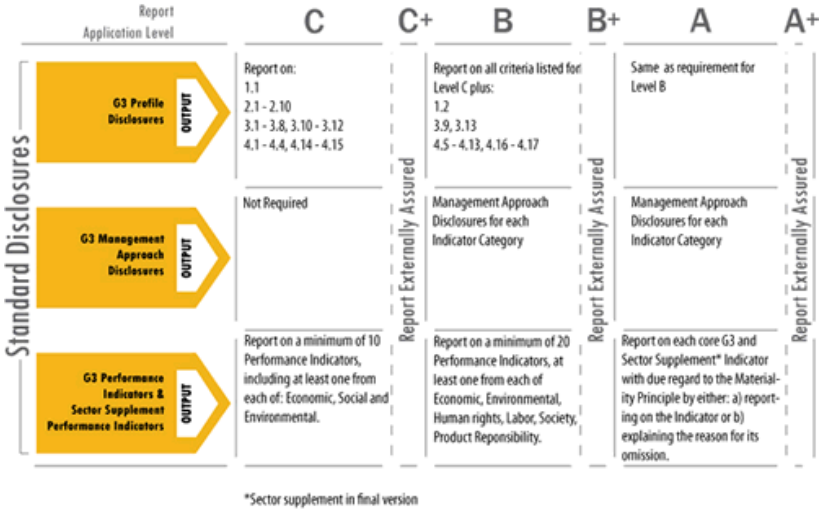
Related links

This Report

- People
- Investing in Communities

GRI Index

This report is aligned with the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines released in October 2006, at an application level of A. To locate the elements and information contained within the guidelines, use the index below. For a detailed explanation of the indicators, visit the GRI website.



Related Links

External Websites

- Global Reporting Initiative

Key

- Yes, this indicator is reported on
- This indicator is partially reported on
- No, this indicator is not reported on

Additional indicators are shown in **bold**

Part I: Profile Disclosures

1. STRATEGY AND ANALYSIS

Profile	Disclosure and Description	Status	Links	Notes
1.1	Statement from the most senior decisionmaker of the organization (e.g., CEO, chair or equivalent senior position) about the relevance of sustainability to the organization and its strategy.		• Letter from William Clay Ford, Jr. • Letter from Alan Mulally • Voice: Robert Shanks	
1.2	Description of key impacts, risks and opportunities.		• Letter from William Clay Ford, Jr. • Letter from Alan Mulally • Letter from Robert Brown • Strategy • Sustainability Strategy • Materiality Analysis • Materiality Matrix • Our Value Chain and Its Impacts • Ford Future Competitiveness • Mobility Solutions • Mobility Challenges and Opportunities • Climate Change: The Issue • Climate Change Risks and Opportunities • Ford's Science-Based CO_2 Targets • Water Impacts, Risks and Opportunities	

2. ORGANIZATIONAL PROFILE

Profile	Disclosure and Description	Status	Links	Notes
2.1	Name of the organization.			Please see 2012 Form 10-K page 1
2.2	Primary brands, products and/or services.			Please see 2012 Form 10-K page 2–3

2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries and joint ventures.			Please see 2012 Form 10-K page 2–3
2.4	Location of organization's headquarters.			Please see 2012 Form 10-K page 1
2.5	Number of countries where the organization operates, and names of countries either with major operations or that are specifically relevant to the sustainability issues covered in the report.			Please see List of Operations Worldwide
2.6	Nature of ownership and legal form.		• Shareholder Services	
2.7	Markets served (including geographic breakdown, sectors served and types of customers/beneficiaries).		• 2012 Sales and Highlights • Data: Market Share and Sales	Please see 2012 Form 10-K pages 2–3. More detailed information on our products and services is reported on in our annual financial reporting, including our 10-K and Annual Report.
2.8	Scale of the reporting organization, including: number of employees; net sales (for private sector organizations) or net revenues (for public sector organizations); total capitalization broken down in terms of debt and equity (for private sector organizations); and quantity of products or services provided.		• Financial Health • Employees • Current Financial Health	Information on our scale is reported on in our annual financial reporting, including our 10-K and Annual Report.
2.9	Significant changes during the reporting period regarding size, structure, or ownership including: the location of, or changes in operations, including facility openings, closings, and expansions; and changes in the share capital structure and other capital formation, maintenance and alteration operations (for private sector organizations).		• Focus on Asia • Focus on Europe	Please see 2012 Form 10-K page 2 for a list of changes to our reportable segments.
2.10	Awards received in the reporting period.		• Governance • Diversity and Inclusion Awards • Operational Energy and Greenhouse Gas Emissions • Vehicle Safety and Driver Assist Technologies: Highlights • Supplier Diversity Development • Ford of Europe • Ford Asia Pacific and Africa • Ford South America	

3. REPORT PARAMETERS

Report Profile

Profile Disclosure and Description		Status	Links	Notes
3.1	Reporting period (e.g., fiscal/calendar year) for information provided.		• Year in Review	
3.2	Date of most recent previous report (if any).		• Year in Review	
3.3	Reporting cycle (annual, biennial, etc.).		• Year in Review	
3.4	Contact point for questions regarding the report or its contents.		• Year in Review • Contact	

Report Scope and Boundary

Profile Disclosure and Description		Status	Links	Notes
3.5	Process for defining report content, including: determining materiality; prioritizing topics within the report; and identifying stakeholders the organization expects to use the report.		• Year in Review • Materiality Analysis • Stakeholder Engagement	
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.		• Year in Review	
3.7	State any specific limitations on the scope or boundary of the report.		• Year in Review	
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations and other entities that can significantly affect comparability from period to period and/or between organizations.		• Year in Review • Governance • Stakeholder Engagement: Employees • Working Conditions in Ford Plants • Case Study: Joint Venture Expansion in Chongqing • Our 2012 Safety Record • Financial Health Data • Climate Change and the Environment Data • Water Data	

			• Vehicle Safety and Driver Assist Technologies Data • Supply Chain Data • People Data
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.		• Year in Review • Financial Health Data • Climate Change and the Environment Data • Water Data • Vehicle Safety and Driver Assist Technologies Data • Supply Chain Data • People Data
3.10	Explanation of the effect of any re-statements of information provided in earlier reports and the reasons for such re-statement (e.g., mergers/acquisitions, change of the base years/periods, nature of business, measurement methods).		• Year in Review • Financial Health Data • Climate Change and the Environment Data • Water Data • Vehicle Safety and Driver Assist Technologies Data • Supply Chain Data • People Data
3.11	Significant changes from previous reporting periods in the scope, boundary or measurement methods applied in the report.		• Reporting and Transparency

