Go Further

Sustainability 2011/12

Accelerating Ahead

At Ford, we aim to Go Further. That's our brand promise. This report describes how we go further to meet the many sustainability challenges of a rapidly changing world.

Video message from Alan Mulally

CEO Alan Mulally discusses our sustainability blueprint.

Map of Our Year

View Our Sustainability Journey. Click on the icons to see Ford's sustainability-related highlights for 2011.

Sustainability at Ford

We promote sustainable business practices in our own global operations and throughout our supply chain.

OUR BLUEPRINT FOR SUSTAINABILITY

The Strategy That Drives Everything We Do

Learn how our sustainability strategy and our ONE Ford business strategy are intrinsically linked to drive our business and sustainability performance.

Read more about our strategy

OUR REGIONS

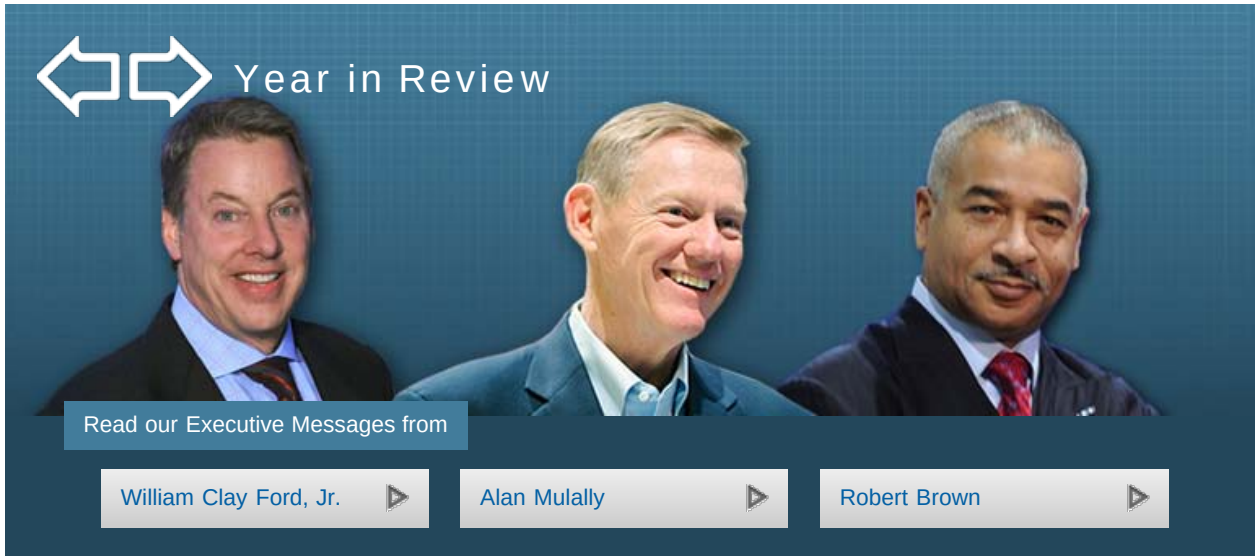
Reporting on Our Local Initiatives

This year, for the first time, read about key regional sustainability initiatives in their own sections of our full report.

Explore our regions

Go Further

Sustainability 2011/12



Welcome to the 13th 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 report provides information about this report and an overview of our sustainability performance in 2011. It includes perspectives on sustainability at Ford from our Chairman, our CEO and our new vice president for Sustainability, Environment and Safety Engineering; a summary of 2011 performance data; our goals and commitments; a "map of our year"; and discussion of assurance of this report.

About This Report

For this year's report, we did a major reorganization of the content, grouping it into the areas that we have identified as the most material from a sustainability point of view: financial health, climate change, water, vehicle safety and supply chain. We also report on "people" – our employees and communities – as they are essential to everything we do. In addition, the section called "Blueprint for Sustainability" discusses the foundation for our sustainability performance – our strategy, governance and management systems.

We also publish an eight-page summary (pdf, 4.98Mb) of this full web-based report for use by employees, customers and other stakeholders. Our most recent previous report was released in June 2011.

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. We expect our reporting to evolve further and invite your feedback on this report, and our approach to reporting, at sustaina@ford.com.

Map of Our Year

See Ford's sustainability-related highlights for 2011 – from announcing strong 2010 full year financial performance and market share gains in January to beginning production of the Ford Focus Electric in December.

New Vice President for Sustainability

In 2012, Robert Brown replaced Sue Cischke as Ford's vice president for Sustainability, Environment and Safety Engineering.

Stakeholder Review

Ceres

We implemented feedback from a stakeholder committee, convened by Ceres, that reviewed the plan for this report.

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 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 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 2011 and early 2012. The data are primarily for 2011 (for operations) and for the 2011 and 2012 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.

William Clay Ford, Jr.

"By taking a long-term view, and working to add value for all of our stakeholders, current and future, we have been successful in extremely difficult conditions. What we have learned and achieved has given us confidence as we look ahead."

As we build on three years of improved operating profits, it is clear we have emerged stronger than ever from one of the most challenging periods in the history of Ford Motor Company. Even during the most difficult economic times, we continued to invest in making vehicles that are higher in quality, safer, more fuel efficient and technologically advanced. Our unwavering commitment to improving our products throughout the recession is proof that sustainability is fully integrated into our business strategy.

In this report you will read about our ONE Ford plan, which has helped us return to profitability while transforming our Company in some very fundamental ways. We are not slowing the pace of this progress. In fact, we're accelerating ahead.

Ford is a different company than we were a few years ago. We now operate as a single global organization, drawing on the talents of our employees around the world to design and build vehicles that are truly global, and expanding our presence in rapidly growing markets. By mid-decade, five vehicle architectures will comprise about 75 percent of Ford sales worldwide. Already today, the Fiesta, Focus, the all-new Fusion, the Escape SUV and the compact Transit Connect van are global Ford models, sold in multiple regions with only minor variations tailored to specific local markets.

This approach provides unprecedented economies of scale and an opportunity to offer customers worldwide new technologies and product features that were historically reserved for premium vehicles. The global approach is also behind the rapid transformation of our vehicle fleet into a leader in fuel economy and other attributes our customers value. And it's helping keep us on track to meet our goal to reduce carbon dioxide (CO_2) emissions from our vehicles in every region in order to address the climate change issue. For example, through the use of our EcoBoost® turbocharged, direct-injection gas engines and other features spelled out in our Sustainable Technologies and Alternative Fuels plan, we have improved the fuel economy of our U.S. vehicles by nearly 17 percent since 2006.

Global platforms are also behind the launch of the Ford Focus all-electric vehicle in early 2012 in the U.S. and late 2012 in Europe. By the end of 2012 we will introduce the C-MAX Hybrid and C-MAX Energi plug-in hybrid in the U.S., followed by the Fusion Energi in 2013. By 2013, we will triple our production capacity for electrified vehicles in North America compared to 2011. This includes hybrids, plug-in hybrids and pure battery electric vehicles, with most sales coming from hybrid-electric vehicles.

With our unprecedented launch of new electrified vehicles, nearly one-third of Ford's vehicle lines in the U.S. will feature a model with 40 mpg or more in 2012 – a claim no other full-line automaker can match. This is part of Ford's strategy to offer customers a number of powertrain options – both conventional gasoline technologies and electrified options – within existing vehicle lines. We call this the "Power of Choice," and it's an important part of our vision to further evolve our fleet and our

company.

We've also made considerable progress in our manufacturing operations. Between 2000 and 2010, for example, our manufacturing facilities worldwide reduced overall energy use by more than 40 percent, decreased CO_2 emissions by 48 percent and cut water use by 60 percent. These more-efficient facilities have saved us money and helped us further strengthen our balance sheet.

In 2012, we were recognized by the U.S. Environmental Protection Agency for our efforts to reduce CO_2 at our manufacturing facilities. Our plan sets us on a course to reduce greenhouse gas emissions by 30 percent per vehicle manufactured between 2010 and 2025 – on top of the more than 30 percent reduction we achieved from 2000 to 2010.

Even as we find ways to address longstanding sustainability issues, new challenges have emerged. I have often stated that our goal is to make mobility affordable in every sense of the word – economically, environmentally and socially. But several global trends threaten this vision.

Right now, there are about 1 billion vehicles on the road worldwide. With more people and greater prosperity, that number could grow to 4 billion by mid-century. If we don't change the current transportation model, the increase in these vehicles could present a serious sustainability challenge and could undermine attempts to ensure access to mobility for all those who need it.

To address this issue, we will once again need new technologies, as well as new ways of looking at the world. To begin with, we need to view the automobile as one element of a much broader transportation ecosystem, and look for new ways to optimize the entire system. We need vehicles that can communicate with each other, and with the world around them, to make driving safer and more efficient. In today's increasingly mobile society, developing ways to safely integrate communications technology into the driving experience has become a top priority.

Ford entered the wireless communications arena in 2007 with our SYNC® system, which was developed in partnership with Microsoft. Our Ford Evos Concept vehicle, which we introduced last year, explores the next level of connection. It uses Internet cloud technology to help provide drivers with a more personalized and seamless connection to the outside world.

Looking even further into the future, we have outlined our Blueprint for Mobility. This plan, which we announced in early 2012, is our vision of what sustainable transportation will look like in 2025 and beyond, as well as the near-, mid- and long-term steps we must take to get there. We believe a truly sustainable long-term solution will require a global transportation network that enables wireless communication among vehicles and infrastructure. This system would use real-time data to enhance personal mobility on a massive scale, bringing all modes of travel into a single network that links together public and personal transportation. Pedestrian walkways, bicycles, buses, airplanes, trains, automobiles – in our vision of the future everything would be fully integrated to save time, conserve resources and lower emissions.

The mobility challenge is not the only one that lies ahead for our Company and our industry. Global economic conditions remain volatile. Energy and commodity costs are rising once again. The world is looking for business leadership and accountability on issues ranging from the availability of water to human rights and corporate governance, and we are actively involved in all of these areas.

Whatever challenges we face in the future, sustainability will remain a central element of our business strategy. By taking a long-term view, and working to add value for all of our stakeholders, current and future, we have been successful in extremely difficult conditions. What we have learned and achieved has given us confidence as we look ahead. Building on the solid foundation we have established, Ford Motor Company will go further, continuing to deliver Great Products, a Strong Business and a Better World.

William Clay Ford, Jr.
Executive Chairman

Message from Alan Mulally

Watch our video introducing Sustainability at Ford

Play Video

"Our goal is to create an exciting, viable, profitably growing company for the good of all of us. We're continuing to do that by making a full family of best-in-class vehicles, in terms of quality, and fuel efficiency, and safety and really smart design – like SYNC® and MyFord® – and of course the very best value by using our scale worldwide."

Alan R. Mulally
President and Chief Executive Officer
June 2012

Download transcript of Alan's video
(pdf, 82kb)

Robert Brown

"A decade ago, a 'great' product – one that led in the marketplace – wasn't necessarily a green one. Now, in an era of volatile fuel prices, consumers expect outstanding fuel economy as a given."

Dear readers,

I am pleased to offer my perspective as Ford's new vice president for Sustainability, Environment and Safety Engineering. Before taking on this role, I held a similar position in Ford's European operations. My predecessor, Sue Cischke, very ably defined and developed Ford's sustainability approach. During her tenure, sustainability moved from the periphery to the center of our strategy for succeeding in the marketplace and helping to address global challenges.

Our strategy is based on our One Ford plan, the outcomes of which we define as Great Products, Strong Business and Better World. Like everything in the sustainability arena, these three outcomes are inextricably linked and interconnected.

In a fiercely competitive global automotive market, it's not enough to make good products. They have to be great. They have to leverage the latest technology, offer outstanding quality and reliability and excite the imagination of consumers. And they have to do this against the backdrop of varying regulations, infrastructure and consumer preferences around the world. We think our global vehicles – such as the Ford Fiesta and the Ford Focus – are doing just that. Great products lead to profitable growth and a strong business that continues to invest in innovation and the development of more outstanding products. This, in turn, sets the stage for Ford to contribute to a better world by reducing the footprint of our products and operations. We also contribute by generating employment and economic development and by joining with others to support strong communities and tackle a wide range of sustainability issues. Below I dig a little deeper into how sustainability fits into each of these areas.

Great Products

At Ford, we define *great products* as those that are high quality, green, safe and smart. That's what consumers expect of us in markets all over the world. Over the past few years we have been working to deliver these attributes through our One Ford plan, which is transforming Ford into a company that not only has global presence, but global products. At the same time, the quality of our vehicles has steadily improved to a top-tier position.

Green

A decade ago, a "great" product – one that led in the marketplace – wasn't necessarily a green one. Now, in an era of volatile fuel prices, consumers expect outstanding fuel economy as a given. We have steadily cut the carbon footprint of the vehicles we produce, and we have measurably reduced their environmental footprint in myriad other ways, too. The following are among the steps we are taking.

- Implementing our Blueprint for Sustainability's technology and fuels plan, which sets out dozens of improvements that add up to substantial gains in fuel economy. For example, we are deploying 1.5 million EcoBoost™ engines globally by 2013; these engines deliver a 10 to 20 percent improvement in fuel economy over conventional petrol engines. In addition, we are bringing to market a range of hybrid, all-electric and plug-in electric versions of popular global vehicles, including the Focus and Fusion. The electric vehicles we offer cost less to operate than conventional vehicles, and electricity can be made from a variety of fuels, which helps to address energy security concerns.
- Increasing the amount of renewable and recycled materials we use to make our vehicles. For example, all of our vehicles manufactured in North America have soy foam seat cushions and backs, a technology pioneered by Ford. We try to incorporate renewable and recycled materials in a thoughtful way, using analytical tools to ensure that, for a given application at a given manufacturing location, the alternative material delivers real environmental benefits.
- Continuing to reduce tailpipe (non-CO_2) emissions. Vehicles today are many times cleaner, in terms of emissions, than those of a few decades ago. But we are committed to making them cleaner still, while responding to tightening regulatory requirements, including California LEV III, Euro Stage VI and China Stage IV. Our improvements help to safeguard air quality and protect human health in congested urban areas.
- Reducing our manufacturing footprint, including energy and water use and greenhouse gas emissions. During 2011 and early 2012, we set new targets for cutting water, energy use and greenhouse gas emissions in our operations. We have developed a comprehensive water strategy that focuses our efforts in the areas of greatest water use and vulnerability to shortages.

Safe

We are developing new safety and driver assist technologies at a rapid rate. Technologies currently in use in our vehicles can help drivers maintain a safe following distance to the vehicle ahead of them, alert drivers to objects behind them while backing up and alert them if they're drifting out of a lane, among other things. Many additional technologies are on the drawing board. These types of technologies are making driving new vehicles safer than ever. Already, our vehicles have earned a number of safety distinctions. For example,

- To date in the U.S., Ford has earned more "Top Safety Picks" from the Insurance Institute for Highway Safety – a total of 78[1] – than any other manufacturer in the seven-year history of that crash-testing program.
- The new European Ford Ranger, designed by engineers in Ford of Australia, is the first and only pick-up to achieve a five-star rating in the European New Car Assessment Program (EuroNCAP). It scored 89 percent for overall safety – the best score ever earned by a pick-up and one of the highest scores recorded by EuroNCAP for any type of vehicle. Moreover, the new Ranger achieved the highest rating (81 percent) of any vehicle ever tested by EuroNCAP for pedestrian protection.
- The Ford Focus now has an industry-leading total of four EuroNCAP "Advanced Awards" for offering Lane Keeping Aid, Active City Stop, Forward Alert and Driver Alert technologies.
- Our available rear-seat inflatable safety belts, which are an automotive industry exclusive, have won numerous awards.

Of course, sustainability challenges relating to vehicle safety go beyond the vehicles themselves. Encouraging safer driving is also essential, and we are doing that through our Ford Driving Skills for Life (FDSFL) program. FDSFL focuses on teen drivers in the U.S. and new drivers in other regions. The program has reached 50,000 people across Asia and Africa, with another 12,000 expected in 2012. In the U.S., 35,000 drivers participated in 2011 alone.

Smart

In many ways, cars these days are rolling computers. The technology onboard a vehicle helps us achieve all of our sustainability goals by monitoring and optimizing fuel use, alerting drivers to hazards, controlling passive safety technology – the list goes on. In addition, next-generation connected vehicles will open up new possibilities for vehicle-to-vehicle communications, which will enable safer roadways and reduce congestion, along with all the social and environmental costs related to it.

Strong Business

The success of our products allows us to continue to invest in innovation and product development – supporting a strong business in the present and for the future. A strong business is also one that looks ahead to the changes that will be needed to respond to a rapidly evolving global marketplace. We know that as the global population grows and standards of living rise, new modes of mobility will be needed in urban and rural areas alike. Designing and delivering innovative vehicles will continue to be important. But to contribute to solutions, we will also draw on other capabilities of our business, including our expertise in information technology and vehicle connectivity.

In early 2012, we set out our thinking on these topics in our Blueprint for Mobility, which outlines a series of steps we will take to contribute to developing and implementing new models of mobility that reduce environmental impacts and meet social needs.

Better World

From volunteering in our communities to greening our products and operations, many of the actions we routinely take across our company result in a better world.

In addition, a key part of our responsibility as sustainability leaders is to scan the horizon to identify sustainability risks and opportunities and respond effectively in a way that demonstrates leadership. A good example of this is the work we have done in the past decade to promote human rights and environmental responsibility in our supply chain. During 2011 we continued this work. Internally, we revised and renamed Policy Letter 24. This Policy is now named the Code of Human Rights, Basic Working Conditions, and Corporate Responsibility, reflecting its broad scope and applicability to our own operations and our supply chain. Externally, we have led efforts by the Automotive Industry Action Group to develop a comprehensive, industry-wide approach to social and environmental responsibility in the automotive supply chain.

We also developed a partnership with the U.S. Department of State, an Indian nongovernmental organization and an Indian government agency to conduct a pilot project aimed at improving health care for pregnant women in remote villages in India. The project, called Sustainable Urban Mobility with Uncompromised Rural Reach, demonstrates how we use our vehicles and connected technologies to contribute to a better world by addressing critical social needs, such as health care.

Building a sustainable future for all will require the continued integration of sustainability into our business, collaboration across sectors and the development of partnerships to achieve shared goals. It also requires continuing engagement with, and feedback from, our stakeholders. We hope you find this report interesting and informative, and we welcome your feedback.

Sincerely,

Robert Brown
Vice President, Sustainability, Environment and Safety Engineering

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1. Historic totals include all brands and entities owned and controlled by the manufacturer during the 2006–2012 calendar years, including Ford, Lincoln, Mercury and – through the 2010 model year – Volvo. Totals do not include Mazda.

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

	2009	2010	2011
Global Quality Research System "things gone wrong" (3 months in service), total "things gone wrong" per 1,000 vehicles[1]	n/a	n/a	1447
Global Quality Research System customer satisfaction (3 months in service), percent satisfied[2]	n/a	n/a	68
Sales satisfaction with dealer/retailer, Ford brand, U.S., net promoter score	82	84	85
Sales satisfaction with dealer/retailer, Ford brand, Europe, net promoter score	77	79	82
Service satisfaction with dealer/retailer, Ford brand, U.S., net promoter score	74	74	74
Service satisfaction with dealer/retailer, Ford brand, Europe, net promoter score	67	59	64
Shareholder return – Bloomberg total return analysis, percent	337	68	-36
Net income/loss, $ billion	2.7	6.6	20.2
Sales and revenue, $ billion	116	129	136

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Climate Change and the Environment

	2009	2010	2011
Ford U.S. fleet fuel economy, combined car and truck, miles per gallon (higher mpg reflects improvement)	27.1	26.9	27.8
Ford U.S. fleet CO_2 emissions, combined car and truck, grams per mile (lower grams per mile reflects improvement)	326	329	318
Ford Europe CO_2 tailpipe emissions per vehicle, grams per kilometer (based on production data for European markets)	139	128	n/a
Worldwide facility energy consumption, billion kilowatt hours	15.1	16.1	15.5
Worldwide facility energy consumption per vehicle, kilowatt hours per vehicle	3,272	3,087	2,778
Worldwide facility CO_2 emissions, million metric tons	5.0	5.2	5.1
Worldwide facility CO_2 emissions per vehicle, metric tons	1.07	1.01	0.91
North American Energy Efficiency Index, percent (higher percentage reflects improvement)	18.3	14.4	2.6[3]

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Water

	2009	2010	2011
Global water use, million cubic meters	24.1	26.2	26.8
Global water use per vehicle produced, cubic meters	5.7	5.1	4.7

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Vehicle Safety

	2009	2010	2011
U.S. safety recalls, number per calendar year (including legacy vehicles on the road for 10+ years)	8	7	13
U.S. units recalled, number of million units (including legacy vehicles on the road for 10+ years)	4,522,000	551,000	3,339,000
IIHS Top Safety Picks by model year, percent of Ford Motor Company Vehicles receiving the honor	n/a	n/a	52[4]

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Supply Chain

	2009	2010	2011
Number of individuals trained in working conditions requirements and sustainability management systems	1,773	2,149	2,414
Assessments to date	615	751	834
Training cascade to workforce, individuals trained	183,052	318,593	372,998

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People

	2009	2010	2011
Employee satisfaction, Pulse survey, overall, percent satisfied	68	68	69
Overall dealer attitude, Ford, relative ranking on a scale of 1–100 percent (winter/summer score)	71/80	85/83	84/82
Overall dealer attitude, Lincoln Mercury, relative ranking on a scale of 1–100 percent (winter/summer score)	66/71	62/71	61/64
Ford Motor Company Fund contributions, $ million	20	19	20
Corporate contributions, $ million	9	10	10
Volunteer Corps, thousand volunteer hours	100	112	110
Lost-time case rate (per 100 employees)			
Americas	0.9	0.8	0.9
Asia Pacific and Africa	0.2	0.1	0.1
Europe	0.5	0.3	0.3

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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. The North American 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 against our annual 3 percent energy-efficiency target. A year 2000 baseline was used through 2006; the baseline was reset to year 2010 starting in 2011. The year 2011 improvement indexed against the year 2010 baseline was 2.6, indicating a 2.6 percent improvement in energy efficiency from 2011 to 2010. Higher percentage reflects improvement.
4. In 2012, this figure rose to 75 percent.

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

Financial Health

Goal/Commitment	2011 Progress	On Track?
Execute our "ONE Ford" transformational plan to create a leaner, more-efficient global enterprise.	• Continued to strengthen our balance sheet in 2011, a milestone year. Increased Automotive gross cash, reduced debt and improved liquidity. Announced 2011 profit sharing and resumption of quarterly dividends.	ON TRACK
Achieve profitability in 2012.	• For 2011, reported full-year pre-tax operating profit of $8.8 billion – our third year in a row of improved annual operating profits.	ON TRACK
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. Retooled facilities that previously built large trucks and SUVs to instead manufacture smaller, more energy-efficient vehicles.	ON TRACK
Reverse the trend of losing money on small-car production in the U.S.	• Boosted production of smaller-sized vehicles in North America. Improved costs to competitive levels. Enhanced revenues through class-leading fuel economy, safety performance and quality.	ON TRACK
Set new goals under "Blueprint for Mobility" in early 2012.	• In this Blueprint, analyzed what transportation will look like in 2025 and beyond, and identified the types of technologies, business models and partnerships needed to get us there.	IN PROCESS
Quality		
Overall goal: Deliver best-in-the-world quality; strive to be best in class in every phase of vehicle development, from design to pre-delivery.	• We had mixed-quality performance in 2011. "Things gone wrong" (TGW) degraded in North America but improved in all our other regions. Global warranty spending improved overall but had mixed results on a region-by-region basis. Customer satisfaction improved or remained steady in all our operating regions.	NOT ON TRACK
Continue to reduce "things gone wrong" (TGW) and warranty spending.	• In 2011, saw full-year "things gone wrong" (TGW) degrade slightly in North America, due to new entertainment and communication technologies and transmission issues. TGW improved in our Europe, Asia Pacific and Africa and South America regions by 4 percent, 44 percent, and 29 percent respectively. • Global warranty spending decreased by 4 percent in 2011 compared to 2010. Warranty spending increased in North America and Asia Pacific and Africa from 2010 to 2011 by 14 percent and 8 percent respectively but decreased in Europe and South America by 21 percent and 1 percent respectively.	NOT ON TRACK
Continue to improve customer satisfaction with our vehicles and sales and service divisions.	• Overall, saw customer satisfaction remain unchanged in the U.S. and increase by 3 percent in Europe. • Sales satisfaction improved in both the U.S. and Europe. • Service satisfaction remained the same in the U.S. and improved in	ON TRACK

Europe.

Climate Change and the Environment

Goal/Commitment	2011 Progress	On Track?
Climate Change – Products		
Do our share to stabilize carbon dioxide (CO_2) concentrations in the atmosphere at 450 ppm, the level that many scientists, businesses and government agencies believe may avoid the most serious effects of climate change.	Reduced fleet-average CO_2 emissions from our 2011 model year for U.S. new vehicles by 9 percent compared to the 2007 model year. Reduced fleet-average CO_2 emissions for European vehicles by 8.5 percent from the 2006 to 2010 calendar years.	
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.	
Climate Change - Manufacturing		
Continuously improve energy efficiency including a specific goal to improve North America manufacturing energy efficiency 3 percent from 2010 to 2011.	Met commitment to improve facility energy-efficiency emissions by 3 percent in 2011 vs. 2010. In fact, improved global facility energy efficiency by 10 percent in 2011 vs. 2010. Improved energy efficiency in North America by 2.6 percent compared to 2010 baseline.	
Reduce global facility CO_2 emissions per vehicle by 30 percent by 2025 compared to a 2010 baseline.	Reduced 2011 CO_2 emissions by 8 percent per vehicle compared to 2010.	
Reduce average facility energy use per vehicle globally by 25 percent between 2011 and 2016.	New goal in 2011	
Environment - Products		
Expand use of the Product Sustainability Index (PSI) and Design for Sustainability principles in product development.	• Ford Fiesta, introduced in North America in 2011, designed using PSI. • 2012 Ford Focus designed using PSI.	
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.	• Expanded use of soy foam seating; introduced soy foam head restraints. From 2011 on, all vehicles produced in North America have soy foam seating. • Expanded use of recycled-content fabrics for seats and headliners. • Continued to develop strategy requiring recycled plastics and textile materials for many applications in North America. • Developed strategic principles for expanding the use of recycled and renewable materials that seek to minimize total lifecycle impacts.	
Increase the use of and certification for allergy-tested and air-quality-friendly interior materials.	Established global design guidelines for allergy-free materials and in-vehicle air filtration that are being migrated across product lines.	
Environment - Manufacturing		
Reduce water use.	(See Water section of Goals Table.)	
Reduce CO_2 emissions.	(See Climate Change section of Goals Table.)	
Reduce landfill disposal, with 2011 and 2012 targets of 10 percent reduction per vehicle per year.	Reduced landfill disposal in 2011 by more than 19 percent per vehicle compared to 2010.	
In 2012, maintain VOC emissions from painting at North American Assembly plants at 23 grams/square meter or less.	Achieved 2011 VOC emissions at North American Assembly plants of 20.4 grams/square meter.	

Water

Goal/Commitment	2011 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 percent from 2010 to 2011. Developed additional year-over-year water-efficiency targets, including a 2012 target of a 5 percent water-use reduction per vehicle.	