GRI Content Index

Profile Disclosure	Description	Status	Links	Notes
3.12	Table identifying the location of the Standard Disclosures in the report.		• GRI Index	

Assurance

Profile Disclosure	Description	Status	Links	Notes
3.13	Policy and current practice with regard to seeking external assurance for the report. If not included in the assurance report accompanying the sustainability report, explain the scope and basis of any external assurance provided. Also explain the relationship between the reporting organization and the assurance provider(s).		• Assurance	

4. GOVERNANCE, COMMITMENTS, AND ENGAGEMENT

Governance

Profile Disclosure	Description	Status	Links	Notes
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.		• Sustainability Strategy • Governance • Governance and Management Structures • Sustainability Governance and Integration	
4.2	Indicate whether the Chair of the highest governance body is also an executive officer (and, if so, their function within the organization's management and the reasons for this arrangement).		• Governance and Management Structures	
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members.		• Corporate Governance – Board of Directors	
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.		• Ethical Business Practices • Promoting a Diverse and Inclusive Workforce	
4.5	Linkage between compensation for members of the highest governance body, senior managers and executives (including departure arrangements), and the organization's performance (including social and environmental performance).		• Letter from Robert Brown • Sustainability Strategy • Manufacturing • Sustainability Governance and Integration	
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.		• Ethical Business Practices	
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics.		• Corporate Governance – Board of Directors	

4.8	Internally developed statements of mission or values, codes of conduct and principles relevant to economic, environmental and social performance and the status of their implementation. Explain the degree to which these: are applied across the organization in different regions and departments/units; and relate to internationally agreed standards.		• Strategy • Sustainability Strategy • Ethical Business Practices • Policy Letters and Directives • Environmental Management • Working Conditions in Ford Plants • Sustainable Materials • Supporting ONE Ford • Promoting a Diverse and Inclusive Workforce
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct and principles.		• Letter from Robert Brown • Sustainability Strategy • Public Policy • Climate Change Governance • Sustainability Governance and Integration
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental and social performance.		• Corporate Governance – Board of Directors

Commitments to External Initiatives

Profile Disclosure and Description		Status	Links	Notes
4.11	Explanation of whether and how the precautionary approach or principles is addressed by the organization. Article 15 of the Rio Principles introduced the precautionary approach. A response to 4.11 could address the organization's approach to risk management in operational planning or the development and introduction of new products.			The precautionary principle is the idea that if the consequences of an action are unknown, but are judged to have some potential for major or irreversible negative consequences, then it is better to avoid that action. We do not formally apply the precautionary principle to decision making across all of our activities. However, it has influenced our thinking. For example, in addressing climate change as a business issue, we have employed this principle. In addition, we assess and manage environmental, safety, supply chain, operational and other risks as described throughout this report.
4.12	Externally developed economic, environmental and social charters, principles or other initiatives to which the organization subscribes or endorses.		• Policy Letters and Directives • Sustainability Strategy • Reporting and Transparency • Progress in Reducing Water Use	
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: has positions in governance bodies, participates in projects or committees; provides substantive funding beyond routine membership dues; or views membership as strategic.		• Participation in the Policy-Making Process • Key Partners • Operational Energy and Greenhouse Gas Emissions • Choosing More Sustainable Materials • Eliminating Undesirable Materials • Climate Change Policy and Partnerships • Collaborating with Partners • Collaborative Efforts • Leadership Development • Safe Conditions • Dealers • Industry and Cross-Industry Collaboration • Building Supplier Capability through Localized Training and Collaboration	

Stakeholder Engagement

Profile Disclosure and Description		Status	Links	Notes
4.14	List of stakeholder groups engaged by the organization. Examples of stakeholder groups are: communities; civil society; customers; shareholders and providers of capital; suppliers; and employees, other workers and their trade unions.		• Strategy • Our Value Chain and Its Impacts • Stakeholder Engagement	
4.15	Basis for identification and selection of stakeholders with whom to engage.		• Strategy • Overview of the Analysis Process • Stakeholder Engagement • People • Engaging with Communities • Customers • Supply Chain	
4.16	Approaches to stakeholder engagement, including frequency		• Overview of the Analysis Process	

	of engagement by type and by stakeholder group.		• Participation in the Policy-Making Process • Engaging With These Stakeholders • Engaging with Communities • Engaging with Customers • Understanding Customer Needs • Building Customer Awareness • Creating a Sustainable Supply Chain: Ford's Approach • Building Strong Supplier Relationships • Building Shared Commitment and Capability
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.		• Materiality Matrix • Overview of the Analysis Process • Assurance • Downloads • Voice: Mark Lee • Voice: J. Carl Ganter • Voice: Dr. Michiel van Ratingen • Employee Satisfaction • Safety Culture and Accountability • Dealers • Customers • Understanding Customer Needs • Voice: Patricia Jurewicz • Supplier Greenhouse Gas Emissions

Part II: Disclosures on Management Approach

ECONOMIC

Aspects	Status	Links	Notes
Economic performance		• Ford's Goals, Commitments and Status • Performance Summary • Financial Health • Financial Health Data • Our Value Chain and Its Impacts • Investing in Communities • Current Financial Health	
Market presence		• 2012 Sales and Highlights • Data: Market Share and Sales • Product Competitiveness	
Indirect economic impacts		• Our Value Chain and Its Impacts • Current Financial Health • The Lincoln Motor Company • New Models of Mobility • Ford Motor Credit Company	

ENVIRONMENTAL

Aspects	Status	Links	Notes
Materials		• Sustainable Materials • Choosing More Sustainable Materials • Eliminating Undesirable Materials	
Energy		• Ford's Goals, Commitments and Status • Performance Summary • Greening Our Operations • Greening Our Products	
Water		• Ford's Goals, Commitments and Status • Performance Summary • Water • Progress in Reducing Water Use • Water Strategy Approach	
Biodiversity		• Sustainable Land Use and Biodiversity	
Emissions, effluents and waste		• Climate Change • Beyond CO_2 • Choosing More Sustainable Materials	

		• Waste Management
Products and services		• Choosing More Sustainable Materials • Greening Our Products • Product Sustainability Index
Compliance		• Eliminating Undesirable Materials • End of Life • A Portfolio Approach • Fuel
Transport		• Supplier Greenhouse Gas Emissions • Logistics
Overall		• Ford's Goals, Commitments and Status • Performance Summary • Design for Lifecycle Sustainability • Increasing Consumer Awareness of Environmental Issues

SOCIAL: LABOR PRACTICES AND DECENT WORK

Aspects	Status	Links	Notes
Employment		• Employees • Employee Engagement • Salute to Dealers	
Labor/management relations		• Ford's Goals, Commitments and Status • Performance Summary • Employees • Promoting a Diverse and Inclusive Workforce • Communities • Engaging with Communities • Investing in Communities • Working Conditions in Ford Plants • Policy Letters and Directives	
Occupational health and safety		• Ford's Goals, Commitments and Status • Performance Summary • Workplace Health and Safety • Health and Safety Governance • Our 2012 Safety Record • Safety Culture and Accountability • Safe Conditions	
Training and education		• Leadership Development	
Diversity and equal opportunity		• Diversity and Inclusion • Promoting a Diverse and Inclusive Workforce • Dealers	

SOCIAL: HUMAN RIGHTS

Aspects	Status	Links	Notes
Investment and procurement practices		• Ford's Goals, Commitments and Status • Performance Summary • Communities • Governance • Water • Engaging with Communities • Policy Letters and Directives • Investing in Communities	
Non-discrimination		• Engaging with Communities • Policy Letters and Directives	
Freedom of association and collective bargaining		• Promoting a Diverse and Inclusive Workforce • Policy Letters and Directives	
Child labor		• Engaging with Communities • Policy Letters and Directives	
Forced and compulsory labor		• Engaging with Communities • Policy Letters and Directives	

Security practices		• Policy Letters and Directives
Indigenous rights		• Communities • Engaging with Communities • Policy Letters and Directives

SOCIAL: SOCIETY

Aspects	Status	Links	Notes
Community		• Ford's Goals, Commitments and Status • Performance Summary • Communities • Engaging with Communities • Investing in Communities	
Corruption		• Governance • Policy Letters and Directives • Ethical Business Practices	
Public policy		• Public Policy • Participation in the Policy-Making Process • Public Policy Positions • Climate Change Policy and Partnerships	
Anti-competitive behavior		• Policy Letters and Directives • Ethical Business Practices	
Compliance		• Sustainability Governance • Ethical Business Practices	

SOCIAL: PRODUCT RESPONSIBILITY

Aspects	Status	Links	Notes
Customer health and safety		• Ford's Goals, Commitments and Status • Performance Summary • How We Manage Vehicle Safety • Encouraging Safer Driving • Safety and Driver Assist Technologies	
Product and service labelling		• End of Life • Ethical Business Practices	
Marketing communications		• Dealers • Building Customer Awareness • Increasing Consumer Awareness of Environmental Issues • Ethical Business Practices	
Customer privacy		• Ford Motor Credit Company • Policy Letters and Directives	
Compliance		• Case Study: Public Domain Ratings • Ethical Business Practices	

Part III: Performance Indicators

ECONOMIC

Economic Performance

Performance Indicator and Description		Status	Links	Notes
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings and payments to capital providers and governments.		• Financial Health • Financial Health Data • Our Value Chain and Its Impacts • Investing in Communities • Current Financial Health	Information related to operating costs is referenced as "automotive costs of goods sold" in the Company's Annual Report on?Form 10-K. Information related to payments to providers of capital is referenced as "cash paid interest expenses" and "stockholder dividends" in the Company's Annual Report on?Form 10-K. Ford does not report on employee compensation and does not intend to do so in the future because the information is proprietary.
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.		• Ford's Climate Change Strategy • Climate Change Strategic Principles • The "CO_2 Model:" The Science Behind Our Scientific Approach	

			• Greening Our Products • Sustainable Technologies and Alternative Fuels Plan • Choosing More Sustainable Materials • Water Impacts, Risks and Opportunities • Operating in Water-Stressed Regions • Dealers	
EC3	Coverage of the organization's defined benefit plan obligations.		• Current Financial Health	For our retirees, we have two principal qualified defined benefit retirement plans in the U.S. The Ford-UAW Retirement Plan covers hourly employees represented by the UAW, and the General Retirement Plan covers substantially all other Ford employees in the U.S. hired on or before December 31, 2003. We established, effective January 1, 2004, a defined contribution plan generally covering new salaried U.S. employees hired on or after that date. Other U.S. and non-U.S. subsidiaries have separate plans that generally provide similar types of benefits. We report on contributions to, and the funded status of, our pension plans in our Annual Report on?Form 10-K.
EC4	Significant financial assistance received from government.		• Partnerships and Collaboration	

Market Presence

Performance Indicator and Description		Status	Links	Notes
EC5	Range of ratios of standard entry-level wage compared to local minimum wage at significant locations of operation.			
EC6	Policy, practices, and proportion of spending on locally based suppliers at significant locations of operation.		• Engaging with Communities • Supplier Diversity Development	Ford uses local suppliers everywhere we operate, and in several localities in which we operate, suppliers set up operations nearby to support Ford operations. In addition, the local economic development model described is aligned with our Supplier Diversity Development initiatives. Attributes of our Supplier Diversity Development initiatives include: economic development rationale, local employment opportunities and workforce development, supplier development and a considerable financial history of purchases from minority- and women-owned companies. These initiatives operate exclusively in the U.S. and are driven in part by compliance with federal requirements. Globally, a mandated Black Economic Empowerment Program also drives supplier development and local employment for Ford in South Africa. Ford does not track the proportion of spending on locally based suppliers at significant locations of operation because local sourcing has not appeared as an important issue in our materiality analyses.
EC7	Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.		• Engaging with Communities	Ford doesn't track this information, because our materiality analysis determined that the procedures used for local hiring and proportion of senior management hired from the local community is not a material issue. However, Ford's recruiting initiatives are designed to be inclusive and hire from all segments of the diverse populations and communities in which we live and work. Opportunities for employment and advancement are available on a non-discriminatory basis – without regard to race, color, religion, age, gender, sexual orientation, national origin, handicap or veteran status. We take affirmative action in accordance with the law to have minorities and women represented appropriately throughout the workforce and to provide qualified handicapped persons, disabled veterans and veterans of the Vietnam era opportunity for employment and advancement.