Vehicle Safety

Goal/Commitment	2011 Progress	On Track?
Design and manufacture vehicles that achieve high levels of performance in public domain testing and offer innovative safety and driver assist technologies.	• Remained an industry leader in public domain evaluations. Since the Insurance Institute for Highway Safety (IIHS) first began awarding Top Safety Picks, Ford Motor Company has earned more than any other manufacturer, with a total of 78.* • Received an industry-leading total of four EuroNCAP Advanced Awards for the Ford Focus, for offering Lane Keeping Aid, Active City Stop, Forward Alert and Driver Alert technologies. • For the new European Ford Ranger, achieved a five-star rating in the EuroNCAP assessment – the first and only pick-up to do so. Moreover, the Ranger achieved the highest rating of any vehicle ever tested by EuroNCAP for pedestrian protection. • Continued to provide innovative safety and driver assist features, including rear-seat inflatable safety belts, Blind Spot Information System, Lane Keeping System and Curve Control, among many others.	
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.	
Provide information, educational programs and advanced technologies to assist in promoting safe driving practices.	Continued to invest in Ford Driving Skills for Life (FDSFL) program, focusing on teen drivers in the U.S. and first-time drivers of all ages in our Asia Pacific markets. The program includes modules on avoiding distracted driving. Offered an upgraded 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. For the 2012 model year, MyKey is available on nearly all Ford Motor Company retail vehicles in North America, and its availability has expanded to other regions.	
Play a leadership role in vehicle safety research.	Continued involvement in interactIVe, a research project in Europe with 29 partner organizations that seeks to support the development and implementation of accident avoidance systems. Maintained major research alliances with the Massachusetts Institute of Technology, the University of Michigan, Northwestern University and more than 100 universities worldwide; safety is a central thrust of this work.	
Play a leadership role in research and development relating to connected vehicles.	Continued to take part in collaborative, active-safety research in Europe known as Safe Intelligent Mobility – Test Field Germany (sim^{TD}) 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). Continued to take part in collaborative research in the U.S. via the Crash Avoidance Metrics Partnership (CAMP) and Vehicle Infrastructure Integration Consortium (VIIC).	

1. *Historic totals include all brands and entities owned and controlled by the manufacturer during the 2006–2012 calendar years. For Ford Motor Company this includes Ford, Lincoln, Mercury and – through 2010 model year – Volvo. Totals do not include Mazda.

Supply Chain

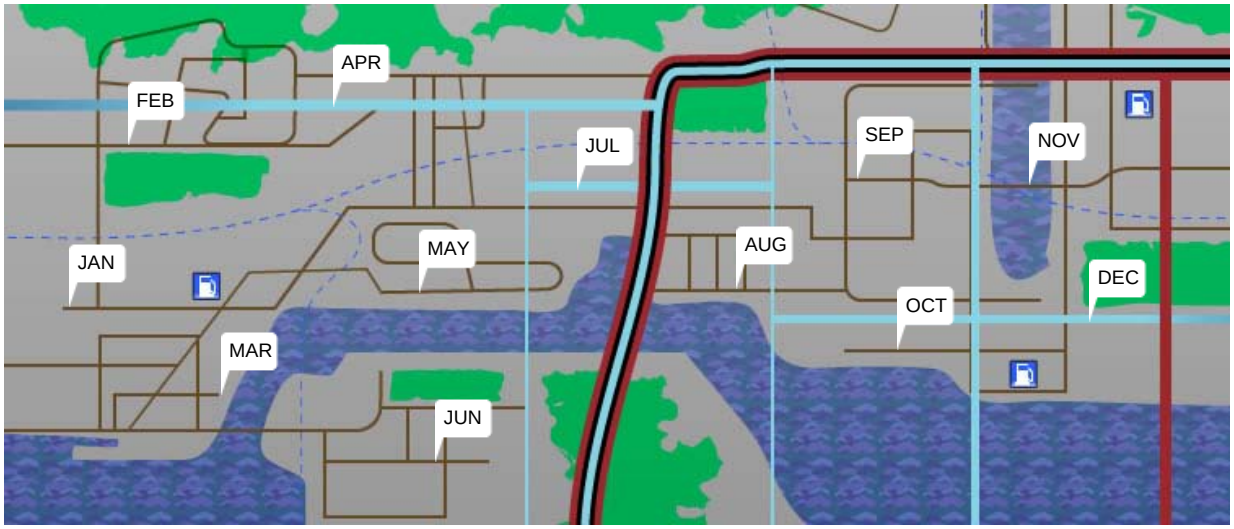
Goal/Commitment	2011 Progress	On Track?
Overall goal: Leverage Ford's complex, global supply chain to make a positive impact in the markets in which we do business.	• As part of this approach, have held supplier trainings on working conditions and related sustainability issues. • Since 2003, have conducted more than 830 third-party audits of existing and prospective Tier 1 suppliers in 20 countries. • Continued to collaborate with key production suppliers to align policies and practices. Twenty percent of our strategic suppliers have met all three Ford milestones: they have codes of conduct in place that are aligned with international standards and supported by robust management systems governing their own operations and their supply chain.	
Facilitate development of an industry-wide approach to	• In 2011, together with other automakers through the AIAG, trained	

ensuring sound working conditions and respect for human rights in the supply chain.	387 supplier companies in India, Mexico, Turkey and Brazil. Of these, 111 were Ford suppliers. • Through these and prior-year trainings and subsequent cascading processes in these four countries, have impacted more than 208,500 workers and 52,000 Tier 2 suppliers. • Since program inception across all countries trained, now exceed 1,750 Ford suppliers trained, total, with more than 373,000 workers and 76,500 Tier 2 suppliers impacted.	
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 128 suppliers, up from 35 in 2010, regarding greenhouse gas emissions, and achieved an 86 percent voluntary response rate.	

Health & Safety

Goal/Commitment	2011 Progress	On Track?
Health		
Improve focus on employee personal health through access to health risk appraisal and health promotion programs.	• Have 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 now included as a core component of U.S. health benefit programs.	
Safety		
Fatalities target is always zero.	• In 2011, for the first time in Ford's history, did not have an employee work-related fatality during the calendar year. Tragically, however, experienced two contractor fatalities – one in Brazil and another in Russia.	
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.	• Saw slight deterioration in a major safety indicator – the lost-time case rate – from 0.54 in 2010 to 0.57 in 2011. Experienced 143 serious injuries among our direct employees, compared to 111 the previous year. However, were back on track with serious injuries and lost-time/DART performance in the first quarter of 2012.	

Map of Our Year



View Our Sustainability Journey

Click on the white icons to see Ford's sustainability-related highlights for 2011 – from announcing strong 2010 full year financial performance and market share gains in January to beginning production of the Ford Focus Electric in December.

Community Giving

In 2011, contributed a total of nearly $30 million, slightly above the 2010 figure. Of that amount, $19.9 million was in the form of grants awarded by Ford Motor Company Fund; the remainder was direct corporate giving.

Employee Volunteerism

During 2011, some 25,000 Ford employees and retirees in 45 countries and 19 states provided more than 110,000 hours of work on more than 1,200 community service projects – the equivalent of $2.35 million of in-kind corporate contributions.

Working with Dealers

In 2011, continued to right-size our dealer network to current and expected U.S demand, particularly in some of our largest metropolitan areas.

Top Safety Picks

In 2011, earned Top Safety Picks from the Insurance Institute for Highway Safety for 12 Ford Motor Company vehicles.

Driver Education

In 2011 in the U.S., saw 35,000 teen drivers take part in Ford Driving Skills for Life.

January

Strong Financials

Announced strong financial results delivered in 2010, enabling great progress in reducing debt and strengthening our balance sheet. Ended 2010 with Automotive gross cash exceeding our debt by $1.4 billion, an improvement of more than $10 billion compared to year-end 2009.

Market Gains

Announced that Ford full-year sales increased 19 percent in 2010, while market share increased for the second year in a row – for the first time since 1993.

Auto Show Award

Earned Truck of the Year honor for the all-new Ford Explorer at Detroit's North American International Auto Show.

February

Lighting Retrofit
Kicked off a lighting efficiency retrofit at global headquarters, expected to enable an energy reduction of 18.2 million kilowatt hours.

Driver Education
Invested another $1 million to expand Ford Driving Skills for Life – our teen driver education program – to 15 states.

Salute to Dealers
Recognized six dealer principals with awards for their unparalleled generosity and commitment to their communities.

Ford Fiesta Safety
Saw Fiesta become 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 – the U.S., China and Europe.

March

Ethics Award
Honored for the second 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.

Sales Milestone
For only the second time in more than a decade, surpassed General Motors in monthly sales in the U.S.

Flexible Manufacturing
Began production of the all-new global Ford Focus, built for North American customers in a completely transformed Michigan Assembly Plant. With a $550 million investment, the plant features an environmentally friendly workplace with flexible manufacturing capability and a specially trained staff motivated to deliver the fuel-efficient vehicle to the marketplace.

April

Reporting Award
Named a finalist in the Ceres/Association of Chartered Certified Accountants North America Awards for Sustainability Reporting, for our 2009-10 Sustainability Report.

Vehicle Sales
Sold 12,593 Ford Explorers during April 2011, up 138 percent compared to April 2010. For the fourth-straight month, the Explorer continues to be the fastest-turning vehicle in the showroom.

First Quarter Earnings
Completed additional debt reduction action with a $3 billion redemption of our Trust Preferred securities while increasing our liquidity by $2.8 billion. Announced investment of $400 million and retention of 3,750 full-time jobs at the Kansas City Assembly Plant for a new vehicle to be built at the facility.

Global Development
Signed a Memorandum of Understanding with Sollers to form a 50:50-owned joint venture to expand production and distribution of Ford vehicles in Russia. Remained the top-selling automaker in Canada, reporting an 8.6 percent year-over-year sales increase.

May

Advanced Technology
Announced development of a car seat that can monitor a driver's heartbeat, opening the door to a wealth of health, convenience and even life-saving potential. A joint project undertaken by experts from Ford's European Research and Innovation Centre in Aachen, Germany, and RWTH Aachen University, the seat uses six embedded

Community Involvement
As part of its longstanding commitment to Hispanic arts and culture, Ford Motor Company Fund and Community Services supported "American Sabor: Latinos in U.S. Popular Music," a traveling Smithsonian exhibit on view at Sacramento Public Library in Sacramento, California.

Global Products
Introduced the 2011 Fiesta to China, to strengthen our product lineup in that country. The 2011 Fiesta offers world-class safety in a small car by leveraging Ford's global engineering tools and advanced safety technologies. More than 50 percent of the body structure is constructed with high-strength steel. These components add rigidity and save weight, increasing

Sales Improvements
Announced that Ford's U.S. retail sales were up 19 percent versus May 2010, and we gained retail market share for the 19th time in the last 20 months.

sensors to detect electrical impulses generated by the heart.

structural efficiency while also helping to maximize fuel efficiency. Safety is also enhanced by an array of features including six airbags, ABS and a rear parking sensor.

June

Fun Technology
Began offering access to an on-demand weekly fantasy baseball update through Ford SYNC®, the company's award-winning, hands-free in-vehicle connectivity system. Available through SYNC's Traffic, Directions and Information Services, you can now get a list of weekly hitting and pitching leaders using simple voice commands.

Electrifying News
Announced that Ford is tripling production capacity of our electrified vehicle lineup through 2013, further boosting volumes of our all-new C-MAX Hybrid and C-MAX Energi Plug-in Hybrid, which begin production next year. We will grow our electrified vehicle production capacity to more than 100,000 annually by 2013 thanks to increasing consumer appetites for green vehicles and desires for stylish new Focus-sized vehicles.

Sustainability Reporting
Released our 12th annual Sustainability Report, giving the public a comprehensive look at our progress on environmental and social issues. The 2010/2011 report, titled "Blueprint for Sustainability: Driving Change," provides updates on the Company's progress in five key areas, including sustaining Ford, climate change, water use, vehicle safety and driver assist technologies, and supply chain.

Community Involvement
Forgotten Harvest and Gleaners Community Food Bank of Southeastern Michigan partnered with Ford Motor Company Fund, the Charter One Foundation and other corporate and community donors to provide 2 million meals to hungry southeast Michigan children over the summer through the "Hunger Free Summer" campaign. During the 10-week campaign, donations were matched dollar for dollar, up to $50,000 by Ford Motor Company Fund and Community Services.

July

CEO of the Year
CEO Alan Mulally lauded as *Chief Executive* magazine's 2011 CEO of the Year.

Class-Leading Fuel Economy
For the all-new Ford Explorer with the 2.0L EcoBoost® engine, received an official EPA fuel economy rating of 28 mpg in highway driving, the best in its class.

"Cool Car"
At the Gathering of Eagles charity auction July 28, during EAA 2011 AirVenture Oshkosh, unveiled and sold the truly unique "Blue Angels" edition 2012 Mustang GT. The custom rear spoiler's vertical tailfins, the "screaming yellow" gloss accents, and inclusion of the Blue Angels script and crest all are drawn from Navy aircraft.

Tire Recycling
Announced that Ford will source environmentally friendly seals and gaskets made by Recycled Polymeric Materials (RPM). The gaskets and seals are derived from 25 percent post-consumer, recycled tires and 17 percent bio-renewable content made from soy. More than 2.2 million pounds of rubber from recycled tires has been made into RPM seals and gaskets and more than 210,000 used tires have been recycled.

August

Solar Power
Teamed with SunPower Corp. to offer an industry-first solar panel system that allows Focus Electric and C-MAX Energi owners to "Drive Green for Life" by providing customers with enough clean, renewable energy to offset the electricity used to charge the car. These high-efficiency solar panels generate approximately 50 percent more electricity than

Engine of Change
Announced that the Ford F-150 with the powerful and fuel-efficient 3.5L twin-turbo V6 EcoBoost® engine is outselling all other competitive six-cylinder trucks combined. According to J.D. Power and Associates, the V6 EcoBoost and the 3.7L, 302-horsepower V6 (another new engine introduced for the F-150) accounted for a 79.5 percent market share of V6 full-sized

Innovative Partnership
Announced that we will equally collaborate with Toyota on the development of an advanced new hybrid system for light truck and SUV customers. Signed a memorandum of understanding on the product development collaboration, with the formal agreement expected by next year.

Eco Innovation
With Lear, introduced a new head restraint foam that replaces 25 percent of the polyol with soy. Seventy-five percent of Ford's North American vehicles feature bio-foam in the head restraints. All Ford Motor Company vehicles built in North America use bio-foam in the seat cushions and backs, resulting in a significant reduction of petroleum-based foam and

conventional panels.

trucks sold in July.

greener Ford products.

September

Global Week of Caring
Held our sixth-annual Global Week of Caring, a weeklong series of volunteer events around the world coordinated by the Ford Volunteer Corps. During one week in early September, more than 12,100 Ford employees on six continents in 45 countries and 19 states contributed more than 55,100 hours of their time to over 244 volunteer projects touching 1.5 million lives.

Breaking Ground
Broke ground on a new, state-of-the-art manufacturing facility in Sanand, Gujarat, India. The new facility will create 5,000 jobs.

Military Honors
Awarded the Employer Support Freedom Award – the U.S. Department of Defense's highest recognition given to companies for support of employees serving in the National Guard and Reserve.

Expanding Renewables
Announced a new, castor-oil-based bio-foam dashboard material to be used on the Ford Focus in the U.S. The foam was developed in partnership with supplier BASF.

October

Adding Jobs
As part of a new labor agreement, pledged to add 12,000 hourly jobs in the U.S. by 2015 – 5,740 more than we previously announced to be added by year-end 2012.

Ford Ranger
For the new European Ford Ranger, earned a five-star rating in the EuroNCAP assessment – the first and only pickup to do so.

Safety Award
Won the "Breakthrough Product Award" from Popular Mechanics magazine for our available rear-seat inflatable safety belts.

Engine Debut
Revealed that the 1.0L I-4 Ecoboost® engine will make its North American debut on the all-new Ford Escape, which is expected to deliver best-in-class fuel economy.

November

Product News
Debuted the all-new Ford Escape at the Los Angeles Auto Show. The 2013 Escape offers versatility and value and includes clever features designed to make life easier. Thanks to EcoBoost® engine technology, it also offers superior fuel economy.

Eco Awareness
Entered into an exclusive collaboration with SHFT.com, the award-winning multimedia platform founded by actor and filmmaker Adrian Grenier and producer Peter Glatzer. Ford found that 46 percent of Americans do not know the difference between a hybrid, plug-in hybrid and electric vehicle; through our collaboration with SHFT.com and our "power of choice" philosophy, we aim to inspire people to make smarter environmental decisions.

Reducing Distracted Driving
To help give parents peace of mind, added a feature to our MyKey® technology to block incoming phone calls and deter text messages when teens are behind the wheel. Available on all 2011 vehicles with SYNC with MyFord Touch®, Do Not Disturb will be available as a feature parents can control through MyKey beginning with the Explorer in early 2012.

Driver Assistance Technology
Introduced an innovative Lane Keeping System with three features designed to help drivers stay in control. Driver Alert can notify drivers with a coffee cup light on the instrument cluster if it detects signs of drowsiness. Lane Keeping Alert warns the driver by vibrating the steering wheel and sounding a chime. And Lane Keeping Aid warns the driver by applying torque at the steering wheel to direct the vehicle back into the lane.

December

Sales Milestone
For the Ford brand, surpassed the 2 million mark for U.S. vehicles sales, making it the best-selling brand in America.

Financial Progress
Announced the reinstatement of a quarterly stock dividend of 5 cents per share.

Profit Sharing
Distributed profit-sharing payments to approximately 41,600 eligible U.S. hourly employees.

Electric Production
Began production of the new Ford Focus Electric, the first five-passenger, all-electric car to achieve more than 100 MPGe (miles per gallon equivalent).

Water Reductions

Set a new water-reduction target of 30 percent per vehicle by 2015.

Assurance

For this report and our previous five 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 selected 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.

Related Links

External Websites

- Ceres

In reviewing Ford's reporting, the Committee considered whether the Company adequately reported on its sustainability performance and key impacts, including goals, targets, systems, data and initiatives. The Committee met once by teleconference to review and comment on the report plan.

The Committee made suggestions based on its review of previous reports and the outline for this report. Major points of feedback and Ford's responses are shown below.[1]

Recommendation	Response
Sustainability – Taking a Systems-thinking Approach: Many sustainability issues are interconnected and overlap. Ford should demonstrate in its report how its sustainability strategy is built on recognition of the interconnected nature of many sustainability issues; how it balances the complexities of these issues; and how these issues might impact Ford's corporate strategy, as well as vehicle and sustainability goals.	Ford takes a systems approach to many key issues, including climate change and mobility. The issues of water and supply chain were elevated to key material issue status in part because they cut across environmental, community, human rights and other issues. In this report, we have tried to strengthen discussion of these interconnections and the systematic approach we take to understanding and managing them.
Sustainability Governance and Strategy: Stakeholders were pleased to see clear linkages between the sustainability strategy and the Company's business plan. The group encouraged Ford to more clearly demonstrate ROI on sustainability initiatives and strengthen the business case for sustainability. The Company should also consider how it could further communicate sustainability risk and opportunities to the mainstream investor community, by including key ESG metrics in its 10-K and other investor communications. Finally, the group would like Ford to provide a clearer description of how executive compensation is linked to sustainability performance.	For this report, we created a strategy section to show the connection of our ONE Ford business plan to our sustainability strategy. In our executive messages and in the sections on the material issues we discuss the risks and opportunities posed by the issues. We also added some further detail to the discussion in the Governance section of how sustainability performance and compensation are linked.
Public Policy: Stakeholders strongly encouraged Ford to increase disclosure regarding its public policy positions, participation in industry associations and political contributions. In the absence of comprehensive national climate policy, opportunities for support at the state and local level may still exist. Stakeholders suggested Ford seek out these opportunities and continue working to align its public policy with its sustainability strategy.	We continue to expand coverage of our engagement on public policy issues. In particular, in the current report we include additional information on our public policy activities in the various global regions in which we work.
Supply Chain Sustainability: Continued progress and leadership in supply chain sustainability was identified as a major opportunity for Ford. Stakeholders look for Ford to continue advancing industry supply chain initiatives and evolving its own approach, based on learning from other sectors and internationally recognized frameworks such as the Guiding Principles on Business and Human Rights. The group looks to Ford to support SEC rules on conflict minerals when published and to discourage unnecessary lawsuits.	In this report, we discuss Ford's three-pronged approach to engaging with suppliers and encouraging a joint industry approach to supply chain sustainability. We also discuss our work with the Organisation for Economic Co-operation and Development and others to develop effective ways to eliminate conflict minerals in the global automotive supply chain.
Water: Stakeholders were pleased to see that Ford intends to sign the CEO Water Mandate, as well as set a 2015 water goal. The group would like Ford to provide greater detail around how it prioritizes water-stressed regions, and noted a leadership opportunity for Ford spearheading, or participating in, efforts to manage water issues beyond its fence line.	The Water section, which was new in our previous report, has been expanded in the current report to provide more insight into Ford's holistic and integrated approach to the issue. We have also provided results of our analysis of water availability.
Diversity, Inclusion and Employee Engagement: The group	This year's report includes new umbrella language in the reorganized

noted the value of a strong workforce to Ford and the materiality of how Ford engages its employees and creates an inclusive and innovative culture. Ford should increase disclosure in all these areas, demonstrating how it is managing these issues to gain competitive advantage.	People section around the importance of diversity and inclusion and directs readers to Ford.com for a history of diversity at the Company. The new language addresses the importance of a diverse workforce in terms of meeting diverse customer needs. In addition, the report features a discussion of the Company's new "Go Further" campaign, which is designed, in part, to better engage employees in Ford's delivery of innovative products.
Goals, Metrics and Impact: Stakeholders noted Ford's new water goal and the intent to develop new operational goals. Ford should make those goals public, medium- and long-term, quantitative and measurable and ensure they cover not only environmental issues, but also key issues such as diversity, human rights and supply chain. The group also suggested providing additional context (e.g., total number of suppliers, year-on-year data) when reporting on existing goals; and revisiting and strengthening some goals (e.g., vehicle greenhouse gas goal). Ford should also consider how it can supplement its reporting with more discussion of the outcome and impact of its efforts, including candid descriptions of challenges preventing the achievement of goals and targets.	Ford has adopted new mid-term targets for water and energy use, facility greenhouse gas emissions and landfill disposal. Context around these is provided in the relevant sections of the report. We provide extensive discussion of our product greenhouse gas emission goal and progress toward it. We also revised and simplified the goals table.
Report Format: Overall, stakeholders were pleased with the reorganization of the material issues section of Ford's sustainability report this year and encouraged Ford to consolidate and streamline content, where feasible. The goals and data tables were noted as useful, but could be strengthened (see specific Goals bullet). Stakeholders suggest Ford add an option to its Toolbox that provides readers an opportunity to share direct feedback on the report.	This year's report has been organized around the material issues to emphasize their importance and make information about them more readily accessible. In the course of reorganizing the content, We inventoried all existing content and streamlined report content as possible. For example, we reduced the number of major sections from 12 last year to nine this year. We also reduced or eliminated content as possible, focusing especially on reducing content that is available in other Ford communications such as financial reports. The contact link appears on every page of the report.

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.
- Nearly two-thirds of Ford's global facility greenhouse gas (GHG) emissions are third-party verified. All of Ford's North American GHG emissions data from 1998 to 2010 were externally verified by FINRA, the auditors of the NASDAQ stock exchange, as part of membership in the Chicago Climate Exchange. 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 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 World Resources Institute's GHG 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 the 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.

1. This summary 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

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. This year, we’re using 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.

This section is intended to provide 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 how we focus our strategy and reporting on Ford’s most important sustainability issues and those of most interest to report users and our stakeholders through a structured materiality analysis, which has been used to identify our most material sustainability issues. Finally, the bulk of this section is devoted to 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.

3rd

year in a row as one of the World’s Most Ethical Companies

More than

83,000

individuals have completed the Code of Conduct online training

Climate Award

We were the only automaker to receive the Climate Leaders Award from the U.S. Environmental Protection Agency.

Ford’s Perspective

In this section, we continued to broaden coverage of public policy issues.

OUR BLUEPRINT FOR SUSTAINABILITY

- Our Strategy
  - Sustainability Strategy
- Materiality Analysis
- Our Value Chain and Its Impacts
- Governance

Our 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 with profitable growth for all. The *output* of ONE Ford is:

- Great Products, defined as those that are high quality, green, safe and smart.
- Strong Business, based on a balanced portfolio of products and global presence; and
- Better World, accomplished through our sustainability strategy.

As detailed in the Financial Health section, Ford has made a remarkable turnaround over the last several years, fueled by disciplined adherence to the ONE Ford plan and resulting in the reinvention of our Company as a highly competitive force in the global automotive industry.

Looking ahead, industry-wide vehicle sales are expected to rise significantly in the next few years, driven by accelerated expansion in developing markets, recovery in mature markets and sales of smaller and more fuel-efficient vehicles. We expect our sales to increase to about 8 million units by mid-decade, up about 50 percent from 5.3 million units in 2010. By 2020, nearly one-third of our sales will come from the fast-growing Asia Pacific and Africa region, more than doubling the current percentage of global sales volume we achieve in that region.

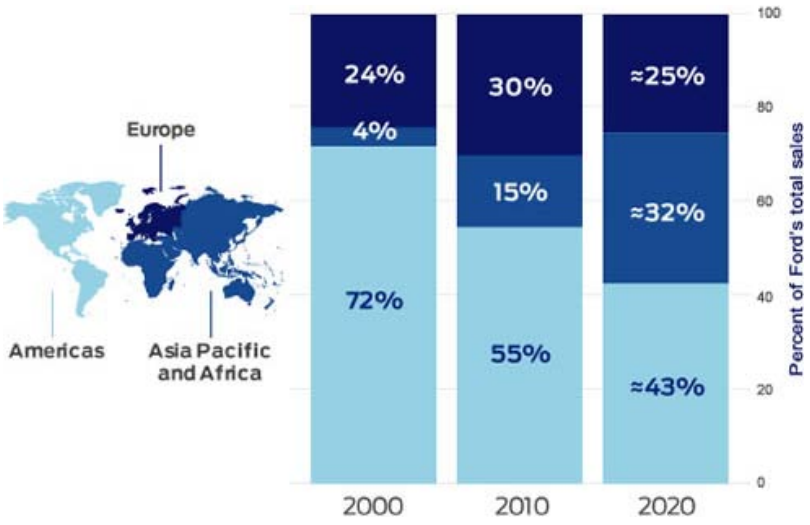
Related Links

This Report

- Financial Health

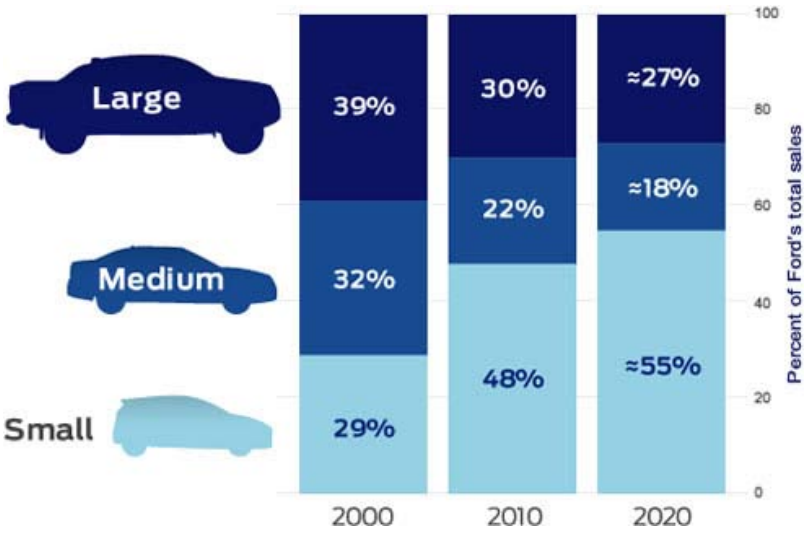
Ford's Changing Geographic Mix of Volume

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.



Regardless of vehicle or region, Ford's global vehicles will 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 will 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 new global brand promise and our approach as we accelerate ahead.

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. Back in 2000, we convened a diverse group of stakeholders to advise our Company on sustainability issues that should be the focus of our strategy. From that consultation came a series of initiatives on the issues of climate change and human rights. Over the years, we continued to reach out to stakeholders to engage on key issues and, in the mid-2000s, formalized our issue-identification process through a materiality analysis that assesses the importance of a range of sustainability issues to stakeholders and the Company. 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.

We have a dedicated department, called Sustainability & Vehicle Environmental Matters, which oversees sustainability strategy development and implementation by identifying emerging challenges and opportunities and mobilizing resources within the Company to address them. Our philosophy is that sustainability issues should be integrated into business processes and managed by the business 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.

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 climate change strategy is guided by a cross-functional team called Sustainable Mobility Governance. This team has identified goals including our pledge that all of our vehicles will be best in class (or among the best in class) in fuel economy, along with a long-term goal to contribute to climate stabilization, as discussed in the Climate Change section. 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.

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Materiality Analysis

We update our materiality analysis every two years. Ford conducted an update of its materiality analysis for the 2010/11 Sustainability report, adding key inputs, replacing outdated inputs and gathering feedback from internal experts. In addition, a Ceres Stakeholder Committee reviewed the analysis and provided comments. The analysis will be updated again for out 2012/13 report.

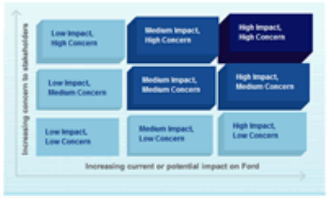
Not surprisingly, in the interval since we conducted the analysis for the 2008/09 Sustainability Report, some new issues emerged some dropped out and others were recast or reorganized.

In general, there was less concern about Ford's financial viability among non-Company stakeholders, likely reflecting Ford's improved financial performance. Water emerged as a material issue – in particular, the need for a water strategy that varies by risk and region. Supply chain issues also rose in importance for Ford and other stakeholders, including issues related to the sustainability of raw materials and the environmental and human rights performance of suppliers. These topics are now at the highest level of importance under the new issue category of "supply chain sustainability."

In addition to these major trends, changes to the most material issues (upper right part of the materiality matrix) included the following:

- Financial issues were reorganized into two primary categories: Ford's financial health and Ford's future competitiveness. Some issues that were formerly in the upper-right segment – including health care legacy costs, labor costs and access to capital – declined in importance, likely because of actions Ford has taken to manage them. As a result, many financial issues were reorganized into a more general "costs and risks" category. This category and "product competitiveness" issues remained at the highest level of importance for Ford and stakeholders. Labor costs, access to capital, the threat of competitor bankruptcy and dealer and supplier viability – new issues that were added in the last analysis – were less important than in the last analysis.
- Mobility issues – including urban mobility, mega-cities and urban-to-rural migration – were included under the category of "Ford's future competitiveness," as they present challenges for traditional models of personal mobility and opportunities to develop new products and services. Also in the future competitiveness category are emerging markets products and services strategy, an issue of increasing importance as Ford continues to grow globally.
- Ford's climate change strategy remains of the highest importance to the Company and stakeholders alike, but the issues comprising the grouping have shifted. For example, as anticipated global carbon markets failed to emerge, emissions trading/cost of carbon decreased in importance to Ford and its stakeholders. Climate change policy remains of high concern.

Materiality Matrix



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

Overview of Analysis

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 significantly updated the analysis done for our 2008/9 Sustainability Report using a three-step process.

Identification of Material Business Issues

We developed a list of more than 500 issues, grouped into 15 topics. The issues were identified by reviewing Ford business documents as well as comments from employees, dealers and our major external stakeholders: customers, communities, suppliers, investors and 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 like summaries of stakeholder engagement sessions as well as documents that represent stakeholder views more broadly, such as the Global Reporting Initiative G3 Guidelines, the Ceres Roadmap to Sustainability and reports from socially responsible and mainstream investors.

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 five-year timeframe, and degree of concern to stakeholders (by stakeholder group). 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."

We consider the issues in the upper-right sector to be the most material. 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

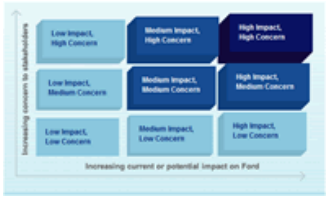
The draft matrix was reviewed internally. It was then reviewed and revised again based on a meeting of a Ceres stakeholder committee that included representatives of environmental and other NGOs, socially responsible investment organizations and a supplier company.

Use of the Analysis

We have used 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. 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



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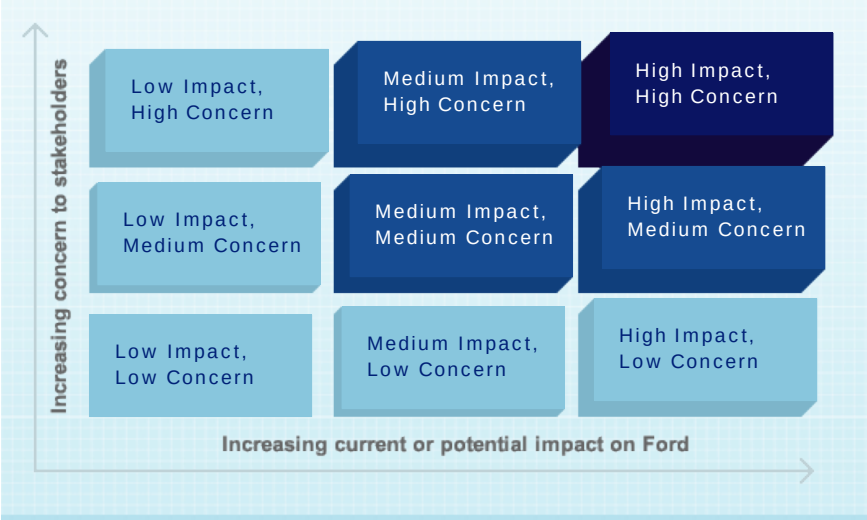
Materiality Matrix



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.

Reporting Priorities

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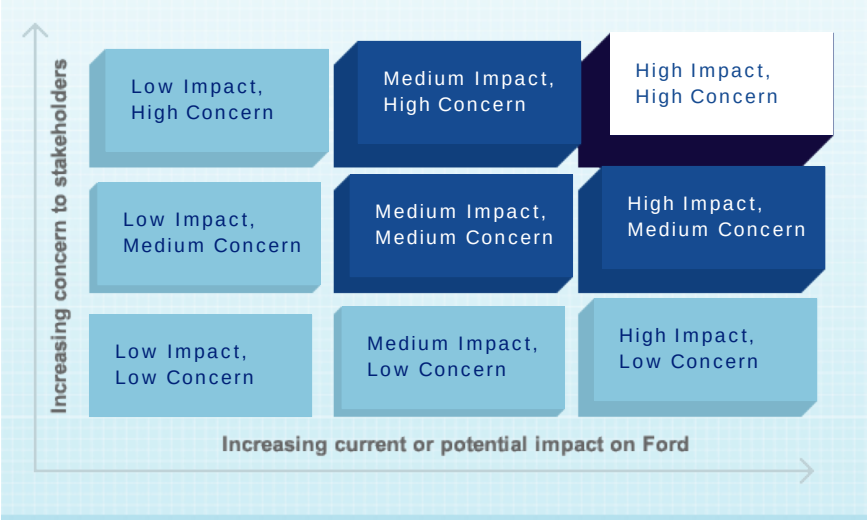

High Impact, High Concern

14 material issues have been identified at this level

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 increasing interest to government and investors.
Trend (from previous analysis)	Already at the highest level
More information	Climate Change Ford's Climate Change Strategy Climate Change and the Environment Electrification: A Closer Look Operational Energy and Greenhouse Gas Emissions

Vehicle GHG emissions

Definition/Description	Ford's product actions to meet its CO_2 target.
Comments	Increasingly driven by regulatory requirements as well as Ford's voluntary product CO_2 goal; of increasing interest to government and investors.
Trend (from previous analysis)	Already at the highest level
More information	Climate Change Vehicle Ford's Goals, Commitments and Status Fuel Economy and CO_2 Emissions Data

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- Sustainable Technologies and Alternative Fuels Plan

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; of increasing interest to government and investors.
Trend (from previous analysis)	Already at the highest level
More information	Ford's Goals, Commitments and Status Ford's Greenhouse Gas Emissions Climate Change Risks and Opportunities Ford's Climate Change Strategy Improving Fuel Economy Fuel Economy and CO_2 Emissions Data

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 growing interest in alternatives to fossil fuels and domestic energy and the challenges of transitioning from traditionally fueled vehicles to plug-in vehicles.
Trend (from previous analysis)	Already at the highest level
More information	Migration to Alternative Fuels and Powertrains Electrification: A Closer Look Public Policy Positions: Electrification

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 left by lack of U.S. federal climate legislation.
Comments	With passage of new CAFE requirements in U.S. and new EU requirements in Europe, focus is increasingly on economy-wide policy approaches.
Trend (from previous analysis)	Already at the highest level
More information	U.S. Climate Change Policy U.S. Greenhouse Gas and Fuel Economy Regulation European Climate Change Policy Climate Change Risks and Opportunities Emissions Trading Policy Ford's Greenhouse Gas Emissions Public Policy Positions

WATER

Water strategy

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	Added as a material issue when we last updated our materiality analysis for the 2010–11 report, reflecting higher profile of this issue for Ford and stakeholders.

Trend (from previous analysis)	NEW
More information	Water

FORD 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 stakeholders. Reorganized and renamed since last materiality analysis.
Trend (from previous analysis)	Already at the highest level
More information	Product Competitiveness Improving Fuel Economy

Risk and cost management

Definition/Description	Broad concerns about Ford's financial performance, with a focus on costs and cost-related risks.
Comments	A top concern for Ford and stakeholders. Reorganized slightly and renamed since last materiality analysis. Includes health care legacy costs, labor costs, energy security and access to capital, formerly top-right issues on their own in the previous analysis.
Trend (from previous analysis)	Already at the highest level, though some of the specific issues have shifted up or down in importance
More information	Financial Health Health as a Strategic Advantage Public Policy

FORD FUTURE COMPETITIVENESS

Sustainable mobility

Definition/Description	Ford's approach to increasing challenges of urban mobility, congestion, urbanization and mega-cities, as well as rural mobility and economic opportunity.
Comments	Reorganized – formerly under a stand-alone mobility category; now an element of Ford's future competitiveness strategy.
Trend (from previous analysis)	Already at the highest level
More information	Mobility Solutions

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)	Ford increasingly emphasizing market opportunity for safer products
More information	Vehicle Safety and Driver Assist Technologies Public Policy Positions: Vehicle Safety

SUPPLY CHAIN SUSTAINABILITY

Supplier relationships

Definition/Description	Includes importance of Ford's financial variability to suppliers and vice versa, and importance of strong relationships as well as established policies and performance commitments.
Comments	Increased importance in this analysis, especially to Ford and suppliers.
Trend (from previous analysis)	Increased in importance to Ford and stakeholders
More information	Creating a Sustainable Supply Chain

Supply chain environmental sustainability

Definition/Description	Includes need to address carbon and water issues in supply chain relationships.
Comments	Largely a new issue from last analysis, reorganized and of higher importance to Ford and stakeholders.
Trend (from previous analysis)	NEW
More information	Supply Chain Environmental Management

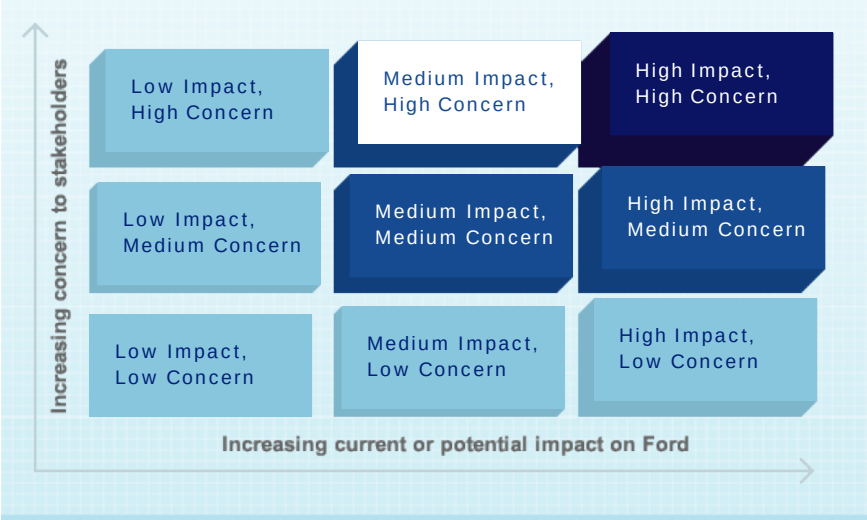
Sustainable raw materials

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.
Comments	Added as a material issue when we last updated our materiality analysis for the 2010–11 report, reflecting increased prominence of these concerns.
Trend (from previous analysis)	NEW
More information	Sustainable Raw Materials Sustainable Materials Product Sustainability Index

Human rights in the supply chain

Definition/Description	Issues covered by Ford's working conditions code; need for industry cooperation.
Comments	Issues have been reorganized in this analysis under umbrella of supply chain sustainability. 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 Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility

Materiality Matrix



Medium Impact, High Concern

No material issues have been identified at this level

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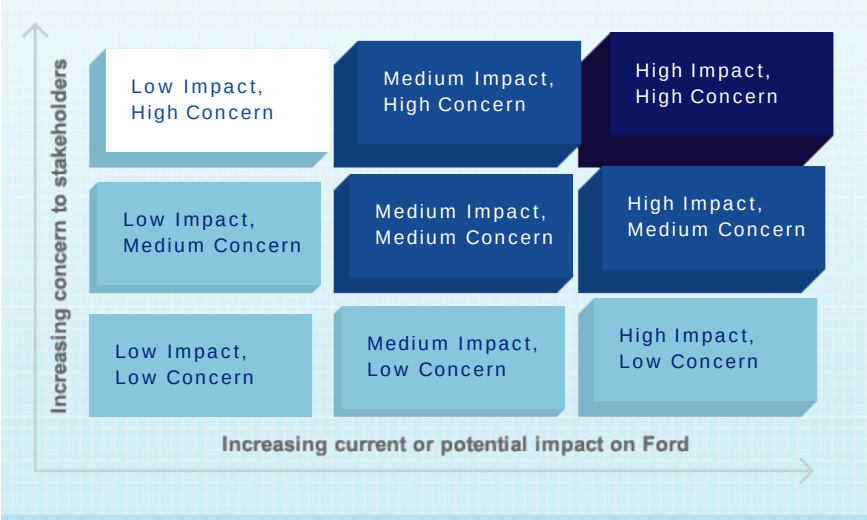

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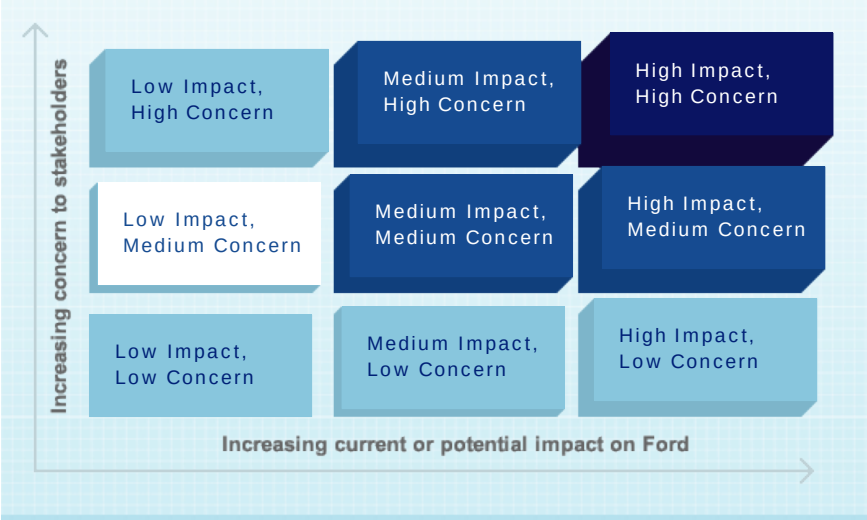
Low Impact, High Concern

No material issues have been identified at this level

Materiality Matrix



Low Impact, Medium Concern

Two material issues have been identified at this level

GOVERNANCE

- Shareholder concerns (resolutions)

OPERATIONS

- Land and nature

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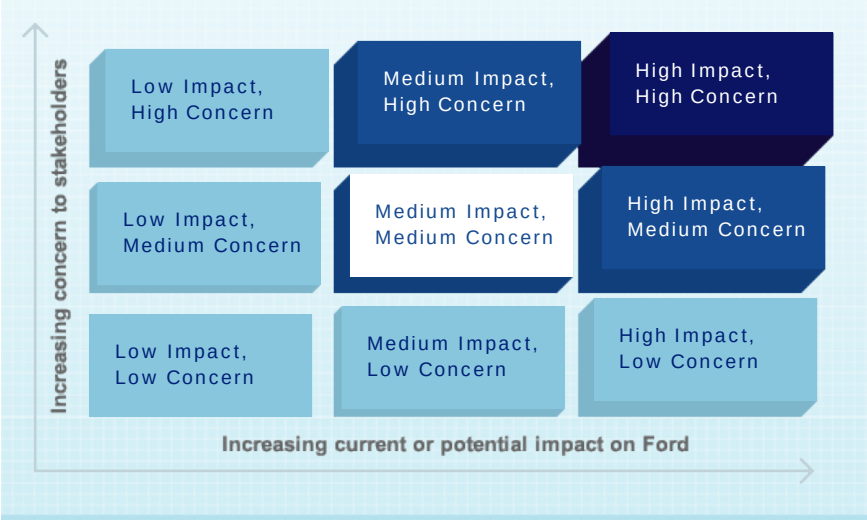

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Medium Impact, Medium Concern

Eight material issues have been identified at this level

FORD FUTURE COMPETITIVENESS

Innovation management

Definition/Description	Includes R&D investment and new business models.
Comments	Of interest to investors.
Trend (from previous analysis)	NEW
More information	Ford Future Competitiveness Innovation Data

COMMUNITY

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)	Lower level of concern to stakeholders
More information	Communities Human Rights in the Supply Chain: Ford's Global Working Conditions Program Financial Health

PUBLIC POLICY

Political payments and contributions

Definition/Description	Includes need for consistent and transparent public policy positions 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, are showing increasing interest and advocacy for “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 Participation in the Policy-Making Process Policy Letters and Directives

OPERATIONS

Energy use and oil consumption operations

Definition/Description	Operations/facilities: concerns about cost and availability; energy security.
Comments	Lower level of concern to Ford reflects active and successful management towards targets.
Trend (from previous analysis)	Lower level of concern to Ford
More information	Ford’s Goals, Commitments and Status Greening Our Operations Operational Energy and Greenhouse Gas Emissions

Waste generation and management

Definition/Description	Includes Ford’s operational waste generation, management and disposal.
Trend (from previous analysis)	Higher concern for stakeholders
More information	Waste Management Waste Data

Air emissions (other than GHGs)

Definition/Description	Includes VOC and ozone-depleting emissions from operations.
Comments	Lower level of concern to Ford reflects active and successful management towards targets.
Trend (from previous analysis)	Lower level of concern to Ford Higher concern for stakeholders
More information	Non-CO_2 Tailpipe Emissions Non-CO_2, Facility-Related Emissions

Hazardous pollutants

Definition/Description	Hazardous substances in products, manufacturing and supply chain.
Comments	Increasing public interest.
Trend (from previous analysis)	Same position
More information	Sustainable Materials Non-CO_2 Tailpipe Emissions Waste Management Emissions (VOC and Other) Data

Non-CO_2, Facility-Related Emissions

WORKPLACE

Diversity/equal opportunity

Definition/Description	Diversity of Ford Board and management; harassment programs and monitoring.
Comments	Relatively high concern to NGOs/stakeholders who see diversity as global strategic issue.
Trend (from previous analysis)	Same position
More information	Diversity and Inclusion Corporate Governance – Board of Directors Working Conditions in Ford Plants U.S. Employment of Minority-group Personnel and Women at Year-end Supplier Diversity Development

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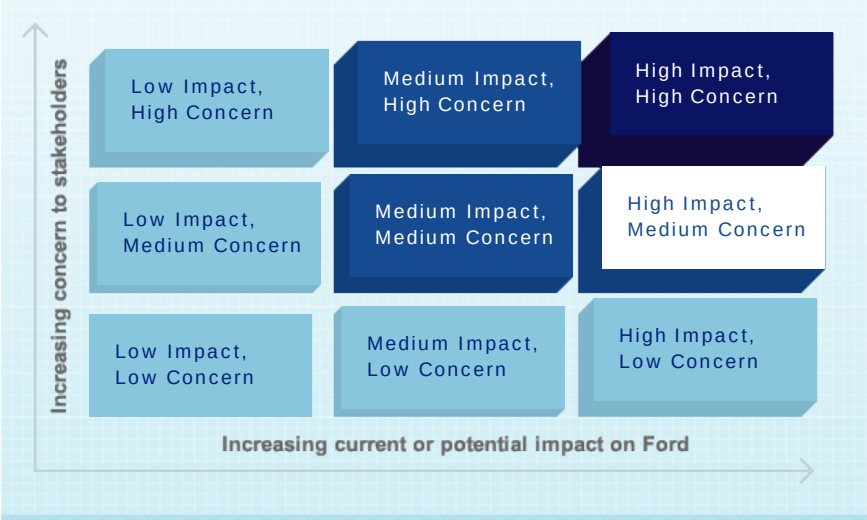

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High Impact, Medium Concern

20 material issues have been identified at this level

SUSTAINABILITY VISION, GOVERNANCE AND MANAGEMENT

Sustainability vision, governance and management

Definition/Description	Includes governance structures, goals and indicators, business case, stakeholder engagement, reporting.
Comments	Governance added to vision and management, reflecting growing investor and NGO interest in integrating sustainability into business processes.
Trend (from previous analysis)	Same position
More information	Letter from William Clay Ford, Jr. Message from Alan Mulally Letter from Robert Brown Sustainability Governance Sustainability Management Climate Change Governance Working Conditions in Ford Plants How We Manage Vehicle Safety Environmental Management Financial Health

GOVERNANCE

Ethical business practices

Definition/Description	Concerns covered by codes of conduct, e.g., corruption and anti-competitive behavior.

Comments	Among stakeholders, of most concern to investors.
Trend (from previous analysis)	Same position
More information	Ethical Business Practices Corporate Governance – Board of Directors Sustainability Governance

Human rights strategy

Definition/Description	Includes Ford's policies and practices related to human rights.
Comments	This issue has been newly categorized as a governance issue, reflecting its mainstreaming into Ford's business.
Trend (from previous analysis)	Lower level of concern to stakeholders
More information	Human Rights in the Supply Chain: Ford's Global Working Conditions Program Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility

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	Climate Change Risks and Opportunities Climate Change Policy and Partnerships Public Policy Positions

FORD FINANCIAL HEALTH

Alignment of products 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	Reduced in importance to stakeholders, still of highest concern to Ford.
Trend (from previous analysis)	Lower level of concern to stakeholders
More information	Financial Health

Manufacturing efficiency

Definition/Description	Includes reduced complexity of products, lean and flexible manufacturing, and flexible work rules.
Comments	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

Quality

Definition/Description	Product quality and customer service/customer relationship management.
Comments	Lower concern to stakeholders may reflect Ford's dramatically improved quality record.
Trend (from previous analysis)	Lower level of concern to stakeholders

More information	▪ Customer Satisfaction and Quality ▪ Product, Quality and Service Data

FORD FUTURE COMPETITIVENESS

Emerging markets products and services 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.
Trend (from previous analysis)	Lower level of concern to stakeholders
More information	▪ Mobility Solutions ▪ Focus on Asia ▪ 2011 Sales and Highlights

WATER

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	▪ Water

CLIMATE CHANGE

Cleaner vehicle technology

Definition/Description	Ford's development of low-carbon technologies, including hybrids, electric vehicles, clean diesel, fuel cells; also emerging technologies like nanotechnology.
Comments	Lower stakeholder interest, may reflect increased action from automakers in this area.
Trend (from previous analysis)	Lower level of concern to stakeholders
More information	▪ Sustainable Technologies and Alternative Fuels Plan ▪ Vehicle ▪ Greening Our Products

OPERATIONS

Operational environmental management

Definition/Description	High-level environmental operational concerns, including environmental management, environmental compliance.
Comments	Environmental compliance a concern to communities. Increased importance to Ford reflects management focus on achieving environmental targets.
Trend (from previous analysis)	Increased in importance to Ford
More information	▪ Greening Our Operations ▪ Ford's Greenhouse Gas Emissions

- Manufacturing

GHG emissions – operations

Definition/Description	Includes cost of controlling GHG emissions.
Comments	Less of a concern than GHG emissions from vehicles, but rated high for Ford and NGOs/stakeholders.
Trend (from previous analysis)	Same position
More information	Ford's Greenhouse Gas Emissions Ford's Goals, Commitments and Status Ford's Climate Change Strategy Operational Energy and CO_2 Emissions Data

Other operational environmental issues

Definition/Description	Includes spills, nuisances (noise), and pre- and post-production logistics.
Trend (from previous analysis)	Increased in importance to Ford and stakeholders
More information	Greening Our Operations

PRODUCT

Tailpipe emissions

Definition/Description	Air-quality impacts of vehicle emissions other than GHGs; trend toward greater regulation.
Comments	High concern to customers/NGOs/stakeholders; impact on Ford due to increased and inconsistent regulation.
Trend (from previous analysis)	Same position
More information	Non-CO_2 Tailpipe Emissions Ford's Goals, Commitments and Status Sustainable Technologies and Alternative Fuels Plan Tailpipe Emissions Data

Environmentally preferred materials

Definition/Description	Cradle-to-cradle approach; use of renewable, recycled, recyclable materials.
Comments	Formerly "sustainable materials."
Trend (from previous analysis)	Same position
More information	Sustainable Materials

Lifecycle assessment

Definition/Description	Includes the need for defensible lifecycle assessment processes.
Comments	Issue added when we last updated our materiality analysis for the 2010–11 report. Reflects growing interest in lifecycle assessment among consumers and other stakeholders, with a particular focus on GHG emissions and water.
Trend (from previous analysis)	NEW
More information	Design for Lifecycle Sustainability End of Life Water Quantifying Our Environmental Impacts

WORKPLACE

Workplace health and safety

Definition/Description	Health and safety management systems; ergonomics.
Comments	Emerging issue is managing health and safety impacts of downsizing.
Trend (from previous analysis)	Same position
More information	Workplace Health and Safety Human Rights in the Supply Chain Working Conditions in Ford Plants Workplace Safety Data

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

Employees/labor practices/decent work

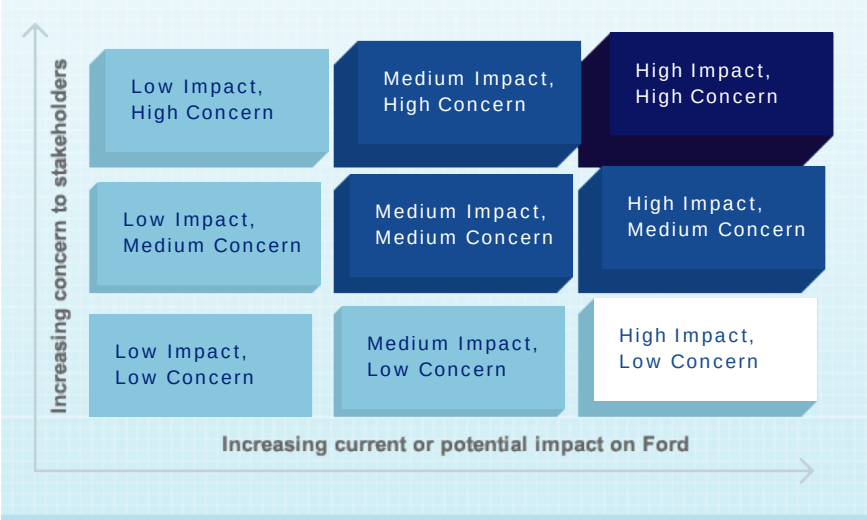
Definition/Description	Ford's employment practices, including wages, wage ratios, benefits, permanent v. temporary positions; training and education; turnover; impact of aging workforce.
Comments	High concern to communities and investors.
Trend (from previous analysis)	Increased in importance to Ford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