Indirect Economic Impacts

Performance Indicator and Description		Status	Links	Notes
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind or pro bono engagement.		• Our Value Chain and Its Impacts • Current Financial Health • Case Study: Saving Lives in Rural India • Water as a Community Issue • Collaborative Efforts • Case Study: Connected Vehicles • Investing in Communities	

			• Ford Motor Company Fund and Community Services • Ford Volunteer Corps	
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.		• Our Value Chain and Its Impacts • The Lincoln Motor Company • Product Competitiveness • New Models of Mobility • Ford Motor Credit Company • Focus on Europe • Focus on Asia • Product Sustainability Index	

ENVIRONMENTAL

Materials

Performance Indicator and Description		Status	Links	Notes
EN1	Materials used by weight or volume.		• Product Sustainability Index • Sustainable Materials • What is in a Vehicle? • Sustainable Raw Materials • Rare Earth Elements • Materials Management	In our materiality analysis, the use of sustainable materials appears as a significant issue, and we provide extensive coverage of that issue. However, accounting for the amount of every material used has not been identified as a material issue for internal or external stakeholders.
EN2	Percentage of materials used that are recycled input materials.		• Sustainable Materials • Choosing More Sustainable Materials • End of Life	We report on our use of recycled materials and our efforts to increase recycled content in our vehicles. However, accounting for the exact percentage of recycled materials used in all of our vehicles has not been identified as a material issue for internal or external stakeholders.

Energy

Performance Indicator and Description		Status	Links	Notes
EN3	Direct energy consumption by primary energy source.		• Data: Operational Energy Use and CO_2 Emissions	We do not currently aggregate energy use by source on a global basis. However, we will provide that information within the next three reporting cycles.
EN4	Indirect energy consumption by primary source.		• Data: Fuel Economy and CO_2 Emissions	To generate our greenhouse gas emission estimates we use indirect energy conversion factors from the WRI/WBCSD Greenhouse Gas Reporting Protocol or local regulations, if required (such as by the U.S. EPA). However, estimating and aggregating the fuel sources for our indirect energy use is not considered material to our business because we actively manage both energy use and greenhouse gas emissions and do not control the sources of indirect energy we purchase.
EN5	Energy saved due to conservation and efficiency improvements.		• Data: Operational Energy Use and CO_2 Emissions • Greening Our Operations • Operational Energy and Greenhouse Gas Emissions • Renewable Energy • Green Buildings	
EN6	Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives.		• Design for Lifecycle Sustainability • Greening Our Products • Sustainable Technologies and Alternative Fuels Plan • Improving Fuel Economy • Migration to Alternative Fuels and Powertrains • Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance • Electrification: A Closer Look • Dealers	
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.		• Design for Lifecycle Sustainability • Greening Our Products • Improving Fuel Economy • Migration to Alternative Fuels and Powertrains • Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance • Electrification: A Closer Look	

Water

Performance Indicator and Description		Status	Links	Notes
EN8	Total water withdrawal by source.		• Water Data	
EN9	Water sources significantly affected by withdrawal of water.		• Water Consumption in the Vehicle Lifecycle	
EN10	Percentage and total volume of water recycled and reused.		• Investing in New Technologies	

Biodiversity

Performance Indicator and Description		Status	Links	Notes
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.		• Sustainable Land Use and Biodiversity	We believe that protecting biodiversity is an important issue, and we report on our efforts to increase and protect wildlife habitat. However, this issue was not identified as material in our analysis because Ford facilities, once established, do not routinely disturb land, wildlife or biodiversity. In siting new facilities, we conduct a due diligence process and an environmental impact assessment, both of which consider potential impacts on biodiversity.
EN12	Descriptions of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.		• Sustainable Land Use and Biodiversity	
EN13	Habitats protected or restored.		• Sustainable Land Use and Biodiversity • Remediation	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.		• Sustainable Land Use and Biodiversity • Remediation	
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.			

Emissions, Effluent, and Waste

Performance Indicator and Description		Status	Links	Notes
EN16	Total direct and indirect greenhouse gas emissions by weight.		• Quantifying Our Environmental Impact • Product Sustainability Index • Ford's Greenhouse Gas Emissions • Supplier Greenhouse Gas Emissions • Data: Operational Energy Use and CO_2 Emissions	
EN17	Other relevant indirect greenhouse gas emissions by weight.		• Data: Fuel Economy and CO_2 Emissions	
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.		• Design for Lifecycle Sustainability • Product Sustainability Index • Greening Our Operations • Operational Energy and Greenhouse Gas Emissions • Renewable Energy • Non-CO_2, Facility-Related Emissions • Improving Fuel Economy • Migration to Alternative Fuels and Powertrains • Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance • Electrification: A Closer Look	
EN19	Emissions of ozone-depleting substances by weight.		• Data: Emissions (VOC and Other)	
EN20	NOx, SOx and other significant air emissions by type and weight.		• Product Sustainability Index • Data: Tailpipe Emissions	
EN21	Total water discharge by quality and destination.		• Progress in Reducing Water Use	Significant discharges to water by type are not currently tracked at the corporate level. The large majority of wastewater discharges are treated before discharge. The Company is collecting baseline data on discharges to municipal wastewater treatment plants, and this data will be reported as soon as practical, likely beginning in 2015.
EN22	Total weight of waste by type and disposal method.		• Data: Waste • Waste Management	This is an area in which Ford is increasing its tracking and reporting. We currently report on waste by type, categorized into hazardous and nonhazardous. We also report on waste disposal to landfill. With our new GEM database, we are now tracking waste disposal

				methods beyond landfill (i.e., recycling, reuse, compost, incineration, other.) With this new data-tracking tool, we will be able to more report fully on this metric in the next few years.
EN23	Total number and volume of significant spills.		• Compliance	
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII, and percentage of transported waste shipped internationally.		• Sustainable Materials	
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.			

Products and Services

Performance Indicator and Description		Status	Links	Notes
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.		• Design for Lifecycle Sustainability • Product Sustainability Index • Greening Our Operations • Choosing More Sustainable Materials • Eliminating Undesirable Materials • Water Consumption in the Vehicle Lifecycle	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.		• Choosing More Sustainable Materials • Logistics	

Compliance

Performance Indicator and Description		Status	Links	Notes
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.		• Environmental Management • Compliance • Eliminating Undesirable Materials	

Transport

Performance Indicator and Description		Status	Links	Notes
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.		• Supplier Greenhouse Gas Emissions • Logistics	

Overall

Performance Indicator and Description		Status	Links	Notes
EN30	Total environmental protection expenditures and investments by type.		• Operational Energy and Greenhouse Gas Emissions • Supplier Environmental Management	

SOCIAL: LABOR PRACTICES AND DECENT WORK

Employment

Performance Indicator and Description		Status	Links	Notes
LA1	Total workforce by employment type, employment contract and region.		• Ford Asia Pacific and Africa • Ford of Europe • Ford South America	The number of employees by region can be found in Ford's Annual Report on?Form 10-K page 16.
LA2	Total number and rate of employee turnover by age group, gender and region.			This is proprietary information.
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.		• Employees	

Labor/Management Relations

Performance Indicator and Description		Status	Links	Notes
LA4	Percentage of employees covered by collective bargaining agreements.		• Stakeholder Engagement: Employees • Employees	
LA5	Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.		• Focus on Europe	Ford fully complies with applicable requirements for minimum notice periods regarding operational

changes.

Occupational Health and Safety

Performance Indicator and Description		Status	Links	Notes
LA6	Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs.		• Stakeholder Engagement: Employees • Health and Safety Governance	
LA7	Rates of injury, occupational diseases, lost days and absenteeism, and number of work-related fatalities by region.		• Our 2012 Safety Record • Data: Workplace Safety	Absenteeism is covered by collective bargaining agreements, which vary. The data are not tracked centrally. Rates of absenteeism were not identified as a material issue in our materiality analysis.
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families or community members regarding serious diseases.		• Health as a Strategic Advantage	
LA9	Health and safety topics covered in formal agreements with trade unions.		• Safety Culture and Accountability • Relationship Management	

Training and Education

Performance Indicator and Description		Status	Links	Notes
LA10	Average hours of training per year per employee by employee category.		• Ethical Business Practices • Leadership Development	We provide information on employee training programs relevant to sustainability; however, our materiality analysis did not identify the average hours of training per employee as a material issue.
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.		• Leadership Development • Focus on Europe	
LA12	Percentage of employees receiving regular performance and career development reviews.		• Leadership Development	

Diversity and Opportunity

Performance Indicator and Description		Status	Links	Notes
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.		• Corporate Governance – Board of Directors • Data: Engagement and Community	
LA14	Ratio of basic salary of men to women by employee category.		• Diversity and Inclusion	This is proprietary information.

SOCIAL: HUMAN RIGHTS

Strategy and Management

Performance Indicator and Description		Status	Links	Notes
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.		• Policy Letters and Directives • Expanding Impact on Our Supply Chain • Sustainable Raw Materials	
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.		• Supply Chain Data • Supply Chain Profile • Assessing Suppliers • Sustainable Raw Materials • Conflict Minerals	
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.		• Ethical Business Practices • Building Supplier Capability through Localized Training and Collaboration	

Non-Discrimination

Performance Indicator and Description		Status	Links	Notes
HR4	Total number of incidents of discrimination and actions taken.		• Diversity and Inclusion • Data: Engagement and Community	This is proprietary information.

Freedom of Association and Collective Bargaining

Performance Indicator and Description		Status	Links	Notes

HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.		• Promoting a Diverse and Inclusive Workforce • Policy Letters and Directives

Child Labor

Performance Indicator and Description		Status	Links	Notes
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor.		• Policy Letters and Directives • Engaging with Communities	

Forced and Compulsory Labor

Performance Indicator and Description		Status	Links	Notes
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measurements to contribute to the elimination of forced or compulsory labor.		• Policy Letters and Directives • Engaging with Communities • Forced Labor and Human Trafficking in Supply Chains • Charcoal and Pig Iron Production in Brazil	

Security Practices

Performance Indicator and Description		Status	Links	Notes
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.			

Indigenous Practices

Performance Indicator and Description		Status	Links	Notes
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.			

SOCIAL: SOCIETY

Community

Performance Indicator and Description		Status	Links	Notes
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating and exiting.		• Engaging with Communities • Investing in Communities • Encouraging Safer Driving	

Corruption

Performance Indicator and Description		Status	Links	Notes
SO2	Percentage and total number of business units analyzed for risks related to corruption.		• Governance • Policy Letters and Directives	
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.		• Ethical Business Practices	
SO4	Actions taken in response to incidents of corruption.		• Ethical Business Practices	

Public Policy

Performance Indicator and Description		Status	Links	Notes
SO5	Public policy positions and participation in public policy development and lobbying.		• Public Policy • Participation in the Policy-Making Process • Public Policy Positions • Climate Change Policy and Partnerships	
SO6	Total value of financial and in-kind contributions to political parties, politicians and related institutions by country.		• Participation in the Policy-Making Process	

Anti-Competitive Behavior

Performance Indicator and Description		Status	Links	Notes
SO7	Total number of legal actions for anti-competitive behavior, anti-trust and monopoly practices and their outcomes.			Legal actions are described in the Company's Annual Report on the?Form 10-K, pages 25–26.

Compliance

Performance Indicator and Description		Status	Links	Notes
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.		• Compliance	Additional information on fines for noncompliance with laws and regulations can be found in the Company's Annual Report on the?Form 10-K?on pages 25–26.

SOCIAL: PRODUCT RESPONSIBILITY

Customer Health and Safety

Performance Indicator and Description		Status	Links	Notes
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.		• Product Development • Design for Lifecycle Sustainability • Product Sustainability Index • Improving Vehicle Interior Environmental Quality and Choosing Allergy-Tested Materials • Eliminating Undesirable Materials • Vehicle Safety and Driver Assist Technologies • Vehicle Safety and Driver Assist Technologies Case Studies	
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services, by type of outcomes.		• Customer Satisfaction and Quality • Data: Product, Quality and Service • Vehicle Safety and Driver Assist Technologies Data	Information on all legal proceedings and incidents of noncompliance can be found in the Company's Annual Report on the?Form 10-K?on pages 25–26.