COMMUNITY ENGAGEMENT

Community engagement

Definition/Description	License to operate, NGO relationships and specific community concerns like 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)	Increased in importance to Ford Lower level of concern to stakeholders
More information	Communities

Materiality Matrix



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High Impact, Low Concern

Five material issues have been identified at this level

CLIMATE CHANGE STRATEGY

- Clean/alternative fuels
- Other climate change issues

PRODUCT

- End-of-life management
- Vehicle interior air quality
- Compliance

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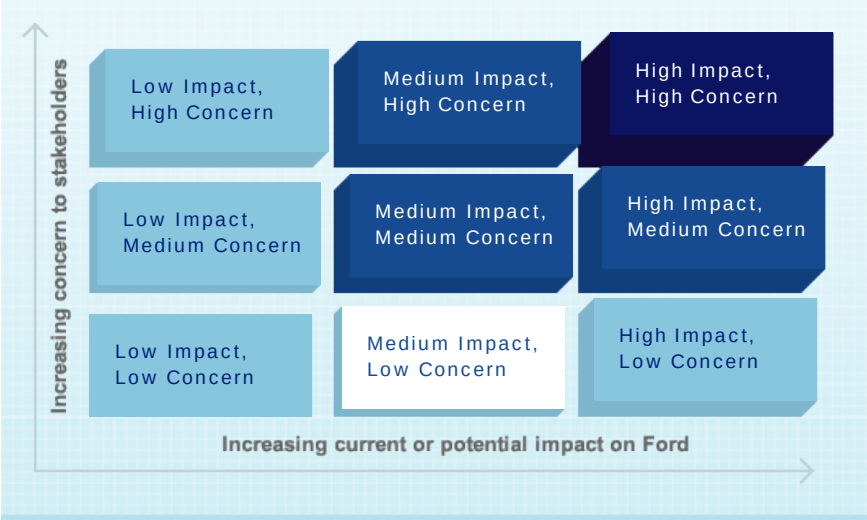
  - Overview of Analysis
  - Materiality Matrix
- Our Value Chain and Its Impacts
- Governance

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

Medium Impact, Low Concern

Seven material issues have been identified at this level

FORD FINANCIAL HEALTH

- Dealer viability and competitiveness
- Supplier viability and competitiveness

PRODUCT

- Labeling
- Noise
- Customer privacy
- Marketing communications/demand creation/advertising

VEHICLE SAFETY

- Emerging market vehicle and road safety

OUR BLUEPRINT FOR SUSTAINABILITY

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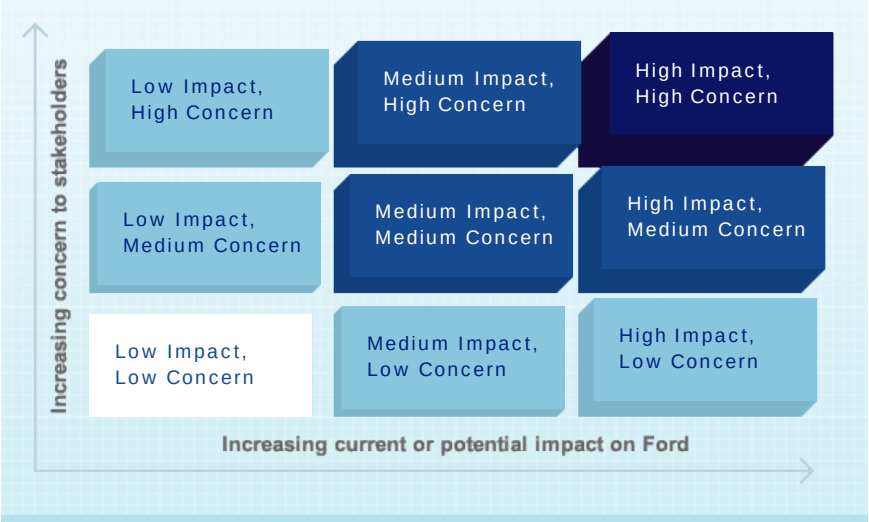
Materiality Matrix



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

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

OUR BLUEPRINT FOR SUSTAINABILITY

- Our Strategy
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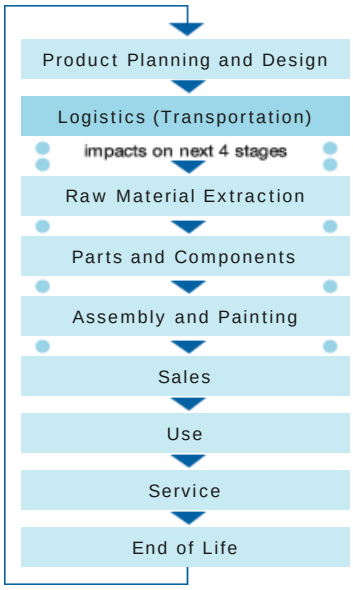
Our Value Chain and Its Impacts

As a major multinational enterprise, our activities have far-reaching impacts on environmental, social and economic systems. The diagram below organizes the issues by the major stages of our value chain. In this report you will also find a "materiality analysis" which prioritizes the most significant issues in our value chain.

Some issues are not shown in this diagram because they do not pertain to a particular lifecycle stage.



Value Chain: Overview

A number of broad sustainability challenges set the context for all of the lifecycle stages. These issues apply across the value chain:

- Population growth
- Urbanization
- Poverty
- Education
- Gender equality
- Child mortality
- Maternal health
- Infectious diseases
- Biodiversity
- Loss of ecosystem services
- Downsizing

Product Planning and Design

Principal actors in this stage

- Ford
- Customers
- Government

Environmental issues

- Greenhouse gas emissions
- Fuel economy
- Smog-forming emissions
- Material use and recycling
- Resource use
- Manufacturing waste
- In-vehicle air quality

Social issues

- Vehicle safety
- Access to mobility
- Traffic congestion
- Diversity
- Infrastructure
- Emerging markets
- Design for assembly/ergonomics

Economic issues

- Quality
- Brand value/reputation
- Health care costs

Logistics (Transportation)

Principal actors in this stage

- Ford
- Government

Environmental issues

- Greenhouse gas emissions
- Smog-forming emissions
- Land use

Social issues

- Vehicle safety
- Health and safety
- Treatment of employees
- Noise
- Community disruption through land use
- Traffic congestion
- Diversity
- Infrastructure

Economic issues

- Fuel cost

Raw Material Extraction

Principal actors in this stage

- Suppliers
- Government

Environmental issues

- Greenhouse gas emissions
- Smog-forming emissions
- Resource use
- Waste
- Land use
- Biodiversity impacts

Social issues

- Health and safety
- Diversity
- Human rights
- HIV/AIDS
- Community disruption through land use

Economic issues

- Commodity prices

Parts and Components

Principal actors in this stage

- Ford
- Suppliers

Environmental issues

- Greenhouse gas emissions
- Smog-forming emissions
- Material use and recycling
- Resource use
- Manufacturing waste
- Land use

Social issues

- Health and safety
- Employee satisfaction
- Diversity
- Human rights
- HIV/AIDS

Economic issues

- Quality
- Brand value/reputation
- Health care costs

Assembly and Painting

Principal actors in this stage

Environmental issues

• Ford • Government	• Greenhouse gas emissions • Smog-forming emissions (especially VOCs) • Material use and recycling • Resource use • Manufacturing waste • Land use
Social issues • Health and safety • Employee satisfaction • Diversity • Human rights • HIV/AIDS • Community contributions	Economic issues • Quality • Brand value/reputation • Health care costs

Sales

Principal actors in this stage • Ford dealers • Other dealers	Environmental issues • Land use
Social issues • Diversity • Human rights • Marketing and customer information	Economic issues • Dealer services • Brand value/reputation • Purchase cost

Use

Principal actors in this stage • Customers • Fuel providers • Government	Environmental issues • Greenhouse gas emissions • Smog-forming emissions • Land use • Fuel economy • In-vehicle air quality
Social issues • Vehicle safety • Noise • Viability of public transport • Access to mobility • Community disruption through land use • Traffic congestion • Infrastructure • Emerging markets	Economic issues • Fuel costs • Brand value/reputation • Cost of ownership

Service

Principal actors in this stage • Ford dealers • Independent servicers	Environmental issues • Material use and recycling • Waste
Social issues • Health and safety • Diversity • Human rights • Marketing and customer information	Economic issues • Quality • Dealer services • Brand value/reputation

End of Life

Principal actors in this stage • Dismantlers • Government • Shredder operators	Environmental issues • Material use and recycling • Waste • Recovery

• Post-shredder treatment operators	
Social issues • Health and safety • Diversity • Human rights • End of life information	Economic issues • Commodity prices • Quality • Market demand for recycling/recovery products

Expanding Connections

We recognize that these issues are interconnected at each stage and that positive and negative effects in one part of the chain can reverberate in the other parts.

Increasingly, we are bringing our understanding of a wide range of sustainability issues into the stages of our value chain. Environmentally, we are improving our manufacturing efficiency, cutting the emissions of our vehicles, designing vehicles with end of life in mind and increasing the recyclability of our vehicles and our use of recycled materials. Socially, we seek to strengthen the communities we're part of, expand the connections within them and improve our relationships throughout the value chain. Economically, we are trying to build our capacity to adapt and respond to the variety of challenges and opportunities present at every stage, meeting our customers' needs as well as our stakeholders' expectations.

Home > Our Blueprint for Sustainability > Our Value Chain and Its Impacts

Governance

Sound governance and management systems enable a company to operate in a transparent and accountable way and to provide effective oversight of operations. High ethical standards – formalized in company policies and demonstrated by managers at all levels – help a company translate its aspirations into action.

The concept of governance has expanded beyond its traditional focus on fiduciary responsibility to shareholders to a broader focus on a company's impact on the world and its responsibilities to diverse stakeholders. At Ford, this is reflected in our development and integration of sustainability structures, processes and management systems into the core business.

Home > Our Blueprint for Sustainability > Governance

Progress

Like our ONE Ford plan, our overall corporate governance and our sustainability governance serve as the foundations of our financial recovery and keep sustainability on the radar as we expand our market shares in key regions of the world. The following are among our highlights and progress in the governance arena since our last report was published.

In early 2012, we revised our Policy Letter 24, which embodies our commitment to human rights. Originally titled the Code of Basic Working Conditions, the policy was renamed the Code of Human Rights, Basic Working Conditions and Corporate Responsibility, reflecting its expanded scope and alignment with 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.

Also in early 2012, we enhanced our web guide for Social Responsibility and Anti-Bribery and our supplier guide for social responsibility. The supplier guide for social responsibility now includes specific guidance on anti-bribery and responsible sourcing from conflict-affected and high-risk areas. Supplier guides such as this one are an extension of our Standard Terms and Conditions for all suppliers and spell out Ford’s requirements for suppliers across a range of performance areas.

In December 2011, we supported an all-day conference hosted by the George Washington University and the United Nations Global Compact at which government officials, corporations and nongovernmental organizations shared stories of best practices and challenges regarding human rights, with the aim of improving overall performance on human rights issues.

In February 2012, we began the implementation of SUMURR – Sustainable Urban Mobility with Uncompromised Rural Reach – in Chennai, India. The objective of this project is to leverage our SYNC® technology and the IT “cloud” to provide access to health care services to women in the rural areas outside of Chennai. The project illustrates one way we continue to lead in human rights business practices, going beyond compliance and focusing on critical issues that impact our business.

Finally, in 2011 and early 2012, Ford received a number of recognitions for our corporate responsibility work, our reporting and our governance practices. For example, Ford was ranked first among U.S. companies in its sector in *Newsweek* magazine’s “Green Rankings”. See Awards and Recognitions for additional awards received.

This section of the report discusses Ford’s overall and sustainability governance, including how we address human rights and other ethical issues and our management of key sustainability issues.

2011 Awards and Recognition

In 2011 and early 2012, Ford received a number of awards and recognitions for our corporate responsibility and sustainability efforts and governance practices.

In 2012, for example, Ford was honored (for the third year in a row) as one of the World's Most Ethical Companies by the Ethisphere Institute. Ford was one of only 145 companies on this list, and the only automaker. Ford was chosen for this distinction from a field of thousands of companies in more than three dozen industries. To be included, a company must receive high ranks in seven key areas: corporate citizenship and responsibility; corporate governance; innovation that contributes to the public well-being; industry leadership; executive leadership and tone from the top; legal, regulatory and reputation track record; and internal systems and ethics/compliance program.

In the first quarter of 2012, Ford was also ranked as one of America's most reputable companies, by the Reputation Institute, based on an online survey of more than 10,000 consumers. Ford gained ground in this yearly measure of companies' reputability – we ranked 44th on the list, up 13 spots from 57th in 2011. Our score was 71.8 out of 100, essentially unchanged from our 71.5 in 2011.

In 2012, *Corporate Responsibility Magazine* ranked Ford 71st in their "100 Best Corporate Citizens" list, which reviews large-cap companies headquartered in the United States.

Also in 2012, Ford was once again included on the Maclean's/Sustainalytics list of the 50 Most Socially Responsible Corporations in Canada. Companies are selected for showing leadership and commitment in the development and implementation of sound sustainability practices within their respective industries.

In 2011, Ford was included in the Dow Jones Sustainability Index North America and the FTSE4Good Index, based on favorable evaluations of our sustainability programs and performance.

Also in 2011, we won the Energy Star Award for Sustained Excellence from the U.S. Environmental Protection Agency (EPA) for energy-efficiency improvements in our manufacturing facilities. And, Ford was the only automaker to receive a Climate Leaders Award from the EPA in 2012. Ford was recognized with a Goal-Setting Certificate for its publicly stated manufacturing greenhouse gas emissions-reduction goal, which is part of the Company's global manufacturing carbon dioxide strategy.

In 2011, for the third year running, 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 22nd overall and 1st in the vehicles and components sector; on the global list, we ranked 66th overall and 5th in vehicles and components sector.

Also in 2011, Ford was ranked 4th out of the top 100 companies on the latest Maplecroft Climate Innovation Index. Inclusion in this index demonstrates superior management, mitigation and adaptation in the field of climate innovation.

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. These rankings acknowledge best practices in the reporting and disclosure of sustainability performance.

In addition, in 2010 and 2011 we won several awards related to diversity. Read more about these awards here.

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, how we set and communicate standards to employees and other personnel and how we encourage and enforce ethical business practices. In addition, we explore our commitment to the U.N. Global Compact, 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

Find out more about the Board of Directors

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

Group VPs

VP, Sustainability, Environment and Safety Engineering

Group VP, Global Manufacturing

Group VP, Global Product Development
Group VP, Global Purchasing
Group VP, Global Marketing

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

Corporate Governance – Board of Directors

Ford's corporate governance principles, code of ethics and charters for each Board committee – all publicly available in the corporate governance section of the Ford website – set the framework for Ford's Board of Directors.

Ford's 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 principal functions of the Sustainability Committee are as follows:

- Assist management in the formulation and implementation of policies, principles and practices to foster the sustainable growth of the Company on a worldwide basis. "Sustainable growth" means the ability to meet the needs of current customers while taking into account the needs of future generations. "Sustainable growth" also encompasses a business model that creates value consistent with the long-term preservation and enhancement of financial, environmental and social capital.
- Assist management in the formulation and implementation of policies, principles and practices to permit the Company to respond to evolving public sentiment and government regulation in the area of motor vehicle and stationary source emissions, especially in the area of greenhouse gas emissions, fuel economy and carbon dioxide regulation.
- Assist management in setting strategy, establishing goals and integrating sustainability into daily business activities across the Company.
- Review on a continuing basis new and innovative technologies that will permit the Company to achieve sustainable growth and Company actions to protect those technologies.
- Review on a continuing basis partnerships and relationships, both current and proposed, with customers and others that support the Company's sustainable growth.
- Review on a continuing basis the Company's communication and marketing strategies relating to sustainable growth.

During 2011, eight Directors served on the Sustainability Committee, which is chaired by Dr. Homer Neal, an independent director. Ford's Board of Directors met nine 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, a 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 see 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 Basic Working Conditions, Human Rights 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, it 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.

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.

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 fencelines 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.

Finally, Policy Letter 24 – consistent with our Standard 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.

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, which vary by region, 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.

In December, we supported an all-day conference hosted by the George Washington University and the United Nations Global Compact in which government officials, corporations and nongovernmental organizations shared stories of best practices and challenges to improve overall performance on human rights issues.

Another way we can continue to lead in human rights business practices is to go beyond compliance and focus on critical issues that impact our business. For example, we began implementation of SUMURR – Sustainable Urban Mobility with Uncompromised Rural Reach – in Chennai, India, in February 2012. The project objective is to leverage SYNC® technology and the IT "cloud" to provide access to health care services to women in the rural areas outside of Chennai.

See the SUMURR case study for more information.

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 must 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 our 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 health, safety and the environment make clear that sustainable economic development is important to the future welfare of Ford and society in general. Protection of employee health and safety and the environment are important considerations in the business decisions we make. These factors are integral parts of the planning process. Our products, services, processes and facilities are planned and operated to incorporate objectives and targets and 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

The recent proliferation of social media – such as Facebook, Twitter and LinkedIn, as well as blogs and other web-based discussion forums – has led us to examine our policies relating to employees' use of these technologies. We encourage responsible employee participation in social media 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.

Specifically, the guidelines emphasize several key points. 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 finally, employees should always remember that whatever they say or write is there for all to see, permanently.

Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility

As more fully provided in Policy Letter No. 2 (Relationships with Employees), the diverse group of men and women who work for Ford Motor Company are our most important resource. In recognition of their contributions, the Company has policies and programs designed to ensure that its employees enjoy the protection afforded by the principles articulated in this Policy. The Company also strives to be a good corporate citizen and works to implement policies and programs to benefit the communities where we operate. While these principles are not new to the Company, they are vitally important to what we stand for as a company.

This Policy Letter sets forth the Company's guiding principles for human rights, labor and environmental standards throughout its global operations. The principles are consistent with, and in many instances derived from, the following human rights framework and charters:

- International Bill of Human Rights (The United Nations (U.N.) Universal Declaration of Human Rights and its two Covenants) 1948
- The U.N. Human Rights Council Guiding Principles on Business and Human Rights (2011)
- The Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises Revision 2011
- The Global Sullivan Principles
- The International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work
- The ILO Tripartite Declaration on Multinational Enterprises and Social Policy
- The U.N. Convention against Corruption (2005)

The diverse settings in which the Company operates require that a statement of our basic working conditions be general in nature. In certain situations, local legal requirements, labor agreements, and other contractual and noncontractual arrangements may modify portions of this Policy Letter. Nevertheless, the Company intends this to be an affirmation of basic guiding principles that should serve as the cornerstone of its relationship with its stakeholders in the many countries where it operates.

Human Rights

It is a goal of the Company to respect the human rights delineated in the International Bill of Human Rights, which includes avoiding causing or contributing to adverse human rights impacts through its activities and addressing such impacts if and when they occur. Company personnel must follow the Company's corporate policies as well as comply with relevant national laws and regulations related to human rights. Company personnel should also work to reduce exposure to human rights risk by identifying risks, monitoring, remediation and public reporting.

Working Conditions

Child Labor

The Company will not use child labor. In no event will the Company employ any person below the age of 15, unless this is part of a government-authorized job training or apprenticeship program that would be clearly beneficial to the persons participating.

Compensation

The Company will promote our employees' material well-being by providing compensation and

benefits that are competitive and comply with applicable law.

Forced Labor

The Company will not use forced labor in any form, including human trafficking, and will not tolerate physically abusive disciplinary practices.

Freedom of Association and Collective Bargaining

The Company recognizes and respects its employees' right to associate freely and bargain collectively. The Company will work constructively with recognized employee representatives to promote the interests of its employees. In locations where employees are not represented by unions, the Company will provide opportunities for employee concerns to be heard.

Harassment and Discrimination

As more fully provided in Policy Letter 6 (Equal Opportunity and Affirmative Action) and Directive B-110 (Anti-Harassment – Zero Tolerance), the Company will not tolerate harassment or discrimination on the basis of gender, race, color, religion, age, national origin, sexual orientation, gender identity, disability or veteran status.

Health and Safety

As more fully provided in Policy Letter 17 (Protecting Health and the Environment) and related Directives, the Company will provide and maintain for all personnel a safe and healthy work environment that meets or exceeds applicable legal standards for occupational safety and health.

Work Hours

The Company will comply with applicable laws regulating hours of work.

Community Engagement and Indigenous Populations

The Company considers indigenous people in the local communities to be among our primary stakeholders in projects and activities, and will work constructively with recognized representatives who have an interest in the Company's projects and activities, including implementation of sustainable water strategies.

Bribery and Corruption

As more fully provided in Policy Letter 3 (Standards of Corporate Conduct), the Company will under no circumstances tolerate the giving or receiving of money, gifts, or favors to influence improperly the behavior of another individual, organization, government employee, politician or government body in furtherance of a commercial or personal advantage. Bribery is never permitted, even in countries or regions where it may appear to be tolerated or condoned.

Environment and Sustainability

As more fully stated in Policy Letter 17 (Protecting Health and the Environment), the Company will conduct business in a manner that provides responsibly for the protection of health and the environment. The Company will as practicable continue to reduce and minimize the environmental impact of its operations in the short term, and work toward the implementation of environmentally sustainable strategies in the long term.

Responsibility and Implementation

The Company encourages businesses throughout our supply chain to adopt and enforce similar policies and to have its subcontractors do so. Further, the Company will seek to identify and do business with organizations that conduct their businesses to standards that are consistent with this Policy Letter, including working to extend these principles within their own supply chain.

The Company will, as appropriate, seek the assistance of independent third parties to assess compliance with this Policy.

This Policy is not intended to benefit any third parties or to create or confer any third-party rights.

All Company personnel must report known or suspected violations of this Policy through the established reporting channels. The Company prohibits retaliation against anyone who in good faith reports a violation.

The Vice President, Sustainability, Environment and Safety Engineering is responsible for interpreting this Policy with the concurrence, as appropriate, of the Executive Vice President, Manufacturing and Labor Affairs, the Group Vice President, Global Purchasing, and the Group Vice President and General Counsel.

All Ford Motor Company subsidiaries and affiliates should adopt a similar directive.

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. Since 2004, we have conducted 53 formal assessments of Ford facilities, five of which were joint venture facilities. During 2011, we revised Policy Letter 24 and did not conduct any assessments. In 2012, we plan to conduct four to six assessments of Ford facilities using our new assessment process.

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 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. Reflecting the expanded scope of Policy Letter 24, the assessments will also discuss and document community engagement efforts, effects on indigenous populations and environmental initiatives. However, work with our partners can be affected by local government legislation; in some cases, governments in developing economies may own some of a joint venture, and we need to be especially certain that Policy Letter 24 elements and work rules are enforced. We plan to continue to monitor facilities to detect and address any potential concerns.

We have received considerable and consistent 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 Supply Chain section.

Commitment to Human Rights and the U.N. Global Compact

Ford has long recognized that treating people with dignity and respect is fundamental to how we conduct business. We are committed to honoring human rights everywhere we operate, because it is the right thing to do and it strengthens our business in the long run. The foundation of our work on human rights is our Code of Basic Working Conditions, Human Rights and Corporate Responsibility (Policy Letter 24), which applies to our own operations and those of our suppliers. Because of Policy Letter 24, our collective bargaining agreements and our programs for ensuring compliance with our own policies and legal requirements, we do not believe our operations are at significant risk for incidents of child labor, forced labor or restrictions on freedom of association. We have conducted assessments of our facilities that support this conclusion. We also work actively in our supply chain to support human rights and sound working conditions.

In early 2008, Ford joined the United Nations Global Compact (UNGC), a framework for businesses that are committed to aligning their operations and strategies with 10 universally accepted principles in the areas of human rights, labor, the environment and anti-corruption. This action reinforces our commitment to outstanding performance and transparency in these areas. We also actively participate by invitation in both the Human Rights and Supply Chain Sustainability Advisory Groups convened by the Global Compact. In addition, we intend to sign the UNGC's CEO Water Mandate and the CEO Statement of Support for the Women's Empowerment Principles.

This sustainability report serves as our annual Communication on Progress to the UNGC. Please see the UNGC index for a guide to where the principles are addressed in this report.

The 10 Principles of the U.N. Global Compact

Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

Labor Standards

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labor;
- Principle 5: the effective abolition of child labor; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly

technologies.

Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

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 includes a variety of activities. The 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.

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 Code of Conduct Handbook underwent a major revision in 2007 to make it easier to understand and use as a reference manual.

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 salaried 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 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. Since the current Code of Conduct online training course was introduced in May 2009, more than 83,000 individuals, approximately 90 percent of those invited, have completed the course. In addition, global employees must certify yearly that they have read the Code of Conduct Handbook, and they also must either report potential conflicts of interest or attest they do not have any conflicts of interest to report.

In furtherance of our commitment to business ethics and compliance, every year we roll out new

mandatory online compliance training on important risk areas. Not only do these courses increase awareness, they also help our employees worldwide understand and access resources that enable responsible behavior and enhance regulatory compliance. Recent courses covered the topics of social media and export compliance.

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 a Company Policy Letter. 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 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.

We assess compliance with our ethical standards through regular legal audits that cover a range of topics relating to legal requirements and internal policies. These are in addition to audits regularly conducted by other parts of the Company on issues such as workplace health and safety.

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 the development of a materiality analysis process, 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 2011. We use the analysis to focus our reporting on those issues determined to be most material to the Company over a three- to five-year time horizon. This report is organized around the issues identified as most material, while also covering a broad range of sustainability issues of importance to Ford and our stakeholders through supporting information, detailed performance data, case studies, infographics and stakeholder interviews.

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 summary report (pdf, 4.98Mb), which is provided to employees as a pull-out in the regularly published internal magazine, *Ford World*.

In this year's full Sustainability Report, we are increasing our coverage of regional issues with regional reports for Asia Pacific and Africa, Europe and South America. Also, several Ford facilities, brands and country operations produce their own reports detailing the sustainability issues they face within their particular regions or operations. Several of our country operations, such as Ford China, and local facilities produce public reports. We have also provided input to the Ceres Facility Reporting Project.

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.

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. The report was recognized for its identification of the material sustainability issues affecting the Company and its

disclosure of the greenhouse gas emissions of our fleet, among other features. (See www.ceres.org.) 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.

Sustainability Governance and Integration

Like our ONE Ford plan, our overall and sustainability governance remains unchanged despite changes in our senior management team in 2011.

Sue Cischke, Group Vice President, Sustainability, Environment and Safety Engineering, retired in February 2012, after 35 years of service in the automotive industry. Cischke is succeeded by Robert Brown, formerly Vice President, Sustainability, Environment and Safety Engineering, Ford of Europe. Brown assumed his new role on January 1, 2012. In this position, Brown assumes direct responsibility for the Company's environment and safety strategy, policy and performance. He reports to our President and CEO, Alan Mulally.

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 Sustainable Business Strategies, Environmental Policy, Environmental Quality, Vehicle Environmental, and Safety groups, 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 office 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 and 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 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 has 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 2011, 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 bonus 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, 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 [Reviewer: Carrie Majeske]: Ford's CEO also convenes regular Special Attention Review and Automotive Strategy meetings to look in depth at issues identified as potential concerns on any unit's scorecard. Sustainability issues have been covered at these meetings, including, in 2011, an energy and environment update, the paint and emission control system, urbanization, vehicle electrification and hydrogen.
- 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. For example, in 2003 Ford adopted a Code of Basic Working Conditions, the implementation of which is supported by a robust assessment and training process. The Code of Basic Working Conditions was updated in 2006, and in 2007 it was approved and formally adopted as a corporate Policy Letter 24. In early 2012 Policy Letter 24 was revised again, and the title was changed to 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).

Sustainability Management

This section describes our systems for managing sustainability within two of our major business functions – Product Development and Manufacturing. (Our systems for supply chain management, which have been addressed in this section in previous reports, are discussed in the Supply Chain section). Stakeholder engagement is also vital to our ability to serve our customers and the local and global communities in which we operate. Our stakeholder engagement activities are also described in this section of the report.