Products and Service Labeling

Performance Indicator and Description		Status	Links	Notes
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.			Ford's vehicles are subject to numerous labeling requirements that vary by country, region and state. We maintain compliance through our normal product requirement compliance systems. For example, in the U.S., window stickers on new vehicles provide fuel economy and crash test ratings, the percentage of vehicle content from the U.S. and Canada and major sources of foreign parts. We report on safe and efficient use of the product in vehicle manuals. In Europe, we use an Eco-label that goes beyond legal requirements and also inform customers in the driver's manual about the impact of air conditioning on real-world fuel economy. Eco-labels also discuss substances that might produce an environmental or social impact. Ford of Europe also reports on disposal of products. In the U.S., Ford makes vehicle dismantling guides available.
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.			
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.		• Product Competitiveness • Customer Satisfaction and Quality • Global and Regional Quality Improvements • Dealers • Customers • Engaging with Customers • Understanding Customer Needs	

Marketing Communications

Performance Indicator and Description		Status	Links	Notes
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion and sponsorship.		• Policy Letters and Directives • Dealers	
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship by type of outcomes.			Information on all legal proceedings and incidents of noncompliance can be found in the Company's Annual Report on the?Form 10-K, pages 25–26

Customer Privacy

Performance Indicator and Description		Status	Links	Notes
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.		• Ford Motor Credit Company	

Compliance

Performance Indicator and Description		Status	Links	Notes
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.			Information on all legal proceedings and incidents of noncompliance can be found in the Company's Annual Report on the?Form 10-K, pages 25–26

UNGC Index

In 2008 Ford joined the United Nations Global Compact, which endorses a framework of principles in the areas of human rights, labor and the environment. We continue to be committed to the principles and are actively implementing them as detailed in this report.

Alan R Mulally
President and Chief Executive Officer, June 2012

Related Links

External Websites

- United Nations Global Compact

Human Rights

UNGC Principle		Report Links	Notes
1.	Businesses should support and respect the protection of internationally proclaimed human rights.	• Policy Letters and Directives • Working Conditions in Ford Plants • Communities • Engaging with Communities	
2.	Businesses should make sure that they are not complicit in human rights abuses.	• Policy Letters and Directives • Expanding Impact on Our Supply Chain • Sustainable Raw Materials • Assessing Suppliers • Sustainable Raw Materials • Conflict Minerals	

Labor Standards

UNGC Principle		Report Links	Notes
3.	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	• Employees • Promoting a Diverse and Inclusive Workforce • Policy Letters and Directives	
4.	Businesses should uphold the elimination of all forms of forced and compulsory labor.	• Policy Letters and Directives • Engaging with Communities • Forced Labor and Human Trafficking in Supply Chains • Charcoal and Pig Iron Production in Brazil	
5.	Businesses should uphold the effective abolition of child labor.	• Policy Letters and Directives • Engaging with Communities	
6.	Businesses should uphold the elimination of discrimination in respect of employment and occupation.	• Policy Letters and Directives • Promoting a Diverse and Inclusive Workforce	

Environment

UNGC Principle		Report Links	Notes
7.	Businesses should support a precautionary approach to environmental challenges.	• Climate Change	The precautionary principle is the idea that if the consequences of an action are unknown, but are judged to have some potential for major or irreversible negative consequences, then it is better to avoid that action. We do not formally apply the precautionary principle to decision making across all of our activities. However, it has influenced our thinking. For example, in addressing climate change as a business issue, we

			have employed this principle. In addition, we assess and manage environmental, safety, supply chain, operational and other risks as described throughout this report.
8.	Businesses should undertake initiatives to promote greater environmental responsibility.	• Policy Letters and Directives • Climate Change • Sustainable Materials • Choosing More Sustainable Materials • Eliminating Undesirable Materials • Greening Our Operations • Greening Our Products • Progress in Reducing Water Use • Waste Management	
9.	Businesses should encourage the development and diffusion of environmentally friendly technologies.	• Design for Lifecycle Sustainability • Greening Our Operations • Greening Our Products • Sustainable Technologies and Alternative Fuels Plan • Improving Fuel Economy • Migration to Alternative Fuels and Powertrains • Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance • Electrification: A Closer Look	

Anti-Corruption

UNGC Principle		Report Links	Notes
10.	Businesses should work against corruption in all its forms, including extortion and bribery.	• Governance • Ethical Business Practices • Policy Letters and Directives	

Glossary

ABF	Aligned Business Framework, Ford's strategy for working more closely with key suppliers
ACC	Adaptive Cruise Control, a technology that helps drivers maintain a safe distance from the vehicle in front of them
ADFSO	Aggressive Deceleration Fuel Shut-Off, a technology for improving fuel efficiency
AIAG	Automotive Industry Action Group, a U.S.-based association of automotive OEMs, suppliers and service providers
Annual Report on Form 10-K	An audited annual financial report required by the U.S. Securities and Exchange Commission containing more detailed information about the Company's business, finances and management than the annual report
APA	Asia Pacific and Africa, a Ford region
B car	Generic term for a small or subcompact car (e.g., the size of a Ford Fiesta)
BEV	Battery electric vehicle, a vehicle that has no internal-combustion engine and does not use any onboard gasoline; instead, it runs on a high-voltage electric motor
Biodiesel	A diesel alternative made from vegetable oils obtained from oil seeds, including soy, canola, palm and rapeseed, or from animal fat
BLIS	Blind Spot Information System, a technology that uses radar sensors to help inform the driver when a vehicle is detected in the blind spot zone
Blueprint for Sustainability	Several years ago, this term was introduced at Ford to describe the actions we are taking to achieve outstanding fuel economy and reduce greenhouse gas emissions from our products. Now we use the term more broadly to describe our sustainability strategy as a whole, in recognition of the fact that our important sustainability issues are part of a complex system that interconnects our products, plants and people and the communities in which we operate.
BMS	Battery Management System, a Ford technology that improves the efficiency of a vehicle's electrical system
BPR	Business Plan Review meetings, one of Ford's key management processes
CAA	U.S. Clean Air Act
CAFE	Corporate Average Fuel Economy, a U.S. regulation requiring auto companies to meet certain sales-weighted average fuel economy levels for passenger cars and light trucks and report these numbers annually
CAMP	Crash Avoidance Metrics Partnership, an association of original equipment manufacturers, suppliers and the U.S. government conducting pre-competitive research on active safety features
C car	Generic term for a compact car (e.g., the size of a Ford Focus)
CDP	Carbon Disclosure Project, a nonprofit organization to which Ford and other companies report their greenhouse gas emissions and water use
Ceres	A network of investors, environmentalists and other public interest groups that works with companies and investors to address sustainability challenges
CAF	Our Chinese joint venture, formerly known as Changan Ford Mazda Automobile Co. Ltd., (FMA) and recently restructured as Changan Ford Automobile Corporation, Ltd. (CAF) to increase our ownership percentage
CNG	Compressed natural gas, a type of alternative fuel
CO_2	Carbon dioxide, a primary greenhouse gas
DfS	Design for Sustainability, a tool for bridging the gap between product development and environmental and social issues
DOE	U.S. Department of Energy
E85	A fuel blend of 85 percent ethanol and 15 percent gasoline
EcoBoost®	Ford engine technology that uses turbocharging, direct injection and reduced displacement to increase fuel economy and performance while reducing CO_2 emissions
ECOnetic	A line of European Ford model vehicles with reduced CO_2 emissions
Electrification	The process of developing the technology and infrastructure necessary to replace traditional oil-based vehicle fuels with electricity
ELV	End-of-life vehicle; an EU Directive requires manufacturers to take back ELVs and ensure environmentally sound recycling and disposal
EMOS	Ford's Energy Management Operating System, a mechanism for integrating energy-efficient principles into the facility design, manufacturing/engineering processes, and operations of Ford Manufacturing, Office and