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, in 2009 we 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. Since that time, we have followed 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 2011 and 2012 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 our Design for Environment (DfE) tool to bridge the gap between product development and environmental management. DfE uses simplified lifecycle assessments and cost calculations, substance restrictions, checklists and other tools to identify and reduce significant impacts. We are continuing to broaden the range of issues we consider in our product development process as we move from Design for Environment to Design for Sustainability (DfS). Ford of Europe's Product Sustainability Index is incorporating DfS principles, to improve each vehicle's environmental, social and economic performance.

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.

Ford Production System

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.

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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 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. Group certification saves time and money, with no degradation in plant environmental performance. European plants are moving to a group certification in 2012.

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 Case Study: Sustainable Growth in Asia.

Climate Change Governance

Because the climate change issue is so important to us at Ford, it is managed through governance systems at all levels of the Company, and we discuss it here in its own section. The Sustainability Committee of our Board of Directors regularly reviews Ford's actions related to climate change.

Substantive changes to 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.

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: "GHG Emissions = (Vehicle + Fuel + Driver)." 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, and even driver style/behavior.
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.

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, health care reform, 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.

In this section, we have expanded our reporting in response to stakeholder feedback. We are including more detail on Ford's approach to public policy participation and our positions on key U.S. policy issues. This year we have also added some new coverage of policy issues in our regional reports and we continue reporting on regional policy issues in the climate change section. In the future we will expand our reporting on policy issues of importance in other regions of the world. (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 related to 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 United States. 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 2011 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. The one important topic not addressed here is climate change policy; see the Climate Change and the Environment section for a discussion of that issue. That section also addresses policy issues relating to mid-level ethanol blends and upstream emissions associated with vehicle electrification.

ON THIS PAGE

Sustainable Raw Materials

Public awareness has grown around sustainability concerns associated with certain raw materials. So-called "conflict minerals" are one serious concern; these include tantalum, tin, tungsten and gold mined in or transported through the Democratic Republic of the Congo (DRC) and nine bordering countries. Profits from mining activities in these areas are being used to fund armed conflict in the region. Another area of concern is "rare earth elements" (REEs) – a suite of mined materials widely used in consumer and automotive electronics. China currently produces 95 percent of the world's supply of REEs, and concerns have been raised about the future availability of these materials as well as sustainability aspects related to their mining.

In the U.S., the financial regulatory reform bill passed by Congress in 2010 included a provision relating to conflict minerals. This provision requires many manufacturers to report to the U.S. Securities and Exchange Commission annually on whether their products contain metals derived from certain conflict minerals and if those metals are necessary for the functionality and production of their products.

Ford has begun work on the issue of conflict minerals in the supply chain. We have an established mechanism for engaging with our suppliers on the topics of policy and management systems through our strategic supplier framework – the Aligned Business Framework. We have also fully integrated explicit human rights terms in all of our contracts with suppliers. In 2011, Ford joined the Public–Private Alliance for Responsible Mineral Trade (PPA). The PPA is a joint initiative among governments, companies and civil society to support supply chain solutions to conflict minerals challenges in the DRC and the Great Lakes Region (GLR) of Central Africa. The PPA seeks to support the development, piloting and implementation of systems in the DRC and GLR to provide a validated mineral supply chain that is acceptable to downstream actors and end users, compliant with the Organisation for Economic Co-operation and Development's due diligence guidance, and credible to civil society and the broader stakeholder community.

Regarding rare earth elements, legislation is pending in Congress that would encourage domestic production of REEs. Ford has provided information and support to the relevant U.S. House of Representatives committee on this issue via the American Automotive Policy Council, to educate

committee staff on the industry's interests and positions on REEs.

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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. Both the EPA and California are in the process of developing the next generation of emissions standards ("Tier 3" and "Low Emission Vehicle III," respectively). CARB is also in the process of revising its future Zero Emission Vehicle regulations, with the intent of integrating them into its programs for smog-forming and greenhouse gas emissions.

We are working 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 technologies.

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Undesirable Chemicals

The European Union's REACH program (Registration, Evaluation, Authorization, and restriction of CHemicals) 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 its own version in October 2010. South Korea and Japan will soon adopt REACH-like regulations to manage their chemicals. In the U.S., the U.S. Senate and House both proposed bills in 2010 to overhaul the Toxic Substances Control Act. The state of California is also planning to promulgate regulations implementing a "green chemistry" law. In January 2009, the United Nations implemented regulations requiring a globally harmonized system of classification and labeling of chemicals.

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. When factories are closed, jobs are lost and the tax revenues that support hospitals, social services, local schools and public universities are reduced.

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.

A strong manufacturing policy is needed in the U.S. The government should implement policies that:

- Create a framework that allows companies to compete fairly and freely
- Encourage research and development and investment in the future
- Allow access to competitive capital and create a stable, predictable and globally competitive regulatory environment and tax regime
- Leverage the power of free enterprise and American ingenuity to create growth and prosperity

The U.S. Department of Energy's (DOE) Advanced Technology Vehicle Manufacturing Incentive Program is a great example of how successful government–industry partnerships can work to achieve public policy goals. The program provides access to competitive capital while leveraging American ingenuity to invest in the production of more fuel-efficient vehicles. This program was authorized in 2007 and funded in 2008, and Ford is one of the recipients of these competitively awarded green loans.

Strong free-trade policies – enabling market access and prohibiting currency manipulation – also must be part of this equation. At Ford, we believe an export-driven strategy is critical to achieving our shared goals of economic growth, job creation and a sustainable future. That is why Ford President and CEO Alan Mulally is proud to serve as a member of the President's Export Council. Also important are education policies that help to foster a skilled U.S. workforce. These types of policies are discussed later in this section.

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Health Care Reform

In the U.S., national health care reform was the topic of intensive Congressional and public debate, culminating in the passage of national health care legislation in March 2010. We are encouraged that the new law includes provisions that are aligned with the three key areas (listed below) that we believe must be addressed in order to maximize the value of health care service (a combination of quality, appropriateness and costs).

- Wellness and Prevention – As a country, we must focus on wellness and prevention, and make sure that employers can offer creative incentives that work to engage people in healthy behaviors.
- Health Information Technology – We need a national technology infrastructure that allows the consolidation of a patient's medical records, so that the most appropriate care is given wherever treatment is provided. To accomplish this, we need electronic medical records at every doctor's office and hospital, and they all need to be connected. We also need tools to improve the accuracy and safety of prescription drug dispensing, such as electronic prescribing.
- Understanding What Works – By studying the cost and quality of health care and its effect on health status, we can deliver more effective care. New innovations in technology and drugs are key drivers of cost increases. Therefore, before new innovations are widely implemented, they must be compared to the standard practice to really know whether and how much additional value they bring.

For more on this topic, see the Financial Health section.

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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 2009. Early estimates from the National Highway Traffic Safety Administration indicate that U.S. traffic fatalities continued to decline through 2010.

Part of Ford's commitment to safety is our open and transparent approach to quickly addressing customer questions and vehicle safety issues. Ford supports the Transportation Recall Enhancement, Accountability and Documentation (TREAD) Act, which opened even more transparency and information sharing between the government and the auto industry.

Ford believes driver distraction is a serious issue, which is why we were the first automaker to support legislation for a national ban on handheld devices while driving. Reflecting this public position, Ford clarified its employee policy to explicitly ban all handheld usage of electronics while driving. This is aligned with research showing that manually operating electronic devices that can divert drivers' eyes from the road (not merely talking on cell phones) substantially increases crash

risk. We also pioneered voice-controlled technologies, such as SYNC®, which this same research shows can help reduce this risk.

Ford is a leader in the cooperative effort with governments and automakers globally to develop connected vehicles that in the future could "talk" to each other through advanced Wi-Fi technologies, to help reduce crashes and traffic congestion. Ford is aggressively accelerating its commitment to connected vehicles – known as vehicle-to-vehicle communications – becoming the first automaker to build prototype vehicles for demonstrations across the United States, doubling its connected vehicle investment in 2011 and dedicating even more scientists to developing this technology. We also support efforts to harmonize technology standards around the world to help deliver the technology as quickly and affordably as possible.

Ford strongly supports maximum graduated driver licensing (GDL) in North America as a means of achieving reductions in crashes, injuries and fatalities by new teenage drivers. GDL is a system designed to delay full licensing while allowing beginners to obtain initial experience under lower-risk conditions. There are three basic stages to GDL: a minimum supervised learner's period; an intermediate license (once the driving test is passed) that limits unsupervised driving in high-risk situations; and a full-privilege driver license upon completion of the first two stages. The Company encourages all states to adopt maximum GDL programs and urges all driver license programs to incorporate maximum GDL requirements, including information on safety belt use and impaired driving. Ford complements GDLs with its Ford Driving Skills for Life teen safe driving program and MyKey® technology, which helps parents encourage their teens to drive more safely. MyKey features programmable speed and audio volume limits and a "no belts, no tunes" feature to encourage the use of seat belts, which are still the number-one lifesaving device.

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.

California has passed legislation to prevent human trafficking, and several U.S. states (including Ohio, Texas and Hawaii) are considering bills to prevent human trafficking. 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 and Asia Pacific and Africa, sales in almost 90 countries 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 United States 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 American economy. See the Investing in Communities section for more information on the programs we support.

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Electrification

We stand at an exciting moment in automotive history – the introduction and growth of hybrids, plug-in hybrids and all-electric vehicles. As these advanced technology 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, with Ford's participation, successfully aligned all original equipment manufacturers (OEMs) on a standard charge connector and communication protocol that will enable all plug-in vehicles to use common charge points. This will be a key enabler for adoption in North America, as it allows all public charge stations to be

compatible with all vehicle manufacturers' products. The same approach is under consideration in Europe and China. Further standardization initiatives that will be helpful include fast-charge standards (for DC charging) and vehicle-to-grid standards. For example, in the very near future, customers with battery electric vehicles will be able charge their batteries in less than 15 minutes at specialized public charging stations. Global commonality for these systems will also be needed. Ford is also 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 widespread deployment and commercialization of electric-drive vehicles.

We have also taken a standards approach in the design of the Ford/Leviton charge station. We codesigned 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.

See our Electrification case study 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.

164,000

Employees

Employees

At year-end 2011, we employed approximately 164,000 individuals at 69 plants, 41 distribution centers/warehouses, 56 engineering research/development facilities and 110 sales offices worldwide. 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.

5.7 Million

Customers

Customers

Ford’s customers make us who we are. Ford Motor Company serves more than 5.7 million customers worldwide. Our major regional markets include North America, South America, Western Europe, Eastern Europe, Russia, Asia and Australia.

In these regions, 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 are focusing on increasing our offerings of smaller and more fuel-efficient vehicles. In all of our markets, our customers’ mobility needs and desires are changing faster than ever.

11,790

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 United States alone employed 158,000 individuals at the end of 2011, with an annual payroll of approximately $6 billion. Worldwide, we had 11,790 Ford and Lincoln dealerships at the end of 2011.

Suppliers

Over
$75 Billion
Annual Buy

Suppliers are an integral part of our business, and our success is interdependent with theirs. We rely on more than 1,400 production suppliers to provide many of the parts that are assembled into Ford vehicles. Another 9,000 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.

Investors

158,000
Investors

Our success as a company directly affects our approximately 158,000 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.

Communities

276
Facilities Worldwide

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 Community 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 276 plants, distribution centers/warehouses, and engineering, research/development and sales facilities worldwide* *We have announced plans to close a number of North American facilities as part of our restructuring actions; facilities that have been closed to date are not included in the table. The table includes four facilities operated by Automotive Components Holdings, LLC (ACH), which is controlled by us. We plan to close one of the remaining ACH plants in 2012. We are exploring our options for the three remaining ACH plants (i.e., Saline, Sandusky and Sheldon Road), and intend to transition these businesses to the supply base as soon as practicable.	• Community Relations Committees • Interactions with governments • Membership in associations • NGO dialogues
Investors 158,445 stockholders* *Common Stockholders as of February 13, 2012	• 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 1,300+ production suppliers 11,000+ nonproduction suppliers Over $75 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: 10,653 Ford-Lincoln (combined) 907 Lincoln 230 Total: 11,790 *Worldwide dealerships, as of December 31, 2011.	• 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 164,000 employees* *As of December 31, 2011.	• Town hall meetings • Labor-management committees • Pulse survey • Union representation • Intranet surveys and chats • Executive Council on Diversity • Local Diversity Councils • Employee Resource Groups

Financial Health

On January 24, 1925, Henry Ford took out an ad in the *Saturday Evening Post* outlining his vision for his eponymous company: to make safe and efficient transportation accessible to everyone – not just to the wealthy few. His dream of "opening the highways to all mankind" has continued to inspire our Company, especially over the last few years as we worked through the extraordinarily difficult economic environment. By staying focused on Ford Motor Company – on our core brands, on our overall financial health, on our commitments to all of our stakeholders – we are accelerating Henry Ford's vision into the 21st century and making good on his promise.

Opening the Highways, Saturday Evening Post, January 24, 1925

As we look back on 2011, we can unequivocally state that we made it through one of the most challenging five-year periods in our history. We weathered the storm through a two-pronged strategy that took decisive actions for the short term while simultaneously developing a longer-range plan to return our Company to profitability. We're proud to say this approach has been working. For 2011, we

25 percent

increase in sale of Ford's U.S. small cars in 2011

$16 billion

invested in our U.S. operations – including $6.2 billion in U.S. plants – to design, engineer and produce more new and upgraded vehicles and components by 2015

Operating Profit

In 2011, we reported full-year pre-tax operating profit of $8.8 billion – our third year in a row of improved annual operating profits.

Profit Sharing

We announced 2011 profit sharing and resumption of quarterly dividends.

Collective Bargaining

We reached a new agreement with the UAW.

New Jobs in the U.S.

We committed to adding 12,000 hourly jobs in the U.S. by 2015 – 5,750 more than previously announced would be added by year-

reported full-year pre-tax operating profit of $8.8 billion – our third year in a row of improved annual operating profits.

The most important thing we can do for ourselves and our stakeholders is profitably grow our Company by making the best cars and trucks in the world. Doing so doesn't just boost our own Ford Motor Company finances; it simultaneously contributes to the much broader economic development of the communities in which we operate.

In addition, by zeroing in on producing more sustainable vehicles – both in how we manufacture them and how they operate on the roadways – we're making significant contributions to the environmental sustainability of our planet. We have taken pollutants out of tailpipe exhaust and are pushing fuel efficiency to new heights. With the help of new technology, we are reducing – and perhaps may even one day eliminate – CO_2 tailpipe emissions. And even as we sell a growing number of electric cars, we are developing alternative powertrains that will make cars affordable in every sense of the word – economically, socially and environmentally.

In 2006, led by then-incoming CEO Alan Mulally, we developed a road map, which we called the ONE Ford plan, to pull us out of an economic tailspin and drive us toward a fully globalized product strategy. The tenets of that plan included working together – across all aspects of our Company – to offer vehicles that could deliver on four critical pillars of the Ford brand: quality, green, safe and smart.

The steadfast progress we have made in the years since has transformed our Company from the inside out, and we believe our stakeholders are seeing us in a new light. Our customers, suppliers, investors, government leaders, union partners and our own employees know that we have made them a promise by committing to our ONE Ford plan. We have pledged to focus on the Ford brand and to deliver a family of vehicles that are leading in quality, fuel efficiency, safety, smart design and value. And we have promised to leverage our global resources to push ourselves even further for the benefit of all those associated with our business, both internally and externally.

We also continue to track and address emerging strategic sustainability issues, from global water availability to the sourcing of conflict minerals, which impact the development and manufacture of new products.

end 2012.

Home > Financial Health

"Going Further"

Our commitment to continuous improvement means we promise to deliver not only on what consumers expect today, but to work even harder to deliver what they will want tomorrow. This concept is embedded in a new global brand promise we introduced in early 2012, one that takes the ONE Ford plan to the next level and helps to convey its meaning to those outside of our Company. Much more than a tagline, our "Go Further" promise represents a new energy and momentum at Ford. It's the pledge that we make to our colleagues, our customers and our communities that we won't rest on our laurels – that we will continue to innovate great products that build a stronger business and a better world.

"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 already "go further" through our service to our local communities, to our dealers, to our employees and to our customers. We're also going further by making innovations available to everyone – not only to a select few. Just like Henry Ford imagined with his opened highways.

In truth, we couldn't launch a global brand promise before now. That's because we couldn't tie a global brand promise to vehicles that were regional, with car models that varied greatly according to the locations in which they were built and sold. Only in the last couple of years have we developed a truly global portfolio of products. For example, the new Ford Focus that launched recently in the U.S., Europe and China is built with parts that are 80 percent the same in all locations; the remaining 20 percent of parts vary to allow for customer flexibility and choice. Our new global products (such as the Focus, Fiesta, Escape/Kuga and Fusion/Mondeo) 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, are enabling us to advance our sustainability strategy while revitalizing the financial health of our Company as a whole. Indeed, our sustainability strategy and our overall ONE Ford business strategy are intrinsically linked.

Here at Ford, we're continuing to step on the pedal to accelerate our Company to go further.

CEO of the Year

Our CEO, Alan Mulally, was lauded as *Chief Executive* magazine's 2011 CEO of the Year. Chosen by a panel of his CEO peers, Mulally was feted for leading our Company from the brink of bankruptcy while balancing the needs of all stakeholders.

Related Links

This Report

- Our Strategy
- Supporting ONE Ford

Current Financial Health

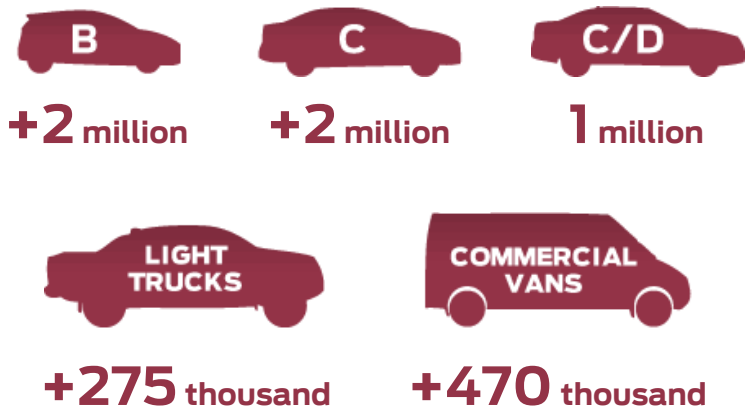
Out of the worst of times came change, and a road map for survival. We have spent the last several years radically overhauling our production strategy from what was, in essence, that of a regional company to that of a fully globalized business. We simplified by making many drastic changes, but the results are paying dividends – both literally and figuratively.

Through a difficult, multi-year process of workforce reductions and plant closures, we focused on minimizing overcapacity and reducing inefficiencies. The result today is a leaner and stronger Ford Motor Company. By staying laser focused on ONE Ford and on one global product strategy, we created a more flexible manufacturing operation that not only has saved us money, but has also resulted in faster product development and more efficient delivery of innovative new technologies in our core markets.

We have reduced the number of global vehicle nameplates from 97 in 2006, to 59 in 2008, to 38 in 2010, and to 37 in 2011. Eventually, we expect to improve that figure to 20 to 25 models globally.

Sales Volume Opportunities

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



We ended 2011 on a sales-related high note, with the Ford brand surpassing the 2 million mark for U.S. vehicles sales, making it the bestselling brand in America. The last time any auto brand sold more than 2 million vehicles was in 2007, prior to the economic recession. Total Ford U.S. sales were up 11 percent for the year, compared to 2010, in large part due to the growing diversity of our product portfolio. In Germany, we were the fastest-growing manufacturer, with vehicle sales up 17.6 percent over 2010, and we remained the market share leader in Britain and Canada. Our wholesale sales in the Asia Pacific and Africa region were up 7.5 percent in 2011, compared to 2010.

Adapting Our Product Lines

Through much of the 2000s, we could have been considered largely a truck manufacturer; now, we're a full-line automaker with competitive products in all segments of the market, from small and midsize cars to sport utility vehicles to pickup trucks. More than 80 percent of our U.S. growth in

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2011 came from small cars and utilities, as fuel prices continued to encourage customers to move to smaller and/or more-efficient vehicles, whether passenger cars or utilities. Ford's U.S. small-car sales were up 25 percent in 2011, with 244,291 Fiestas and Focuses sold in the U.S., giving us 10 percent of the small-car segment.

Today, we're offering 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. In 2012, Ford offered nine vehicles reaching an anticipated 40 mpg or more. We are planning to triple our electrified vehicle production capacity by 2013, compared to 2011.

Financial Progress

We continued to strengthen our balance sheet in 2011, a milestone year. We increased Automotive gross cash, reduced debt and improved liquidity.

In another important sign of our financial progress – and a sign of our confidence in our future – we announced in early December 2011 that we would reinstate a quarterly stock dividend of 5 cents per share, which was paid on March 1, 2012. Now that we have been able to protect the investments needed for future products, invest in growth around the world, and make significant improvements in our balance sheet, we can afford to resume the dividend and provide a return to our shareholders who have invested in our Company. Initially suspended in September 2006, the dividend is an important component of our vision of profitable growth for all – customers, suppliers, employees, dealers and investors.

Also as a result of our financial performance, we announced that we would be making profit-sharing payments to our approximately 41,600 eligible U.S. hourly employees. In accordance with the UAW/Ford collective bargaining agreement, Ford's North American pre-tax profits of $6.2 billion generated profit sharing of approximately $6,200 per eligible employee on a full-year basis. Based on first-half 2011 results, the formula generated approximately $3,750 per eligible employee, which was paid in December 2011; for the second half of 2011, the formula generated approximately $2,450 per eligible employee, which was paid in March 2012. Individual profit-sharing payments to eligible employees could be higher or lower based on actual employee-compensated hours.

In addition, we expect to make cash contributions to our funded pension plans in 2012 of about $3.5 billion globally, including discretionary contributions to our U.S. plans of about $2 billion.

Adding Jobs

Similar financial progress can be seen in the recent growth of our workforce. In the fall of 2011, we pledged to add 12,000 hourly jobs in the U.S. by 2015 – 5,750 more than the previously announced 7,000 jobs (6,250 of which were hourly) to be added by year-end 2012. The commitment (part of a new four-year labor agreement with the UAW in the U.S.) means we're bringing jobs back to the U.S. At the same time, we're also adding 3,000 new jobs in our Asia Pacific region to help keep pace with product demand in that region.

This is welcome news after several years of painful reductions that lowered our employee base by approximately 40 percent between 2006 and 2010. As of April 2012, we had about 166,000 employees globally.

Plant Investments

A critical component of our recent business strategy has been to focus on realigning production with demand. In some cases, this has meant retooling facilities that previously built large trucks and SUVs to instead manufacture smaller and/or more energy-efficient vehicles.

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 will support the 2013 North American product debut of the full-size Ford Transit van, which will achieve gas mileage at least 25 percent better than the E-Series vans it will replace when it starts production in North America in 2013. A portion of the investment also will be used to support next-generation F-150 pickup truck production at the plant.

The Kansas City Assembly Plant is one of several plants in North America to be revamped recently for the production of our varied product portfolio. Overall, we're investing $16 billion in our U.S. operations – including $6.2 billion in U.S. plants – to design, engineer and produce more new and upgraded vehicles and components by 2015, reinforcing our commitment to U.S. manufacturing and American jobs.

Also in the U.S., we invested $550 million to transform our Michigan Assembly Plant (MAP) from a manufacturer of some of our largest vehicles into the producer of our all-new global Ford Focus for the North American market. In 2012, MAP will become the world's first facility capable of building a full array of vehicles – gas-powered, electric, hybrid and plug-in hybrid – all on the same production line.

The 2012 Ford Focus

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

U.S. Plant Investments

We are investing $16 billion in our U.S. operations – including $6.2 billion in U.S. plants – to design, engineer and produce more new and upgraded vehicles and components by 2015. Recent investments include the following.

- About $1.1 billion – $700 million more than was previously announced – at our Kansas City Assembly Plant and an adjacent property. The plant will be building our full-size Transit van when the new product joins our North American lineup in 2013.
- An incremental $850 million investment in Michigan-based plants between 2011 and 2013 to support expanded manufacturing capabilities for new fuel-efficient, six-speed transmissions. These investments will be spread across a number of plants, including Van Dyke Transmission, Sterling Axle, Livonia Transmission and Dearborn Truck.
- Approximately $600 million to redevelop our Louisville Assembly Plant to build the next-generation Ford Escape.

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.

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- Greening Our Products

We're changing 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 a hybrid model that is bringing more new buyers to the brand than any other Ford vehicle.

In early 2012, we introduced our latest – and most groundbreaking – model, which will influence our product family moving forward. Known as the Mondeo in Asia and Europe, where it will be introduced in 2013, the 2013 model year Ford Fusion demonstrates our globalized approach to make all forms of the vehicle on the same assembly lines. This gives us the ability to make what customers want, and to make them affordably, too. Moreover, the new Fusion epitomizes our new globalized platform by giving our customers the power of choice: It's the first sedan to offer the full range of fuel-efficient EcoBoost® engines, hybrid and plug-in hybrid choices – each with leading fuel efficiency.

The 2011 Ford Fiesta

The all-new Fusion is the latest in a series of vehicles – including the 2011 Ford Fiesta subcompact and 2012 Ford Focus small car – developed to offer improved fuel economy alongside helpful driver assist technologies. Under the ONE Ford approach, we brought our global teams together with a goal of developing a midsize car with several key attributes: revolutionary design; leading fuel economy; and technologies that can help make our customers safer and better drivers.

The new Fusion builds upon our commitment to be a leader in fuel-efficient cars and trucks, with each new model brought to market. The Fusion Energi – the plug-in electric version – is expected to deliver more than 100 MPGe. (MPGe is a mile-per-gallon equivalency metric for electrified vehicles.) At the time of the announcement, this was 7 to 12 MPGes more than the projected efficiency of competitor plug-in hybrid models. (Read more on our electrification approach.)

The new Ford Fusion garnered the “Best in Show” award at the North American International Auto Show in Detroit in early January 2012 – a rare win for a midsize sedan.

Meanwhile, our new Focus Electric, which we began producing in 2011, was the first five-passenger, all-electric car to achieve more than 100 MPGe, and it offers faster charging than competitor vehicles with comparably sized batteries. The Focus Electric is one of the headliners of our transformed lineup, one-third of which will feature a model with 40 mpg or more in 2012. Our rollout of electrified vehicles began in December 2010 with the 2011 Ford Transit Connect Electric (a small commercial van). In addition to the Focus Electric and Fusion Hybrid, other 40 mpg vehicles include the Fiesta SFE, the Focus SFE, the C-MAX Hybrid and the C-MAX Energi.

We plan to triple production capacity of electrified vehicles in the U.S. to more than 100,000 by 2013. We are boosting global production of smaller-sized vehicles, such as the Fiesta, which debuted in the U.S. in 2010. And we are expanding our lineup of vehicles with affordable advanced technologies, such as the EcoBoost. Indeed, we’re on track to offer EcoBoost on nearly 80 percent of Ford global vehicles by 2013. That’s more than 1.5 million engines EcoBoost-equipped vehicles annually around the globe.

Fuel economy is the top purchase consideration for new vehicles. Nearly 45 percent of customers say fuel economy is their highest priority, according to a Ford survey of Americans in 36 cities in the fall of 2011.

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.

The size and fuel economy of our light trucks and utilities have also been changing dramatically. Our all-new Ford Escape, revealed in 2011, is Ford’s first SUV to be available with two fuel-efficient EcoBoost engines, to deliver class-leading fuel economy and performance. (And like many of our other vehicles, the Escape also boasts even more sustainable materials than its predecessor, such as carpeting made from recycled plastic bottles; soy foam in the seats and restraints; and cotton recycled from jeans, sweaters and T-shirts for sound-absorption material.) Our revamped Ford Explorer, meanwhile, gets up to 30 percent better gas mileage than the prior model. We also began offering in 2011 our first full-size pickup built with a smaller, turbocharged engine.

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.

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. Nearly all of our U.S. assembly plants will have flexible body shops by 2012, to enable rapid responses to changing consumer demands. And, nearly half of our U.S. transmission and engine plants will be flexible, capable of manufacturing various combinations of transmission and engine families.

By 2013, we expect that more than 85 percent of our global volume will be built on nine core platforms.

Virtual Manufacturing

What is virtual manufacturing? Think of it as a key enabler to quickly launching new products. Virtual manufacturing technology allows us to quickly add various models into an existing facility – or to reconfigure an existing facility to produce a new model. Every new product is first “built” in a virtual manufacturing plant, which contains every tool, station, robot and conveyor, all created via three-dimensional CAD data. We were the first automaker in North America to use a new virtual technology that allowed engineers to “see” unwanted sounds and eliminate them during vehicle development, to further reduce in-vehicle noise. Thanks to virtual manufacturing, product development time is approximately 14 months shorter than it was in 2004.

Regional Performance Highlights

Ford experienced strong sales and market growth in many of our regional markets in 2011. This section outlines our sales performance in our major regional markets and our plans for investments and new product launches.

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North America

In the U.S., we are continuing to introduce highly desirable vehicles in the fastest-growing segments, especially more fuel-efficient vehicles. In 2008, we committed that every new or significantly redesigned vehicle we introduce will be best in class or among the leaders in its segment for fuel economy. We are meeting this goal by introducing more fuel-efficient gas engines, smaller vehicles and hybrid vehicles.

We are also introducing new products faster. We delivered on our promise to have 100 percent new or freshened product by 2010. Over the next four years there will be no letup in our cadence. We plan to have 152 percent of our portfolio be new or freshened between 2011 and 2016 in North America.

Ford's sales in the U.S. were up 14.3 percent in 2011 compared to 2010.[1] Ford's market share[2] for 2011 was 16.5 percent, up 0.1 percentage points over 2010 and 2.3 points over 2008. This marked the third consecutive year that our overall U.S. market share has increased. Our improvement in overall market share is primarily the result of favorable acceptance of our redesigned products, a product focus on industry growth segments, and customers' increasing awareness and acceptance of our commitment to leadership in quality, fuel efficiency, safety, smart design and value. Our market share gain was led by strong sales of our new Ford Fiesta small car and Escape and Explorer utilities. In addition, the F-Series remains the top-selling vehicle in the U.S. for the 30th year in a row and top-selling pickup truck for the 35th year in a row.

The 2012 Ford Escape

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In Canada, we remained the top-selling vehicle manufacturer for the second year in a row. We gained market share slightly, to 17.1 percent from 16.9 percent. Strong sales in 2011 primarily reflected increased sales of cars, which gained 14 percent over the prior year on a retail unit sales basis, in addition to our already strong truck sales performance. In 2011, Ford Canada had the best selling vehicle in six segments, with the Ford Fusion, Mustang, Escape, Explorer, Ranger, F-150 and Super Duty.

In Mexico our market share declined slightly, to 9.5 percent from 10.4 percent. Segmentation shifts in the industry away from trucks and utilities and toward cars contributed to our share decline. Fleet sales in Mexico also decreased in the last year as a result of government and commercial segment cutbacks. Our plans for near-term market share growth include new model launches – including in the fastest-growing segment, small cars.

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Europe

In Europe we track sales and market share in 19 markets: Austria, Belgium, Britain, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden and Switzerland. Ford's sales in European markets were up slightly in 2011 over 2010. We sold 1,602,000[3] units in 2011, up from 1,573,000 in 2010. Our overall market share decreased slightly, to 8.3 percent from 8.4 percent.

Germany and Britain are our largest European markets. In Germany in 2011, Ford was the fastest-growing manufacturer (with retail vehicle unit sales up 17.6 percent compared with the prior year), and we increased market share by more than half a percentage point. This success was primarily driven by sales of the new Ford Focus, C-MAX and S-MAX, as well as record sales of Ford Transit vehicles. In 2011, Ford remained the market share leader in Britain, with 15 percent market share.

The Ford Focus with EcoBoost

In 2011, Ford's share of the Turkish market held steady at 15.8 percent. Sales in Turkey increased by 10,000 units to 140,000[4] in 2011 – a 7.6 percent increase over 2010. Ford also improved sales in Russia in 2011. In Russia, Ford's 2011 sales were at 124,000[5] units, up by 33 percent or 31,000 units compared to 2010. Over the next several years, we expect industry sales volumes in Russia to grow rapidly and perhaps even exceed sales volumes in Germany, Europe's largest market.

In 2011, we continued to introduce exciting new vehicles, including the all-new Ford Focus in Europe. We will be introducing new or significantly refreshed products in Europe between 2011 and 2014. These include an all-new Ford Kuga and B-MAX, as well as a completely freshened commercial vehicle range starting with the Ford Ranger, which went on sale in 2011. Plus, Ford launched its first all-electric vehicle in Europe in 2011 – the Transit Connect Electric. The Focus Electric follows in late 2012.

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Asia Pacific and Africa

Our Asia Pacific and Africa region encompasses 12 markets – including Australia, China, India, the ASEAN member states and South Africa – on three continents. The fastest-growing markets for automobiles are in rapidly developing countries like China and India. We expect 60 to 70 percent of our growth to come from the Asia Pacific and Africa region by 2020. To meet the growing demand,

we have increased and are planning to increase further our dealer networks and manufacturing capacity in the region.

Ford's wholesale sales in the Asia Pacific and Africa region were up 7.5 percent in 2011 compared to 2010, to 901,000 units from 838,000 units. Our overall market share for the region increased to 2.7 percent in 2011 from 2.4 percent in 2010.

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South America

Ford's principal markets in South America are Brazil and Argentina. Ford's 2011 market share for the region was 9.3 percent, down 0.5 percentage points from 2010. Ford is the fourth largest automaker in Brazil. We are making our largest-ever investment in Brazil operations in a five-year period, by investing R$4.5 billion from 2011 to 2015 to accelerate the delivery of more fuel-efficient, high-quality vehicles, which customers in Brazil desire. South America will have versions of Ford's global small and midsize vehicles by 2014, including Fiesta- and Focus-sized small cars and utilities, Fusion- and Mondeo-sized midsize cars and utilities, compact pickups and commercial vans.

We are continuing to invest in the rapidly growing markets of South America and Asia Pacific. 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 increasingly sustainable and tailored to the unique needs of these markets. Our sustainable mobility strategy is aimed at ensuring we do just that.

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1. Based on wholesale numbers.
2. Throughout this report, *market share* represents reported retail sales of our brands as a percent of total industry sales volume in the relevant market (as opposed to wholesale unit volumes reflecting sales directly by us to our customers, generally our dealers); market share data also exclude Volvo.
3. Wholesale volumes
4. Wholesale volumes
5. Wholesale volumes

2011 Sales and Highlights

Business Unit	2011 Wholesales (in thousands)	Percent Change from 2010	2011 Highlights
Ford North America	2,686	11.3	• Increased market share in the U.S. for the third consecutive year • Continued to meet our promise that all new or significantly redesigned vehicles we introduce will be best in class for fuel economy or among the leaders
Ford Europe	1,602	1.8	• Were the fastest-growing manufacturer in Germany, with vehicle sales up 17.6 percent over 2010 and market share up more than half a percentage point • Remained the market share leader in Britain
Ford South America	506	3.5	• Announced the investment of R$800 million to produce a new global vehicle in Sao Bernardo do Camp, Brazil • In November, announced an R$500 million investment in our engine and transmission plant in Taubaté, Brazil
Ford Asia Pacific and Africa	901	7	• Opened one new plant in Chongqing, China, in early 2012, to produce the Ford Focus. We are building six additional new plants – three in China, two in India and one in Thailand – as part of our plan to have production capacity of 2.3 million vehicles in the region by mid-decade. • Increased overall market share in the region by 0.3 percentage points in 2011 compared to 2010, including market share increases in the fastest-growing regional markets of China and India

Customer Satisfaction and Quality

Quality and customer satisfaction together are a central mission of all of our employees, and Ford has worked hard to improve quality over the past decade. Delivering high-quality vehicles is of paramount importance to customers' willingness to consider our vehicles; it also affects their satisfaction and loyalty. Quality is also important to our costs, as high-quality vehicles have lower warranty repair costs.

We include quality as one of the four design principles that guide the entire design and manufacturing process for our vehicles. It is also central to our sales and service operations. As part of our efforts to improve quality, we have built three key kinds of quality into the brand DNA of all our vehicles: basic quality, or the fundamental reliability of the vehicle; performance quality, which includes attributes such as fuel economy and quietness; and excitement quality, or those unexpected convenience features that surprise and delight customers.

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 quality problems after our vehicles are sold. We evaluate every manufacturing-related warranty claim and migrate effective solutions into the assembly plant. We also gather feedback from our customers using survey tools, to ensure that we understand customers' problems with our vehicles, including actual product failures and customers' opinions of vehicle designs and features.

If quality problems do arise, we respond promptly to address them. We have made significant strides over the past few years by listening, learning and quickly responding to what our customers tell us. MyFord Touch™, for example, is highly popular and well received by customers – more than 50 percent of buyers said that this technology was an important factor in their purchase decisions. However, some customers felt that some features of MyFord Touch and MyLincoln Touch did not work properly. Based on this feedback, we promptly developed and recently issued a software upgrade to improve the systems with even faster touchscreen response, better voice recognition and easier-to-read graphics. The upgrade is available to existing customers free of charge and will launch on all 2013 model year vehicles equipped with MyFord Touch and MyLincoln Touch.

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.

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

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

Global and Regional Quality Improvements

The following are key measures of our vehicle quality:

Global Warranty Spending

- Over the last three years, Ford has reduced its warranty repair rate by 40 percent in each region around the world.
- Global warranty spending per unit declined 4 percent in 2011, compared to 2010.
- Global warranty costs increased by $72 million over the last four years (from year-end 2007 to year-end 2011). Plans are in place to reduce warranty costs by more than 16 percent by 2016.

GQRS Initial Quality (Three Months in Service) Report[1]

2011

- In 2011, global full-year "things gone wrong" (TGW) degraded slightly due to new technologies in entertainment and communication and transmission issues. Global full-year customer satisfaction was 68 percent.
- In the U.S., the following models led their respective segments in the Global Quality Research System (GQRS) quality survey:
  - Ford Focus – TGW Leader, C car
  - Ford Expedition – Satisfaction Leader, Large Utility
  - Ford F-150 – Satisfaction Leader, Full-Size Pickup
  - Ford Super Duty – Satisfaction Leader, Heavy-Duty Pickup

In North America in 2011:

- Overall customer satisfaction in 2011 was 79 percent.
- The number of Ford, Lincoln and Mercury safety recalls increased from 9 in 2010 to 13 in 2011, while the number of affected units increased from 551,000 to 3.339 million. Three of the recalls in 2011 involved the high-volume F-Series vehicle line, accounting for 2.706 million of the total vehicles affected. One other recall, involving older Windstar minivans, accounted for 425,000 of the total vehicles recalled in 2011.[2]
- Warranty spending increased by 14 percent in 2011, compared to 2010.
- Ford's customer satisfaction with dealership sales experiences improved 1 percentage point in 2011 compared to 2010 and 5 points since 2005. Customer satisfaction with vehicle service experiences remained steady from 2010 to 2011 and has increased 9 percentage points since 2005.

In Europe in 2011:

- Full-year TGW improved by 4 percent compared to 2010.
- Overall customer satisfaction increased 3 percentage points compared to 2010, to 63 percent.
- Sales satisfaction with dealer or retailer increased by 3 percentage points from 2010. Service satisfaction with dealer or retailer increased by 5 percentage points during the same period.[3]
- Warranty spending decreased by 21 percent compared to 2010.

In Asia Pacific and Africa (APA) in 2011:

- Full-year TGW improved by 44 percent compared to 2010.
- Full-year customer satisfaction increased by 11 percentage points compared to 2010, to 49 percent.

- A new APA sales and service satisfaction survey was launched in late 2010. Full-year 2011 data will be available in early 2012.
- Warranty spending increased by 8 percent compared to 2010.

In South America in 2011:

- Full-year TGW improved by 29 percent compared to 2010.
- Full-year customer satisfaction was unchanged in 2011 compared to 2010, at 67 percent.
- Warranty spending decreased by 1 percent compared to 2010.

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 48.6 percent compared to 49.7 percent in 2010. In Europe, Ford owner loyalty increased to 51 percent in 2011 from 45 percent in 2010.

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1. 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.
2. Note that last year we reported that Ford issued seven U.S. safety recalls in 2010. That was incorrect and the actual number was nine. The number of units recalled was correctly reported.
3. We changed our internal customer satisfaction program during 2011 to a different questionnaire and methodology for the 2011 survey. This resulted in different overall satisfaction ratings. However, we developed adjustment factors to make the scores comparable with the previous program.

Ford Future Competitiveness

In the next 20 years, the number of vehicles in the world is projected to double from 1 billion to 2 billion, while the demand for fuel for all forms of transportation is predicted to grow by 45 percent. Global temperatures may continue to rise unless we stabilize greenhouse gases. Erratic weather patterns may impact water availability. And increasing global populations, coupled with improved standards of living worldwide, will put added strains on natural resources. In 2011, the world's population hit 7 billion. That number is expected to jump to more than 9 billion by 2050, with most of the growth in Africa, Asia and Latin America.

At Ford, we're looking at ways that technology can help us solve such challenges while creating profitable growth. One key piece of our future strategy is finding ways to tackle the mobility challenges of emerging economies. This includes looking for opportunities to improve transportation in rapidly growing urban centers and enhancing access to vehicles in remote locations. We have been dedicating R&D resources toward developing new integrated mobility solutions.

One area that will help us remain competitive is our work in so-called "flexible manufacturing" plants, which allows us to respond more quickly to consumer demand.

Flexible Manufacturing Facts

- In some of our flexible body shops, more than 80 percent of the body tooling can be programmed to weld a variety of body styles, without delays caused by tooling changeovers.
- Our flexible manufacturing strategy often uses programmable tooling technologies that eliminate the need to replace model-specific toolings.
- In our flexible paint shops, we use standardized equipment capable of painting a vehicle of any size.
- To facilitate flexibility in our final assembly plants, we are designing vehicles so that they are built in the same sequence, allowing for more efficient utilization of people and equipment.
- In traditional powertrain facilities, changeover from one product to another typically requires a 12– to 18–month extended shutdown and results in significant equipment obsolescence; a flexible system changeover, by contrast, often takes place during regularly scheduled plant shutdowns during the summer and over winter holidays.

*As of 2012, nearly all of our U.S. assembly plants have flexible body shops.

Focus on Asia

The Asia Pacific region 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 we estimate that India will be the third-largest market in the world for the coming decade. By 2020, annual vehicle sales in the Asia Pacific region will likely top 52 million vehicles. To keep pace with this enormous growth, we are building new plants and expanding existing ones, hiring workers, increasing 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 Mazda Automobile Corporation, Ltd. (CFMA), which began production in 2003, and Jiangling Motors Corporation, Ltd. (JMC), which assembles Ford and JMC vehicles for distribution in China.

In 2011, our sales in China grew steadily, breaking the half-million mark with 519,390 wholesale vehicles sold, compared to 483,288 in 2010 – a 7 percent increase. We're on track to deliver on our promise to bring 15 new vehicles to China and add 340 new dealerships – to double the number of dealers – by 2015. In India, meanwhile, Ford sold 96,270 domestic wholesale units in 2011, a 14 percent increase from the previous year.

We are investing more than $6 billion in Asia Pacific (and Africa) and currently employ some 25,000 people in the region. Our investments include the following:

- In April 2012, Ford announced a $600 million expansion in Chongqing and a new $760 million plant in Hangzhou. This $1.3 billion investment will double Ford's passenger car production capacity in China to 1.2 million units by mid-decade. Ford's investments in China and across Asia represent our biggest global expansion in 50 years.
- In 2011, we broke ground on a new $350 million transmission plant in Chongqing, China, at our Changan Ford Mazda Automotive joint venture. This will be our first transmission plant in China, with initial capacity of 400,000 six-speed transmissions.
- CFMA built a new $490 million assembly plant, which came online in early 2012, and is building a $500 million state-of-the-art engine plant in Chongqing. In 2012, Ford announced we would expand production at the facility by 350,000 additional units.
- Ford and our commercial vehicle investment Jiangling Motors Corp. are investing $300 million for an assembly plant in Nanchang, China, for Ford and JMC branded vehicles.
- In early 2012, we announced we will be investing $142 million to build a new compact SUV – the EcoSport – at our plant near Chennai, India.
- We are investing $72 million to increase production capacity at our Chennai engine plant.
- We broke ground in 2011 on a $1 billion integrated manufacturing facility in Sanand, Gujarat, India. The new plant will create 5,000 jobs and will be able to initially produce 240,000 vehicles and 270,000 engines per year, starting in 2014.
- In Thailand, we have invested $450 million in a new plant in Rayong province that will be building the Ford Focus in 2012 for Thailand and other Asian markets.

Related Links

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- Ford Asia Pacific and Africa

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 vehicles, and the company was providing financial services to 5,700 Ford and Lincoln dealers and more than 3.7 million retail customers as of year-end 2011. Ford Credit's profits and dividends help support Ford's business, including vehicle development.

Related Links

This Report

- Customers
- Dealers

Ford Credit has been a catalyst in helping Ford Motor Company's financial recovery, providing consistent dealer support, a means to give customers options to purchase the vehicles they want, and profits and distributions to Ford. (For more, see the Voice with Ford Credit's chairman and CEO.)

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 support loyalty. Independent U.S. studies show that Ford Credit customers are more loyal to Ford, Lincoln and our 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. Outside the U.S., FCE Bank is Ford Credit's largest operation, serving Europe. 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 treating customers with fairness and respect.
- Credit Approvals: Ford Credit has used consistent and prudent credit standards and practices for many years to support Ford Motor Company dealers and customers. Because the company uses proprietary credit originations and collections systems, it can finance a broader range of customers than if it used credit scores alone.
- Compliance: Ford Credit uses responsible, consistent and transparent practices globally. Procedures are designed to help ensure that customers are treated fairly and the financing process is understandable. Ford Credit believes it maintains all material licenses and permits required for current operations and is in compliance with all material laws and regulations applicable to the company and its 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 is involved in the Jump$tart Coalition, which is dedicated to building financial literacy starting at a very young age, and 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, www.fordcredit.com, 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. Customer information is accessible to appropriate personnel who have a business need for the information. Ford Credit provides training and communications programs to educate personnel about privacy requirements. Beyond protecting customer privacy, Ford Credit continuously uses and works to develop robust processes to produce a superior service experience that ensures that customers are always treated fairly and respectfully.
- 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 where 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 benefitting 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.

Home > Financial Health > Ford Motor Credit Company

Mobility Solutions

There are about 7 billion people in the world today and about 1 billion cars on the road. By 2050, the global population is expected to reach 9 billion. With more people, and greater prosperity, the number of vehicles could increase to 4 billion by mid-century.

In the decades to come, 75 percent of the world's population is expected to live in cities. And 50 of those cities will have more than 10 million residents. All of this raises the possibility of global gridlock – a never-ending traffic jam that wastes time, energy and resources. Even if the new vehicles we make have zero emissions and draw from renewable energy sources, 4 billion cars are still 4 billion cars.

The challenge goes beyond one of 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 can have a significant impact on the quality of human life.

In early 2012, we announced our new Blueprint for Mobility. Similar in concept to our overall Blueprint for Sustainability, it sets near-, mid- and long-term goals for solutions to the changing transportation landscape. The Blueprint for Mobility defines the start of our thinking about what transportation will look like in 2025 and beyond, and identifies the types of technologies, business models and partnerships needed to get us there.

Our vision blends smart transportation with intelligent vehicles and transport systems that are interconnected through a global technology network. We see a 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.

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.

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.

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.
- In China, the world's longest period of gridlock was registered at 11 days during 2010.

"

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

- 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 Blueprint for Mobility

At Ford, we believe that the issue of urban mobility requires 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.

Our Blueprint for Mobility mirrors our approach to our Blueprint for Sustainability, establishing a scientific foundation based upon 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.

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 will provide more sophisticated systems of semi-autonomous driving and "auto pilot" functions.

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 than they do today.

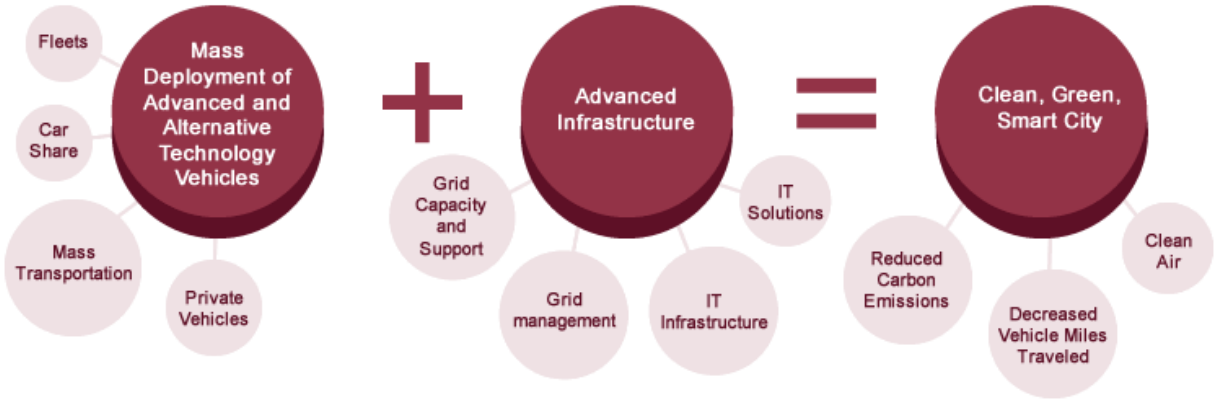
The Blueprint for Mobility establishes goals for the near, mid and long term, as follows:

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 communications options and driver interfaces that proactively alert drivers to traffic jams and accidents	• The introduction of semi-autonomous driving technology, including driver-initiated “auto pilot” capabilities and vehicle platooning in limited situations – technologies that will provide improved accident avoidance and driver assistance features, but allow the driver to take control, if needed	• 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
• 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	• 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-autonomous and autonomous highway lane changing and exiting	• Arrival of smart vehicles capable of fully autonomous navigation, with increased “auto pilot” operating duration, plus the arrival of autonomous valet functions, delivering effortless vehicle parking and storage
• The delivery of a better-connected, safer and more-efficient driving experience with limited autonomous 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	• 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	• 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
• 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	• The emergence of an integrated 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 and smart" 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 early 2012, for example, we announced plans to open a dedicated research lab in California's Silicon Valley as part of our commitment to make technology affordable for millions. The new Ford lab will serve 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 will help to ensure that Ford keeps pace with consumer trends and aggressively prepares for the future by developing mobility solutions to harness technology.



SUMURR Project

Promoting Healthy Mothers and Babies in Rural India

What does a Ford vehicle have to do with the health of pregnant women in impoverished villages of rural India? Quite a bit, thanks to a novel project we recently kicked off in the state of Tamil Nadu, where we have manufacturing operations. The project – the first pilot of a program called SUMURR (Sustainable Urban Mobility with Uncompromised Rural Reach) – is finding ways we can use our vehicles and connected technologies to address critical social needs, such as health care.

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.

In early 2012, we launched our first SUMURR pilot project with the Tamil Nadu Directorate of Public Health, the Indian Institute of Technology Madras (IIT Madras), the U.S. Department of State and Hand in Hand, a nonprofit focused on the empowerment of women. The long-term goal is to reduce the number of maternal and infant deaths by improving the delivery of health care services. We're providing a vehicle for nurses to reach remote locations. And we're tailoring our mobile-device information technology to help nurses better track their patients, make diagnoses and recommend more effective treatments. A Ford Endeavor will carry medical supplies and will provide power and a vitally important wireless connection.

Currently, the regional public health division in the Tamil Nadu district of India uses a software tool called PICME (the Pregnancy Infant COHORT Monitoring Evaluation) to track health information on pregnant women and infants up through age 1. But in remote regions that lack Internet connectivity, PICME is of limited usefulness. Developers at ITT Madras will tailor applications using our Ford technology to make PICME more mobile and more accessible to village health nurses.

"Through the use of our vehicles and our technology, we hope to reach more women in the underserved areas," said David Berdish, Ford's manager of social sustainability. "It will improve the quality of data and the connectivity of the data to doctors and hospitals. And improved data will mean improved services, which we hope will ultimately save lives."

If the pilot project is successful, we will work with the U.S. Department of State to roll it out to additional locations in developing markets. We will also work on creating related projects designed to help with other critical social issues, such as access to clean water or education.

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. The project will provide a practical demonstration of the use of our vehicles by health care facilities interested in providing telemedicine services, particularly in rural or hard-to-reach areas.

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 4 billion by the middle of this century.

This sounds like good news for an automotive company, and to some extent, it is. But 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 following 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 2015, it is projected that at least 35 mega-cities will have a population of more than 10 million. 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. 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. 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 greenhouse gas (GHG) standards are eroded as vehicles spend more and more time idling in gridlock conditions. Other policy measures designed to reduce gridlock, such as congestion taxes and prohibitions on cars entering city limits, may prove to be more effective for reducing GHG emissions from vehicles in urban areas.
- 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

Key Partners

Mobility issues are complex and rapidly changing. Developing solutions to mobility challenges requires innovative, systems thinking. 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, IT, 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.

Mega-Cities: The Icon of Personal Mobility Challenges

Mega-cities are urban areas with more than 10 million residents. At least 25 mega-cities already exist worldwide. Twenty are located in the developing world, as are seven of the nine most populous. In the decades to come, there are projected to be at least 50 mega-cities, with virtually all the growth in developing countries. 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.

Data

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- Cumulative Shareholder Return
- Selected Financial Performance Indicators
- Profile of Ford Investors
- Worldwide Taxes Paid

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- GQRS "Things Gone Wrong" (TGW) (3 months in service)
- GQRS Customer Satisfaction (3 months in service)
- Sales Satisfaction with Dealer/Retailer
- Service Satisfaction with Dealer/Retailer

Market Share and Sales

- Ford Motor Company Market Share – United States
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DATA

Financial

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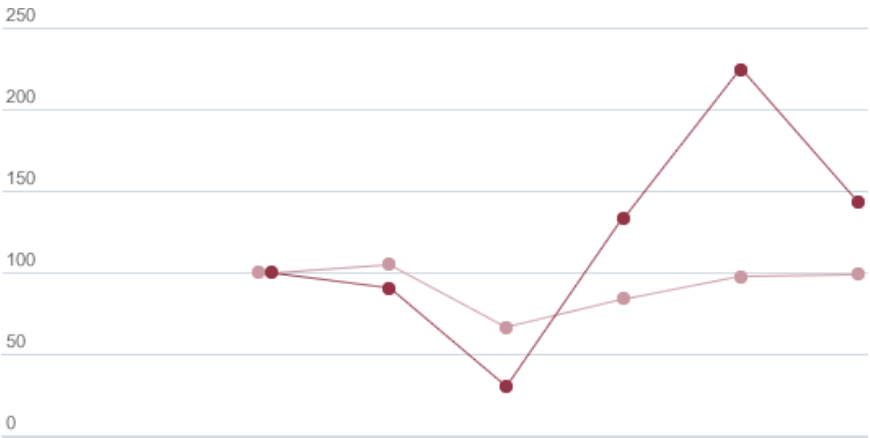
A. Cumulative Shareholder Return



	Base 2006	2007	2008	2009	2010	2011
S&P 500	100	105	66	84	97	99
Ford	100	90	30	133	224	143

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

Notes to Data

Updated data to reflect 2006 base.