	Engineering facilities
Environmental aspects	The elements of an organization's activities, products and services that can interact with the environment
EOS	Ford's Environmental Operating System, which is integrated with ISO 14001 and used for driving environmental compliance
EPA	Environmental Protection Agency, a U.S. government agency
EPAS	Electric power assisted steering, a technology that boosts fuel economy and decreases CO_2 emissions
ERGs	Ford's Employee Resource Groups, affinity networks at the Company that are intended to foster diversity and inclusion
ESI	Employee Satisfaction Index, eight questions on Ford's annual Pulse survey of employees
Ethanol	A gasoline alternative, typically derived from plant material (e.g., corn, sugar cane, sugar beets); can also be made from petroleum. Plant-derived ethanol is also sometimes called bio-ethanol.
EU	European Union
Euro 4, Euro 5, Euro 6	Europe's tailpipe emissions standards; Euro 5 standards have been completely phased in for light-duty vehicles in Europe as of January 1, 2012. Euro 6 standards have been developed and will be applied beginning in September 2014.
EV	Electrified vehicle, a generic term for any vehicle that is powered – at least in part – by an electric motor
EVP	Employment Value Proposition, defined as why people choose a given employer and then stay with that employer.
FCV	Fuel cell vehicle, a vehicle that uses an onboard fuel cell to create electrical power through a chemical reaction based on hydrogen fuel
Ford DSFL	Ford Driving Skills for Life, our driver education program
FFV	Flexible fuel vehicle, a vehicle that can be run on any blend of unleaded gasoline with up to 85 percent ethanol
Flexible manufacturing	The use of common platforms and shared manufacturing technologies that allow a single plant to make multiple models and switch relatively rapidly between them, allowing faster response to changing customer demand
FoE	Ford of Europe, a Ford region
FPS	Ford Production System, a continuously improving, lean, flexible and disciplined common global production system
FSAO	Ford South America Operations – a Ford region
Fuel cell	A type of power plant that generates electricity by combining oxygen and hydrogen, and can be used in different sizes and configurations to power vehicles or buildings
Fuel economy	The distance that can be traveled on a single gallon of fuel
Fuel efficiency	The amount of fuel (in ton-miles-per-gallon) needed to move a vehicle of a certain weight a certain distance
GEM	Ford's Global Emissions Manager database, used for measuring, monitoring and recording environmental data
GHG	Greenhouse gas, for example carbon dioxide (CO_2), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6) or water vapor
GMAP	Ford's Global Material Approval Process, a materials management process
Go Further	Ford's new global brand promise to express what we stand for as a Company
GPDS	Global Product Development System, Ford's system for integrating product development with manufacturing
GQRS	Global Quality Research System, which tracks "Things Gone Wrong" and is Ford's primary quality survey
GRI	Global Reporting Initiative, a multistakeholder process and independent institution whose mission is to develop and disseminate globally applicable sustainability reporting guidelines
GTDI	Gasoline turbocharged direct injection
HEV	Hybrid electric vehicle; a full hybrid can run exclusively on battery power, exclusively on gas power or on a combination of both
IIHS	Insurance Institute for Highway Safety, a U.S.-based nonprofit organization
IMDS	International Material Data System, a materials reporting system used by multiple automakers
ISO 14001	The leading global environmental management system standard, developed by the International Organization for Standardization
JDRF	The leading global organization focused on type 1 diabetes research
JMC	Jiangling Motors Corporation, Ltd., one of Ford's joint ventures in China
LEED	Leadership in Energy and Environmental Design, the "green building" rating system of the U.S. Green Building Council
LEV	Low Emission Vehicle, a level of standards for tailpipe emissions (hydrocarbon, carbon monoxide and oxides of nitrogen) enforced in California and states that have adopted California standards
LEV program	The unique vehicle emissions program adopted by California for the control of tailpipe and evaporative emissions that provides several sets of emissions standards
Lifecycle assessment	Process of assessing the environmental, social and economic impacts of a product system over its entire lifecycle, from cradle to grave, including material production, product manufacture, product use, product maintenance and disposal at end of life