Analysis

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

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B. Selected Financial Performance Indicators

	2006	2007	2008	2009	2010	2011
Sales and revenue ($ billion) †	160.1	172.5	146.3	116.3	129	136
Income/(loss) from continuing operations ($ billion) †	(12.6)	(2.8)	(14.7)	2.7	6.6	20.2

Net income/(loss) ($ billion) †	(12.6)	(2.7)	(14.7)	2.7	6.6	20.2
Stock price range (per share) ($)	6.06–9.48	6.65–9.7	1.01–8.79	1.50–10.37	9.75–17.42	9.05–18.97
Diluted per share amount of income/(loss) from continuing operations ($) †	(6.73)	(1.4)	(6.46)	0.86	1.66	4.94
Diluted per share amount of net income/(loss) ($) †	(6.72)	(1.38)	(6.46)	0.86	1.66	4.94
Cash dividends per share ($) †	0.25	0	0	0	0	0.05
Automotive gross cash ($ billion)[1]	33.9	34.6	13.4	24.9	20.5	22.9
Shareholder return (percent) ‡	1	(10.4)	(66)	337	67.9	(36)

✔ † 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

	2006	2007	2008	2009	2010	2011
Institutional Investors:	54	69	57	47	57	48
Top 15	34	38	33	28	29	23
Others	20	31	24	19	28	25
Employees and Management	19	13	12	9	7	7
Individuals [1]	27	18	31	44	36	45

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

	2006	2007	2008	2009	2010	2011
U.S. (Federal, State and Local)	1,121	1,299	780	674	617	567
Non U.S.	3,429	4,420	4,016	2,314	2,313	2,712
Total	4,550	5,719	4,796	2,988	2,930	3,279

Notes to Data

Data for 2006 exclude Federal refunds. Prior-year tax has been restated in order to include certain types of duty that were not included in the reports for prior years.

Analysis

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

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DATA

Product, Quality and Service

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

Total "things gone wrong" per 1,000 vehicles

2011
1,447

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. 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.

Analysis

In 2011, TGW degraded slightly compared to 2010 due to new entertainment and communication technologies and transmission issues.

Related Links

In This Report:

- Customer Satisfaction and Quality

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B. GQRS Customer Satisfaction (3 months in service)

Percent satisfied

2011
68

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. 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.

Related Links

In This Report:

- Customer Satisfaction and Quality

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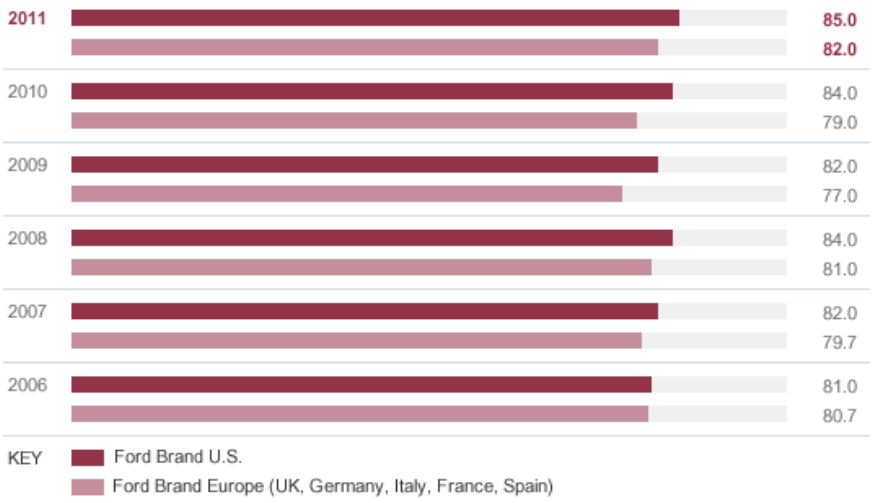
C. Sales Satisfaction with Dealer/Retailer

Net promoter score



	2006	2007	2008	2009	2010	2011
Ford Brand U.S.	81.0	82.0	84.0	82.0	84.0	85.0
Ford Brand Europe (UK, Germany, Italy, France, Spain)	80.7	79.7	81.0	77.0	79.0	82.0

Related Links

In This Report:

- Customer Satisfaction and Quality

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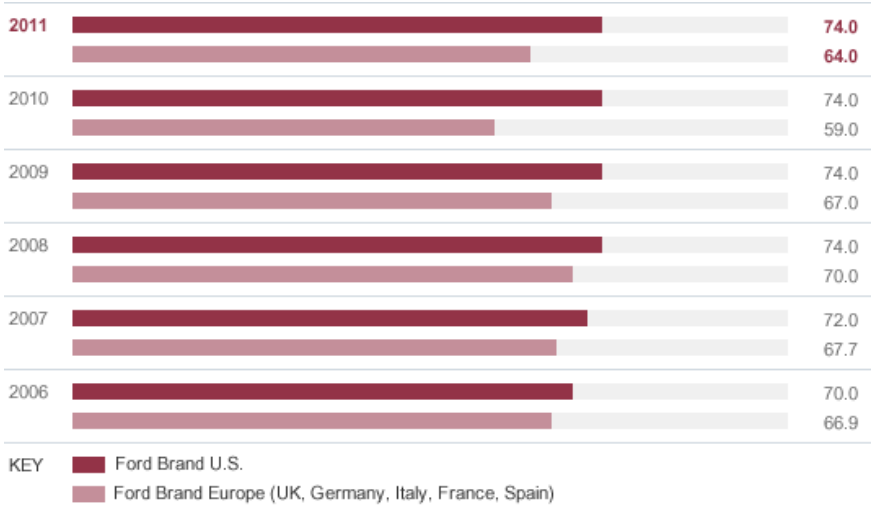
D. Service Satisfaction with Dealer/Retailer

Net promoter score



	2006	2007	2008	2009	2010	2011
Ford Brand U.S.	70.0	72.0	74.0	74.0	74.0	74.0
Ford Brand Europe (UK, Germany, Italy, France, Spain)	66.9	67.7	70.0	67.0	59.0	64.0

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. The improvement from 2004 is significant.

Related Links

In This Report:

- Customer Satisfaction and Quality

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DATA

Market Share and Sales

DATA ON THIS PAGE

View all data on this page as charts | tables

A. Ford Motor Company Market Share – United States

Percent

2006	2007	2008	2009	2010	2011
17.1	15.6	14.2	15.3	16.4	16.5

Reported to regulatory authorities

Related Links

In This Report:

- Regional Performance Highlights

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B. Ford Motor Company Market Share – Europe

Percent

2006	2007	2008	2009	2010	2011

10.6	10.9	10.0	9.1	8.4	8.3

Reported to regulatory authorities

Notes to Data

Annual market share data through 2008 included Volvo.

Related Links

In This Report:

- Regional Performance Highlights

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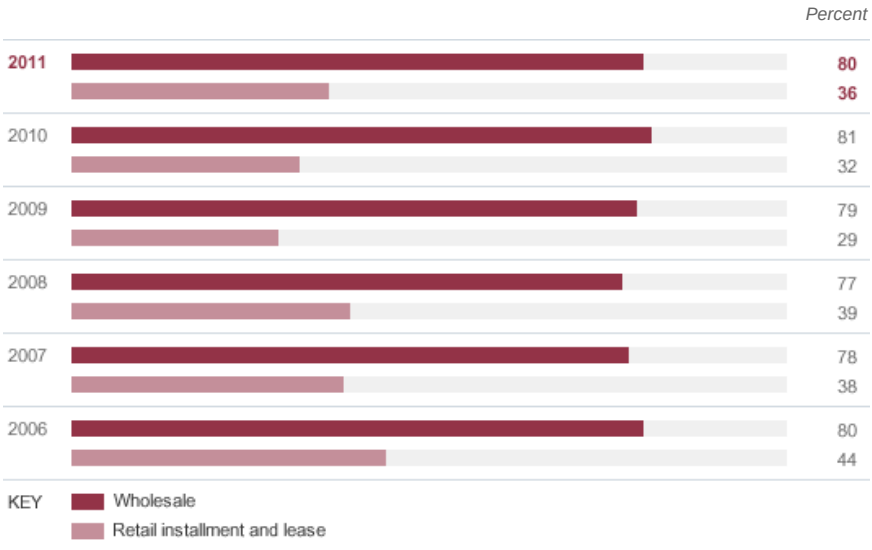
C. Ford Credit Financing Share – United States



	2006	2007	2008	2009	2010	2011
Wholesale	80	78	77	79	81	80
Retail installment and lease	44	38	39	29	32	36

Reported to regulatory authorities

Notes to Data

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.

Related Links

In This Report:

- Ford Motor Credit Company

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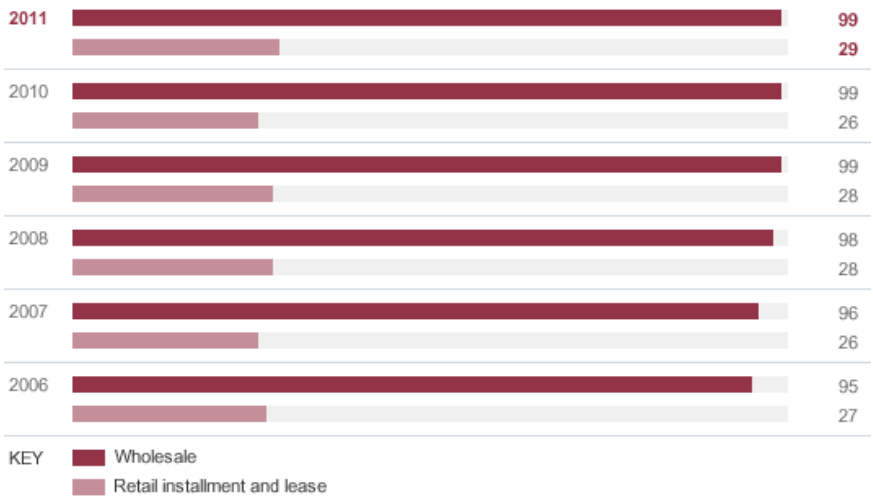
D. Ford Credit Financing Share – Europe

Percent



	2006	2007	2008	2009	2010	2011
Wholesale	95	96	98	99	99	99
Retail installment and lease	27	26	28	28	26	29

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.

Related Links

In This Report:

- Ford Motor Credit Company

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E. Summary of Vehicle Unit Sales

Thousands

2006	2007	2008	2009	2010	2011
6,597	6,553	5,407	4,817	5,524	5,695

Related Links

In This Report:

- Regional Performance Highlights

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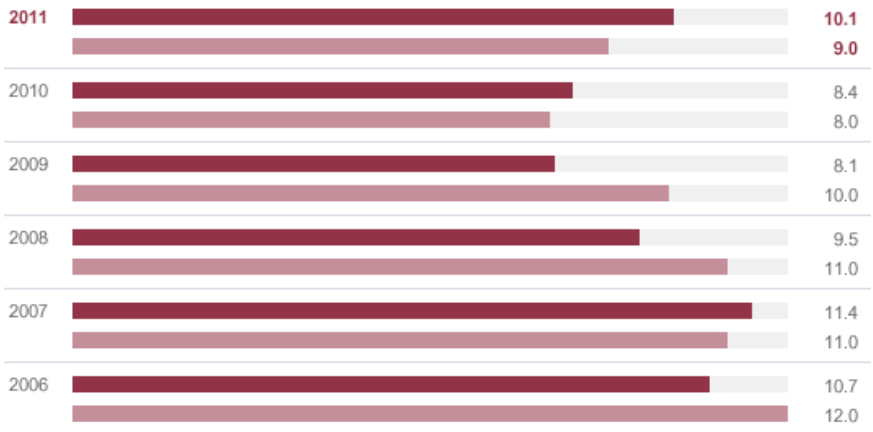
F. First-time Ford Buyers (Owners who Acquired a New Vehicle for the First Time)

Percent of first-time buyers



	2006	2007	2008	2009	2010	2011
Ford Motor Company U.S.	10.7	11.4	9.5	8.1	8.4	10.1
Ford Motor Company Europe (UK, Germany, Italy, France, Spain)	12.0	11.0	11.0	10.0	8.0	9.0

Related Links

In This Report:

- Customer Satisfaction and Quality

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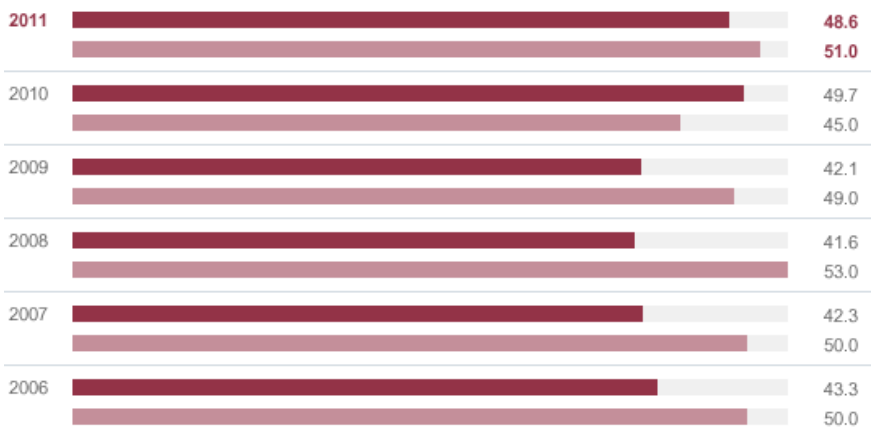
G. Owner Loyalty (Customers Disposing of a Ford Motor Company Product and Acquiring Another)

Percent loyal to corporation



	2006	2007	2008	2009	2010	2011

Ford Motor Company U.S.	43.3	42.3	41.6	42.1	49.7	48.6
Ford Motor Company Europe (UK, Germany, Italy, France, Spain)	50.0	50.0	53.0	49.0	45.0	51.0

Related Links

In This Report:

- Customer Satisfaction and Quality

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DATA

Innovation

DATA ON THIS PAGE

View all data on this page as charts | tables

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

Number of patents issued

2006	2007	2008	2009	2010	2011
387	357	343	325	430	444

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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Mike Bannister

Chairman and Chief Executive Officer
Ford Motor Credit Company
and
Executive Vice President
Ford Motor Company

Ford Motor Company has made tremendous progress in recent years, while maintaining a firm commitment to sustainable business principles and to leadership in areas such as fuel economy, emissions and recycling. As Ford's global financial services business, Ford Motor Credit Company played an important role in Ford's recovery, and we look forward to the exciting growth prospects on the road ahead.

We are proud that Ford Credit is a successful, consistently profitable business, paying significant dividends to Ford. These contributions help Ford improve its balance sheet and develop fuel-efficient, high-quality, exciting cars and trucks to meet its sustainability goals. For more than 50 years, Ford Credit has been a reliable source of support for Ford, our dealers and our customers during all economic cycles.

We are mindful of the legacy of Henry Ford, who wanted to help open the roads to all. With consistent and responsible financing for purchasing or leasing, we contribute to this legacy, especially in a time when access to a vehicle is crucial for so many people to work and manage daily life.

During the recent financial crisis, many banks curtailed auto financing. But Ford Credit stayed side by side with Ford and our dealers, helping them withstand the economic downturn. Many financial institutions abandoned customers with less-than-perfect credit. However, our proprietary risk management models enabled us to continue extending credit to individuals whom many others viewed as too great a risk.

As a finance company, Ford Credit is highly regulated, and in markets where we operate as a bank, additional regulations apply. The regulatory environment is changing around the world, and new requirements will affect us directly or indirectly. We pay strict attention to regulatory compliance, transparency and internal governance, which helps ensure our business efficiency, reassures investors who provide funding and contributes to the fair treatment of our customers.

Traditionally, most of our growth has been in North America and, like Ford, we are now expanding in key growth markets. For example, in China not only are we supporting the expanding Ford dealer network and consumer financing, but we also are working with authorities and financial institutions to contribute to the development of capital markets there.

On the environmental front, we work to reduce our environmental footprint through energy-efficiency improvements and electronic paperwork, including electronic contract approvals. We also are increasingly utilizing technology to make our business relationships with dealers and consumers more efficient, faster and more satisfactory.

We also monitor borrower compliance with environmental standards and regulations related to dealership facility construction and mortgage funding. Funding is advanced only after we know that final plans and specifications have been approved by the governing authority and all necessary permits have been obtained, including permits related to environmental requirements.

Related Links

This Report

- Ford Motor Credit Company

One area of our business that many people may not be familiar with is our insurance operation in North America, the American Road Insurance Company. When our dealers are struck by natural disasters, we help dealers restore their business operations and ensure that the damaged vehicles are properly disposed of and recycled.

Ford Credit has a strong “people” culture, and our employees show high job satisfaction year after year. Our employees are committed and engaged, and they are active supporters of deserving community and environmental causes.

As Ford grows its business, all of us at Ford Credit remain dedicated to a strong, sustainable, profitable financing business; exceptional dealer and customer satisfaction; performance that rewards our investors; and ensuring reliable support through all business cycles for Ford, our dealers and our customers.

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.

Ford is committed to 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 by 30 percent per vehicle by 2025 compared to a 2010 baseline, building on our reduction of 31 percent from 2000 to 2010.

We are also committed to reducing the overall environmental footprint of our vehicles and operations across a range of environmental issues. For example, we continue to increase the use of sustainable materials in our vehicles. And, we reduced waste to landfill by 20 percent per vehicle from 2010 to 2011 and expect to reduce it again by 10 percent per vehicle in 2012. We are also continuing to reduce VOC emissions 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.

105 miles per gallon

equivalent achieved by Focus Electric, which we began selling this year

100 percent

of Ford Motor Company vehicles built in North America have soy foam in their seat cushions and backs, as of 2011

Vehicle CO_2 Reductions

We reduced fleet-average CO_2 emissions from our 2011 model year U.S. new vehicles by 9 percent compared to the 2007 model year.

Ford Focus ECOnetic

We introduced the Ford Focus ECOnetic, which delivers fuel economy of 3.4L/100km and is the most fuel-efficient non-hybrid family car available in Europe.

Facilities Goals

We committed to 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.

Sustainable Materials

We now use at least 25 percent recycled-content seat fabrics in all new or redesigned vehicles sold in North America.

CLIMATE CHANGE AND THE ENVIRONMENT

- Design for Lifecycle Sustainability
  - Quantifying Our Environmental Impacts
  - Product Sustainability Index
- Climate Change
- Greening Our Products
- Greening Our Operations
- Data
- Voice: Dr. Rajendra K. Pachauri

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.

Among our product sustainability efforts, we are increasing our use of sustainable materials and eliminating undesirable materials and substances 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 Eco-Mode and Smart Gauge with Eco-Guide 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

- Eco-driving
- Greening Our Operations
- Logistics
- Product Sustainability Index
- Progress and Performance – Vehicles
- Supply Chain
- Sustainable Materials

Quantifying Our Environmental Impacts

The first step in improving the lifecycle impacts 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 when 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 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 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 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 manufactured, maintained or recycled at end of life. As vehicle fuel efficiency improves and lower-carbon fuels are made available, we expect that 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

Related Links

This Report

- Electrification: A Closer Look
- Product Sustainability Index

Vehicle Websites

- Ford Fiesta
- Ford Focus Electric
- Ford Focus (European)
- Ford Kuga
- Ford Mondeo

vehicle. A systems perspective is thus required when considering the CO_2 emissions and energy use associated with vehicle technologies. Considering either the vehicle technology or the fuel technology in isolation is not sufficient. BEVs and FCVs are capable of achieving very low CO_2 emissions, but only when powered by low-CO_2 electricity or low-CO_2 hydrogen. In short, the use of energy-efficient vehicles such as BEVs and FCVs does not in itself lead to a reduction in CO_2 emissions; those vehicles need to be combined with low-CO_2 electricity or fuels to achieve low total CO_2 emissions.

In 2012, we launched our carbon emissions and fuel cost calculator to help our fleet customers assess the emissions benefits of alternative fuel vehicles. This calculator allows fleet customers to 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 her 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. We hope to expand this calculator to Europe and China at a later date, as the U.S., Europe and China are expected to account for the majority of hybrid and electric vehicles through 2020. 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, 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); EuroNCAP safety (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. The PSI assessment of the Focus was the first joint PSI study done 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.

PSI Assessed Model Performance[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 2.0-liter 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

Related Links

This Report

- Materials Management
- Sustainable Materials

Ford.co.uk

- Product Sustainability Index reports

*1 metric ton = 1,000 kg

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

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 2.0-liter 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

	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, TÜV-tested interior and pollen filter efficiency	Better
2009 Ford Fiesta, Gasoline	Substance management, TÜV-tested interior and pollen filter efficiency	Better

Measurement Method

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

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, 2.0-liter 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 NAP 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 advance rewards for Active City Stop, Lane Keeping Aid, Forward Alert and Driver Alert	Better

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, 2.0-liter 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

Measurement Method

Sum of vehicle price and 3 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, 2.0-liter 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 PSI to be an effective lifecycle assessment and design tool. An external study, conducted by experts in the area of 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. 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.

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.
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. Our stabilization commitment includes:

- 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 enough to contribute to 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 – 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 technology to all our products and offering high-value, attractive models that are smaller, lighter and more fuel efficient, encouraging customers to shift their purchase behavior. We also continue to invest in energy-efficiency improvements at our facilities worldwide and, during 2010, explored 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 2011 model year U.S. new vehicles by 9 percent compared to the 2007 model year.
- Reduced the fleet-average CO_2 emissions from our European vehicles by 8.5 percent from the 2006 to 2010 calendar years.[1]
- Reduced CO_2 emissions from our global operations in 2011 by 8 percent on a per-vehicle basis, compared to 2010.
- Implemented three more engines with our patented EcoBoost® fuel-saving technology. By 2013, we expect to be producing approximately 1.5 million EcoBoost engines globally, about 200,000 more than originally expected.
- Began selling the Focus Electric, which gets 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.

Related Links

This Report

- Climate Change Policy and Partnerships
- Climate Change Risks and Opportunities
- Climate Change – The Issue
- Ford's Climate Change Strategy
- Ford's Greenhouse Gas Emissions
- Ford's Science-Based CO_2 Targets
- Progress and Performance
- Sustainable Technologies and Alternative Fuels Plan

Vehicle Websites

- Ford Focus Electric

- Offered 22 models in Europe that achieve a CO_2 emissions level of 130 grams per kilometer (g/km), and three that achieve less than 100 g/km.
- Will offer – by the end of 2012 – eight models in North America that provide 40 mpg or better – compared to 2009, when our most fuel-efficient vehicle achieved 35 mpg.

Our 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 providing price signals to encourage consumers to purchase these more fuel-efficient vehicles and lower-carbon fuels.

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 of our Sustainability Report 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, our climate change strategy and our progress and performance to date. The section then addresses climate change public policy issues.

---

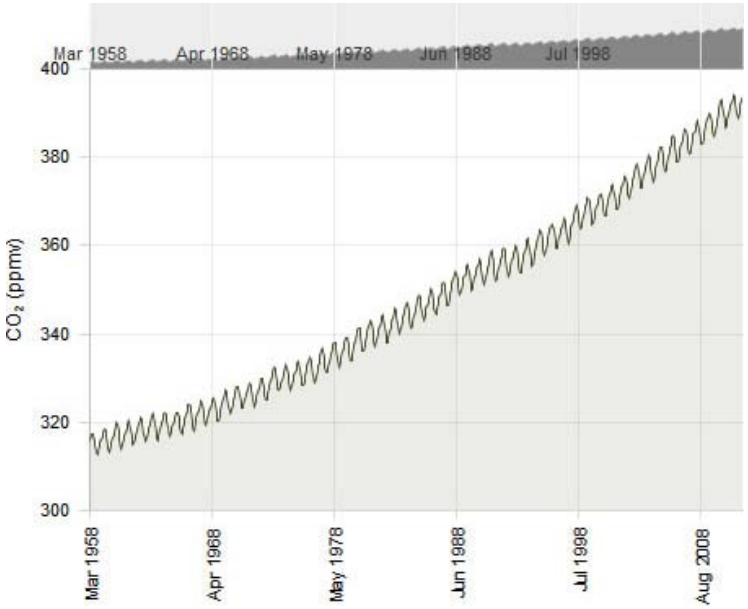
1. 2011 calendar year fleet-wide CO_2 emissions data for our European fleet will be available in November 2012.

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 392 ppm in 2012 (see Figure 1).

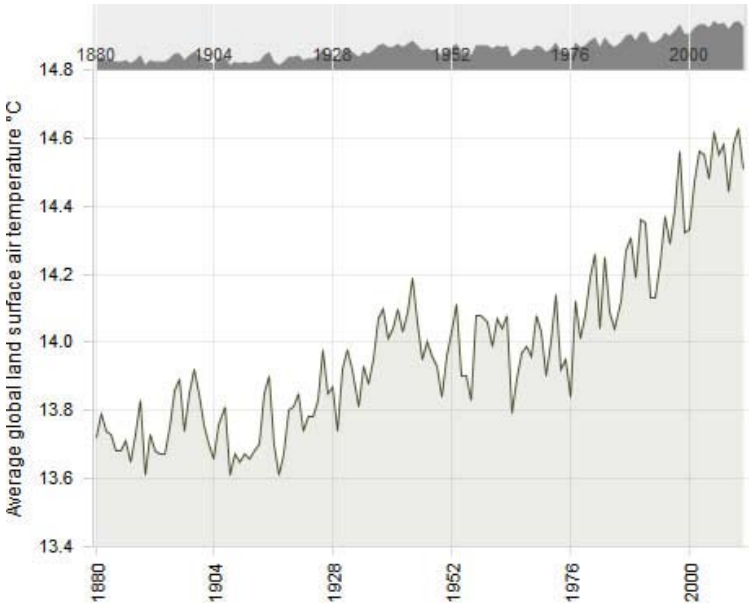
Global temperature records have been reported independently by scientists at the National Aeronautics and Space Administration (NASA) in the U.S., the National Oceanic and Atmospheric Administration in the U.S., the Climate Research Unit at the University of East Anglia in the U.K. and the Japanese Meteorological 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 2011 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



Data source: NOAA (2012)

Figure 2: Global temperature



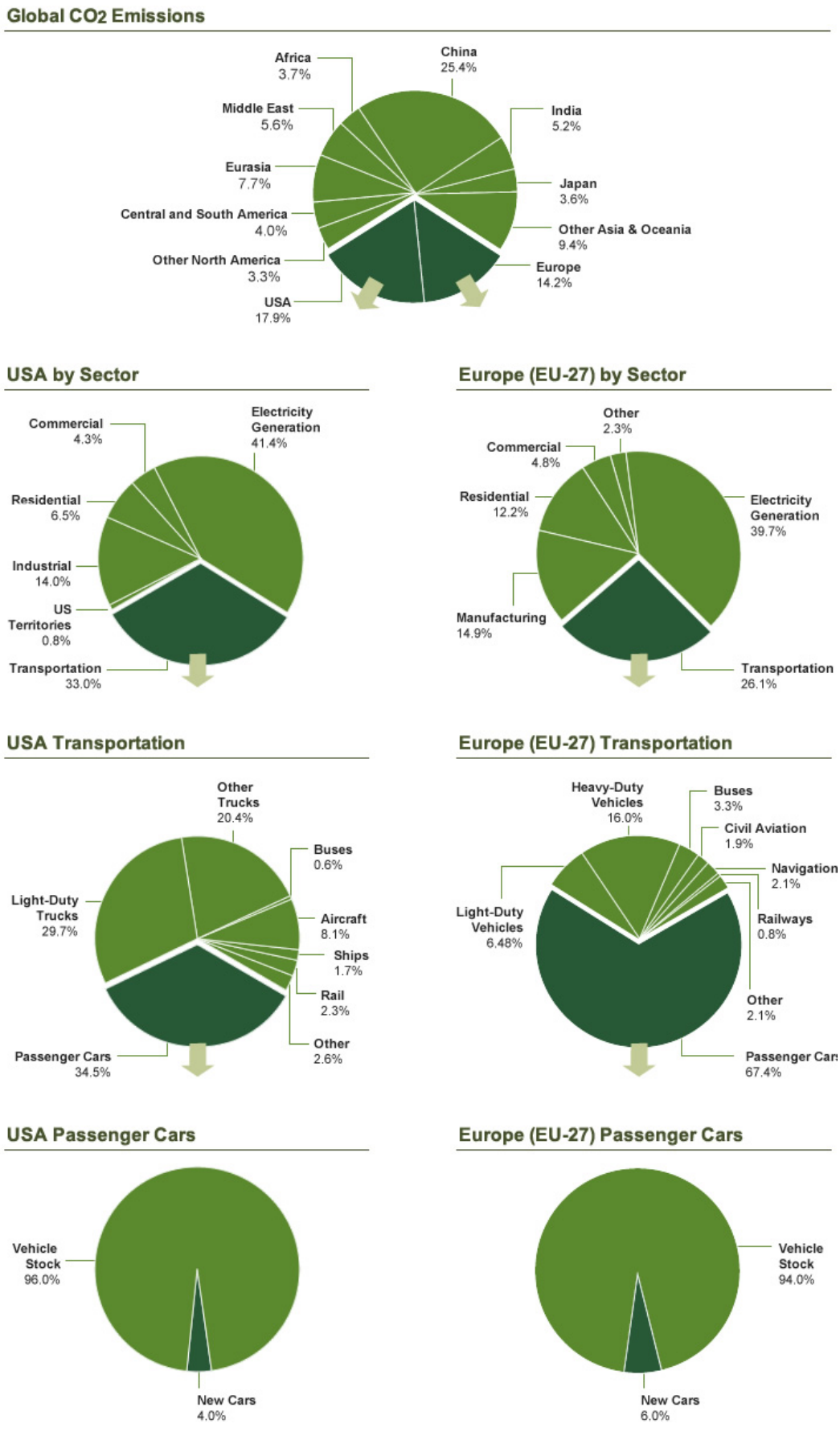
Data source: NASA (2012)

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 approximately 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. approximately 5 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 four) than those in China.