LPG	Liquefied petroleum gas (also known as propane or Autogas), a type of alternative fuel
MAP	Michigan Assembly Plant, a Ford facility has been transformed from a large SUV factory into a modern, flexible small-car plant
Materiality	*Materiality* as used in this sustainability report does not share the meaning assigned to this concept for purposes of financial reporting. For the purposes of this report, we consider material information to be that which is of greatest interest to, and which has the potential to affect the perception of, those stakeholders who wish to make informed decisions and judgments about the Company's commitment to environmental, social and economic progress.
MPGe	A mile-per-gallon equivalency metric for electrified vehicles
MQL	Ford's Minimum Quantity Lubricant machining process
MY	Model Year, the manufacturer's annual production period which includes January 1 of the calendar year. For example, production of 2013 model year vehicles might begin in June 2012 and end in May 2013, but could start as early as January 2, 2012, and end as late as December 2013. We report fuel economy by model year because that is how it is reported to government agencies, and therefore, this data corresponds to what is available in the public domain.
NADA	National Automobile Dealers Association, an industry association of car and truck dealers
NCAP	New Car Assessment Program, a term commonly used to denote an official, independent vehicle testing and/or rating system. Separate NCAPs now exist in the United States, Europe, Australia, China, and Central and South America.
NEDC	New European Driving Cycle, the testing procedures used to determine compliance with government fuel economy and emissions requirements.
NGO	Nongovernmental organization
NHTSA	National Highway Traffic Safety Administration, a U.S. government agency
NMOG	Non-methane organic gases
NOV	Notice of violation (e.g., from a regulatory agency)
NPRI	National Pollutant Release Inventory (Canada), similar to U.S. TRI
OEM	Original equipment manufacturer
OHS policy	Ford's Occupational Health and Safety policy
ONE Ford	Ford's accelerated restructuring plan; One Team unified in pursing One Plan to deliver One Goal: An exciting, viable Ford
OSRP	Occupant Safety Research Partnership, a group within the U.S. Council for Automotive Research that researches and develops advanced crash test dummies and other pre-competitive safety systems
PAS	Ford's Partnership for Advanced Studies, our flagship education program
PDGs	Public Domain Guidelines, internal Ford guidelines that focus on ensuring that our vehicles earn top marks in public domain assessments
PEC	Paint Emissions Concentrator, formerly called "fumes-to-fuel", a technology that concentrates VOC emissions from the painting process by approximately 1,500:1, allowing VOCs to be burned as a fuel source.
PHEV	Plug-in hybrid electric vehicle, a vehicle similar to an HEV in that it is equipped with both an electric battery and a gas-powered engine; however, PHEVs are equipped with a high-capacity battery that can be charged from an ordinary household outlet
PowerShift	Ford's fuel-efficiency-boosting, six-speed, dual-clutch transmission system
PPA	Public-Private Alliance for Responsible Mineral Trade, a joint initiative among governments, companies and civil society to support supply chain solutions to conflict minerals challenges
PSI	Product Sustainability Index, a tool used by Ford of Europe to incorporate lifecycle analysis into product development
Pulse survey	Ford's annual, voluntary survey of salaried-employee satisfaction
PZEV	Partial Zero Emission Vehicle, a vehicle standard that is part of the LEV II Program
QOS	Ford's global Quality Operating System, used in our manufacturing to develop, measure and continuously improve robust processes
REACH	Registration, Evaluation, Authorization and Restriction of Chemical Substances (EU legislation)
REEs	Rare Earth Elements, a suite of mined materials widely used in consumer and automotive electronics
RFS	Renewable Fuel Standard, a provision within the U.S. Energy Independence and Security Act of 2007 requiring a significant increase in the use of biofuels
SDGs	Safety Design Guidelines, Ford's stringent internal engineering design targets
Six-speed transmission	A transmission using six gears, for improved fuel economy compared to typical four-speed transmissions
SQDCPME Scorecard	A scorecard that helps us keep focused on the vital components of a sustainable business: Safety, Quality, Delivery, Cost, People, Maintenance and Environment
Stakeholder	Anyone who is impacted or believes they are impacted by the operations or practices of the Company, including customers, employees, business partners, shareholders, governments, communities and nongovernmental organizations. Some also consider the environment a stakeholder.
Sustainability	A business model that creates value consistent with the long-term preservation and enhancement of environmental, social and financial capital. Also, meeting the needs of the present without compromising the future.
Sustainable Technologies and	Ford's product strategy, outlining the near-, mid- and long-term steps we are taking to develop and deploy

Alternative Fuels Plan	vehicle and fuel technologies to implement our blueprint for sustainability
SUMURR	Sustainable Urban Mobility with Uncompromised Rural Reach, a pilot program successfully launched in India that is finding ways to use Ford vehicles and connected technologies to address critical social needs, such as health care
SUV	Sport utility vehicle
SULEV	Super Ultra-Low Emission Vehicle, a level of standards for tailpipe emissions enforced in California and states that have adopted California standards
Tank-to-wheels CO_2 emissions	A subset of well-to-wheels CO_2 emissions; includes the CO_2 generated by burning the fuel in the vehicle
TCR	The Climate Registry, a voluntary carbon-emissions reporting project
TGW	“Things Gone Wrong,” a metric measured by the Global Quality Research System (GQRS)
Tier 1 Suppliers	Suppliers sourcing directly to our assembly plants
Tier 2 Suppliers	Suppliers not sourcing directly to our assembly plants
Tier 2 and Tier 3 Emissions Standards	The U.S. federal program, starting with the 2004 model year, to control vehicle emissions standards. Tier 3 emissions standards, which are more stringent than Tier 2 standards, were proposed in 2013.
TRI	Toxics Release Inventory, an inventory of releases and transfers of certain chemicals that are required to be reported to the U.S. government
TÜV Rheinland	A German-based product-testing company
UAW	The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America
UNGC	United Nations Global Compact, a global policy initiative through which businesses agree to align their operations with 10 principles in the areas of human rights, labor, environment and anti-corruption
URP	University Research Program, a Ford program for collaborating with researchers at more than 100 universities worldwide
V2I	Vehicle-to-infrastructure communications, technologies that enable vehicles to “talk” to roadway infrastructure (such as traffic lights) via advanced Wi-Fi signals or dedicated short-range communications
V2V	Vehicle-to-vehicle communications, technologies that enable vehicles to “talk” to each other via advanced Wi-Fi signals or dedicated short-range communications
VIAQ specifications	Ford’s Vehicle Interior Air Quality specifications, which require the consideration of the air-quality and allergen impacts of the materials and components in our vehicles
VOCs	Volatile organic compounds, compounds that vaporize (become a gas) at relatively low temperature
WBCSD	World Business Council for Sustainable Development
Well-to-tank CO_2 emissions	A subset of well-to-wheels CO_2 emissions; measures the CO_2 generated by excavating the feedstocks and producing and distributing the fuel or electricity
Well-to-wheels CO_2 emissions	Accounts for emissions from the vehicle itself, as well as CO_2 emissions resulting from the production and distribution of fuel
WET	Water Estimation Tool, a Ford software program that helps facilities to predict their water usage
WHO	World Health Organization, the international organization providing leadership on global health matters
WRI	World Resources Institute, a U.S.-based nonprofit organization
ZEV	Zero Emission Vehicle, the lowest level of standards for vehicle emissions enforced in California and states that have adopted California standards