Figure 3: Regional distribution of fossil fuel CO_2 emissions in 2009



Global CO_2 Emissions

Percent

	2009
USA	17.9
Europe	14.2
Other North America	3.3
Central and South America	4.0
Eurasia	7.7
Middle East	5.6
Africa	3.7
China	25.4
India	5.3
Japan	3.6
Other Asia & Oceania	9.4

USA by Sector

Percent

	2009
Transportation	33.0
Industrial	14.0
Residential	6.5
Commercial	4.3
Electricity Generation	41.4

Europe (EU27) by Sector

Percent

	2009
Transportation	26.1
Manufacturing	14.9
Residential	12.2
Commercial	4.8
Electricity Generation	39.7
Other	2.3

USA Transportation

Percent

	2009
Passenger Cars	34.5
Light Duty Trucks	29.7
Other Trucks	20.4
Buses	0.6
Aircraft	8.1
Ships	1.7
Rail	2.3
Other	2.6

Europe (EU27) Transportation

Percent

	2009
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

	2009
Vehicle Stocks	96.0
New Cars	4.0

Europe (EU27) Passenger Cars

Percent

	2009
Vehicle Stocks	94.0
New Cars	6.0

Beyond CO_2

We have a holistic view of climate change and have addressed non-CO_2 long-term greenhouse gases such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrous oxide (N_2O) and sulfur hexafluoride (SF_6). Through our Restricted Substance Management Standard we have prohibited SF_6 in tires in magnesium casting. We are continuing our scientific research to determine the relative contribution of a wide range of long-lived greenhouse gases to radiative forcing of climate change.

Related Links

This Report

- Sustainable Materials

External Websites

- Montreal Protocol

In 2010, we worked with an international team of climate and atmospheric scientists under the auspices of the World Meteorological Organization to assess the global warming potentials of long-lived greenhouse gases. Given impressive reductions in the emission of criteria pollutants (hydrocarbons, NOx, particulate matter and carbon monoxide) enabled by improvements in engine and exhaust after-treatment technology, we believe that the contribution to climate change by these short-lived pollutants from light-duty vehicles will be of relatively minor importance in the future.[1] 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 radiative forcing of climate change.[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), N_2O and hydrofluorocarbon-134a (HFC-134a). Methane is formed in the engine and emitted into the atmosphere. 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 assessed the contribution to climate change from N_2O emissions from vehicle tailpipes (not including potential emissions associated with fuel production) as about 1 to 3 percent of that of the tailpipe CO_2 emissions from vehicles. Finally, 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.[3] 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.

CFCs, HFCs, HFOs and the Montreal Protocol

The Montreal Protocol on Substances that Deplete the Ozone Layer (1987) regulates the emissions of ozone-depleting substances such as chlorofluorocarbons (CFCs). Ford has been a leader in conducting research on CFC replacements. In 2010 we were awarded a U.S. Environmental Protection Agency Montreal Protocol Award in recognition of our work in this area. In the 1980s and early 1990s, all vehicle manufacturers used CFC-12 (CF_2Cl_2) as the refrigerant in air conditioning (AC) units. By the mid-1990s, vehicle manufacturers switched to hydrofluorocarbon-134a (also known as HFC-134a or CF_3CFH_2). Hydrofluorocarbons contain only hydrogen, fluorine and carbon. Hydrofluorocarbons do not contain chlorine and hence do not contribute to the well-established chlorine-based stratospheric ozone depletion chemistry. HFC-134a has a shorter atmospheric lifetime and smaller global warming potential than CFC-12 (see Table 1).

The lifecycle emissions of CFC-12 from AC-equipped vehicles in 1990 was approximately 400 g per vehicle per year.[4] We estimate that lifecycle emissions of HFC-134a from vehicles manufactured in 2010 are approximately 100 g per vehicle per year.[5] Looking to the future, based on published assessments,[6] we believe that HFC-134a emissions from a typical light-duty vehicle manufactured in 2017 will be approximately 50 g per vehicle per year.

Regulations in the EU require us to use compounds with global warming potentials of 150 or less in the AC units of all new vehicles starting in 2011 and all registered vehicles starting in 2017. HFC-134a has a global warming potential of 1,370,[7] and the automotive industry will not be able to use this compound in the future in new vehicles in the EU. Hydrofluoroolefins (HFOs) are a class of compounds that are safe for the ozone layer and have very small global warming potential (typically <10). Based upon engineering, environmental and safety assessments, Ford has chosen

the compound known as HFO-1234yf (also known as HFC-1234yf or CF3CF=CH2) for use in our 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.

To place the emissions of CFC-12, HFC-134a and HFO-1234yf into perspective, we can compare their contribution to radiative forcing of climate change with that of CO_2 emitted by the tailpipe of the vehicle. Figure 1 shows this comparison for a typical car in the U.S. from 1990, 2010 and 2016. The CO_2 equivalent (CO_2eq) contributions from refrigerants in Figure 1 were calculated assuming a CFC-12 AC system in 1990, an HFC-134a system in 2010 and either an HFC-134a or an HFO-1234yf system in 2016. The CO_2eq values for CFC-12, HFC-134a and HFO-1234yf were calculated using the emission estimates given above and the global warming potentials given in Table 1. The tailpipe CO_2 values were calculated using the U.S. National Highway Traffic Safety Administration requirement fuel economies of 27.5 mpg in 1990 and 2010 and 37.8 mpg in 2016 and assuming the car is driven 10,000 miles per year.

As seen in Figure 1, the emissions of CFC-12 from an AC-equipped car in 1990 had a climate impact that was actually greater than that of the CO_2 emitted from the tailpipe of the car. Replacement of CFC-12 with HFC-134a, together with improvements in the AC system, has led to a dramatic (approximately 30-fold) decrease in the climate impact of refrigerant emissions per vehicle for an AC-equipped vehicle (compare the two left-hand columns in Figure 1). Looking to the future, we anticipate a further – approximately factor of two – decrease in the impact of HFC-134a emissions on a per-vehicle basis (see the third column in Figure 1). Replacing HFC-134a with HFO-1234yf leads to a further decrease in the climate impact, and the AC refrigerant impact ceases to be discernible in the right-hand column in the figure.

The U.S. Environmental Protection Agency 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 based upon three well-established scientific facts:

First, 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*.

Second, as seen in Figure 1, replacing CFC-12 by 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.

Third, 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. More study, including an 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.

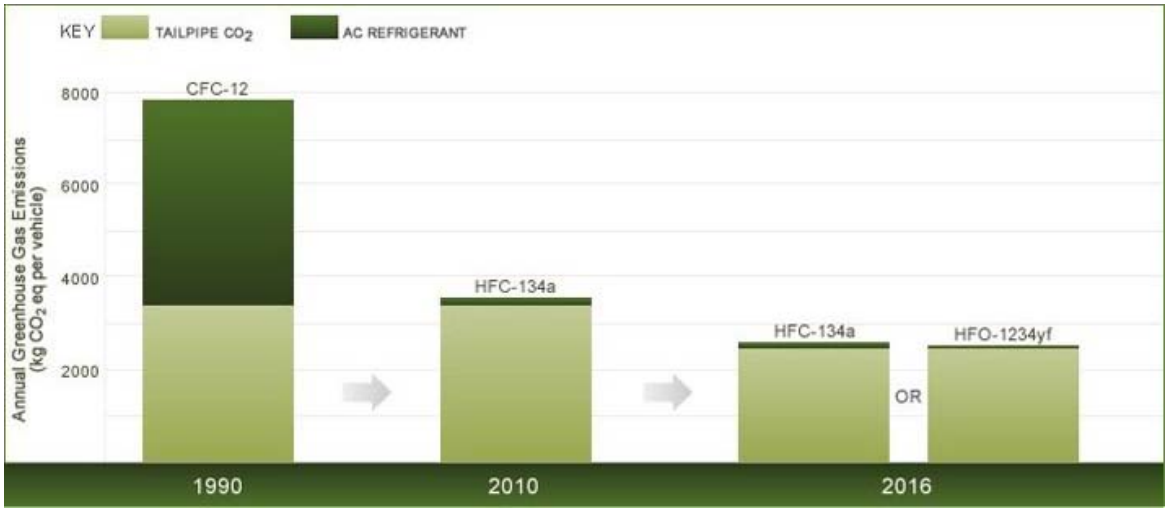


Table 1: Comparison of CFC-12, HFC-134a and HFO-1234yf

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.E. Anderson, S.A. Mueller, S. Winkler and J.M. Ginder, “Emissions Omissions,” *Science* 327, 268, (2010).
2. 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).
3. T.J. Wallington, J.L. Sullivan and M.D. Hurley, “Emissions of CO_2, CO, NOx, HC, PM, HFC-134a, N2O and CH4 from the Global Light Duty Vehicle Fleet,“ *Meteorol. Z.* 17, 109 (2008).
4. IPCC/TEAP, *Special Report: Safeguarding the Ozone Layer and the Climate System*, Cambridge University Press, 2005.
5. T.J. Wallington, J.L. Sullivan and M.D. Hurley, “Emissions of CO_2, CO, NOx, HC, PM, HFC-134a, N2O and CH4 from the Global Light Duty Vehicle Fleet,” *Meteorol. Z.* 17, 109 (2008).
6. 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).
7. World Meteorological Organization, *Scientific Assessment of Ozone Depletion: 2010*, Geneva (2010).
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. Data source: WMO/UNEP, *Scientific Assessment of Ozone Depletion: 2010*, Geneva (2010). Global Warming Potential 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 our total CO_2 emissions 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 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 on the road.

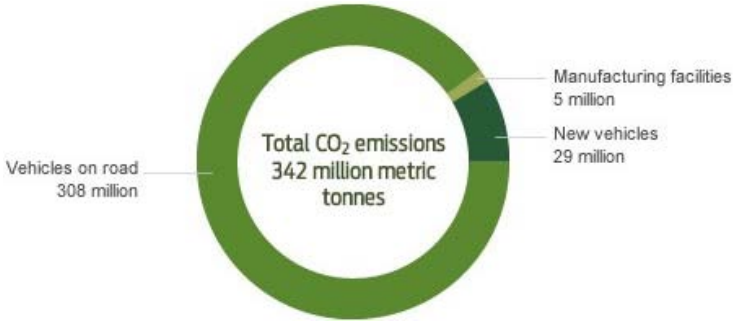
We estimate that our total CO_2 emissions are in the range of 350–400 million metric tons (Mmt) per year, varying over time with fluctuations in vehicle production and sales, on-road fleet size and vehicle miles traveled. The estimate includes emissions from our facilities, emissions from current-year vehicles and emissions from all Ford vehicles on the road. 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 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.

Figure 1: Estimate of CO_2 emissions from our facilities and Ford vehicles on the road in 2008, 2005 and 1999.

Chart | Table

Chart



Table

Metric tonnes

	CO_2 emissions
Manufacturing facilities	5 million
New vehicles	29 million

Related Links

This Report

- Creating a Sustainable Supply Chain
- Materials Management
- Supplier Environmental Management
- Supplier Greenhouse Gas Emissions

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.
- Emissions from current-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. We are also expanding our approach to enhance supplier environmental performance beyond more-established supplier environmental performance expectations, which include 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 greenhouse gas emissions in our supply chain.)

Within the Aligned Business Framework agreement with our strategic suppliers, environmental leadership is integral to overall business performance metrics. Climate-change-related activities are highlighted as potential leadership opportunities. In addition, our requirement that suppliers implement robust environmental management systems will better enable them to understand, measure and report their emissions. We will also seek out opportunities to partner with suppliers to improve the greenhouse gas emissions performance of our products and processes, and improve energy efficiency throughout the vehicle lifecycle, including in the supply chain.

For more information on our efforts to quantify our suppliers' greenhouse gas emissions please see Supplier Greenhouse Gas Emissions.

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.

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 smaller and 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.

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 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 Ford's strategic response to the risks and opportunities posed by the climate change issue.

Related Links

This Report

- Climate Change Policy and Partnerships
- Financial Health
- Ford Around the World
- Ford's Climate Change Strategy
- Supply Chain
- U.S. Energy Security
- Water

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. For example, a survey conducted by Maritz Research in the fall of 2011 shows that fuel economy has jumped dramatically in importance in the last decade to become a primary reason behind the purchase of nearly every kind of vehicle. This survey found that more than 40 percent of consumers now view fuel economy as "extremely important" when considering a new vehicle purchase today. One-third of consumers say fuel economy has the "greatest impact" on their next purchase. Ford's own surveys confirm this trend. In a survey that Ford conducted in 36 U.S. cities in the fall of 2011, nearly 45 percent of customers said fuel economy is their top consideration.

This trend is influencing buyer behavior. Between 2005 and 2011 the car share of the U.S. market increased from 45.3 percent to 48.1 percent, while the truck share declined from 54.7 percent to 51.9 percent. From 2010 to 2011, there was a slight decrease in the car share and slight increase in the truck share; however, the long-term trend from 2005 to today is toward an increasing market share for cars and decreasing market share for trucks. Sales of small cars increased from 15 percent of sales in 2005 to 19.2 percent in 2011. Sales of hybrid electric vehicles increased 6 percent from 2010 to 2011. As a percentage of the overall market, however, hybrid vehicle sales dropped slightly from 2.4 percent of the market in 2010 to 2.3 percent in 2011.

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. Some of these incentives are bound to upper limits of CO_2 emissions of 160 g/km and less, which has boosted sales of small cars. Other schemes are linked to regulatory emissions standards (e.g., Euro 4 and Euro 5). 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 20 to 25 percent ethanol, and pure ethanol is also widely used. While fuel economy and CO_2 emissions are not currently regulated in Brazil, a voluntary fuel-economy labeling program is already 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. Several hybrid vehicles are currently offered or are planned for introduction to Brazil.

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.

Supply Chain Risks

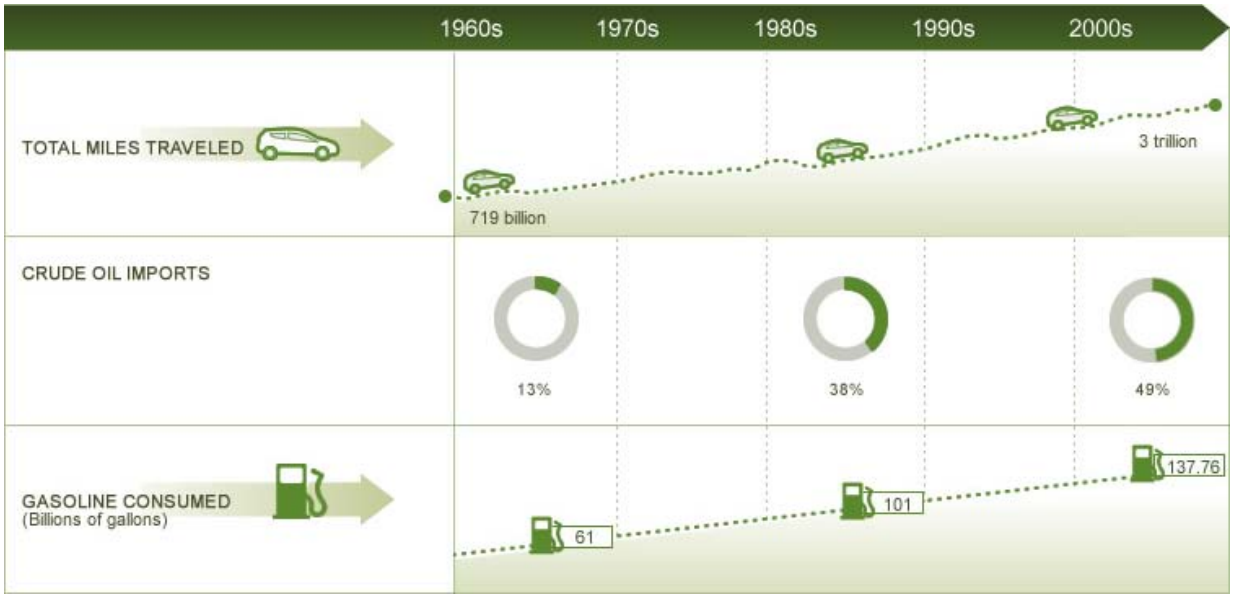
Our suppliers, which are located in more than 60 countries, are subject to market, regulatory and physical risks as a result of GHG regulation and the impacts of climate change. These risks could affect their competitiveness or ability to operate, creating the potential for disruptions to the flow of 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 promote a competitive supply chain.

U.S. Energy Security

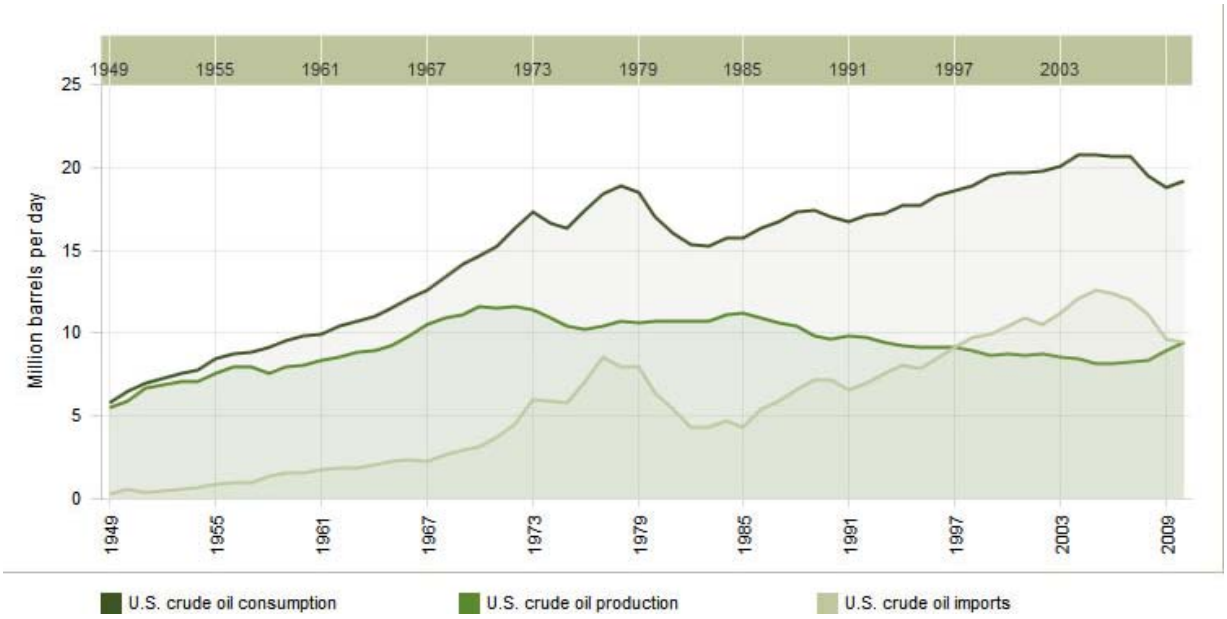
The following charts illustrate trends that affect concerns about U.S. energy security. The first chart shows the increase in the number of miles all U.S. drivers are traveling each year, the long-term trend towards an increasing percentage of crude oil imports and the increasing consumption of gasoline.

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. This increase is reflected in the first chart below, which shows that miles traveled increased by a factor of four while gasoline consumption increased by a little over a factor of two.

The second chart shows that U.S. demand for crude oil has declined. The economic downturn, improvements in vehicle fuel efficiency, and changes in consumer behavior have contributed to this decline. 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. The continued supply disruptions and instability in the Middle East and Africa have contributed to the significant increase in world crude prices during the first quarter of 2012. As crude oil is the most significant factor in the price of gasoline, some analysts are predicting possible record high gasoline prices during in 2012.



Crude Oil Consumption, Imports and U.S. Production



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 a 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.

Related Links

This Report

- Climate Change Governance
- Financial Health – Mobility
- Ford's Science-Based CO_2 Targets
- Greening Our Products
- Sustainable Technologies and Alternative Fuels Plan

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, and our commitment to outstanding fuel economy aligns well with consumer interest in fuel-sipping vehicles. During 2011, for example, our U.S. market share grew for the third year in a row, driven in part by the popularity of several of our vehicles that achieve best-in-class fuel economy.

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 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.

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.

Related Links

This Report

- Climate Change Governance
- Progress and Performance

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.

Related Links

This Report

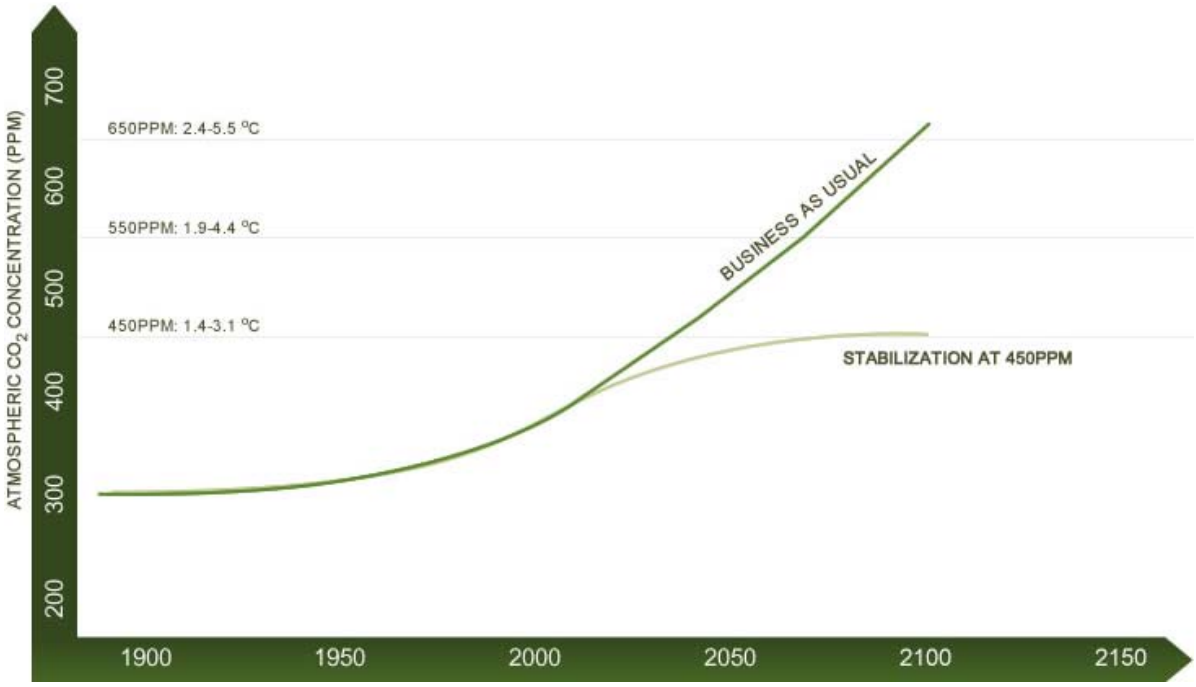
- The "CO_2 Model:" The Science Behind Our Scientific Approach

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. We have shared our thinking behind the development of these industry average targets with interested stakeholders and have received positive feedback. 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. The reductions called for by the glide paths are more aggressive than our previously announced 30 percent reduction goal from 2006 to 2020.

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 plan to annually review, and revise where necessary, the assumptions and input data in the CO_2 model. We anticipate that the model will evolve with better understanding over time, and we will report significant changes in future reports.

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.

As illustrated in the graphic below, we have already made significant progress in improving the fuel economy of, and hence reducing the CO_2 emissions from, our vehicles.

Nameplate Fuel Economy Improvement Summary

	2002 MY–	2012 MY	% FE Improvement (Unadjusted Combined)
FOCUS			22.2[1]
ESCAPE			13.0[2]
EXPLORER			36.1[3]
F-150			12.8[4]

1. Wagon excluded.
2. Hybrids excluded.
3. Explorer Sport, Sport Trac and ethanol-fueled versions excluded.
4. Natural gas, alternative-fueled, bi-fueled and supercharged vehicles excluded.

In 2010, we applied the CO_2 glide path methodology to develop CO_2 targets for our commercial vehicles and facilities as well. We plan to review our glide path analysis, and update it as appropriate, to incorporate new developments in climate science, new forecasts for vehicle sales and future changes in the CO_2 intensity of fuels (e.g., increased use of biofuels, or oil from tar sands). Any significant changes to the glide path will be discussed in future Sustainability Reports.

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, they have assisted us in including a detailed description of light-duty vehicles in a model of global energy use for 2010 to 2100. Nine technology cost cases were 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.[1] 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. M. Grahn, M.I. Williander, J.E. Anderson, S.A. Mueller, T.J. Wallington, "Fuel and Vehicle Technology Choices for Passenger Vehicles in Achieving Stringent CO_2 Targets: Connections between Transportation and Other Energy Sectors," *Environ. Sci. Technol.* 43, 3365 (2009).

The "CO_2 Model:" The Science Behind Our Scientific Approach

In 2005, Ford's scientists began development of a global 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 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.

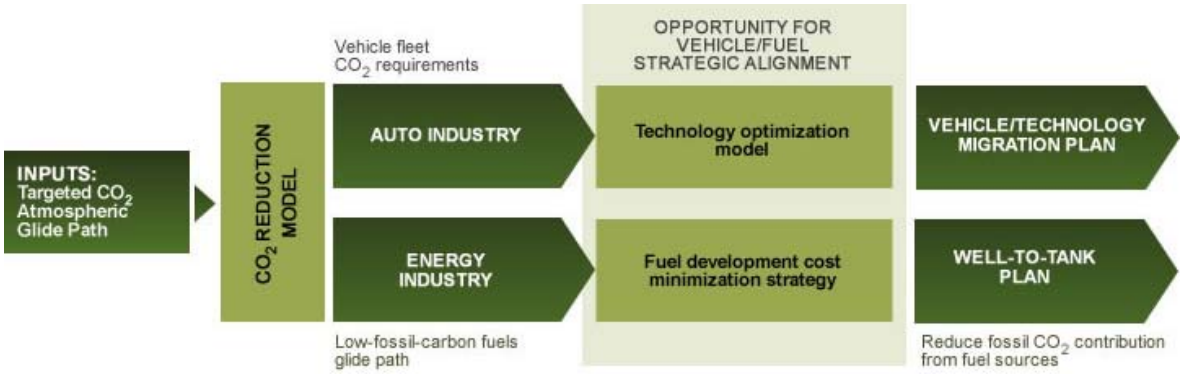
Are you continuing to test alternative scenarios?

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 above), 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.

Ford's Sustainability Framework and Technology Migration Development



Progress and Performance

Vehicle + Fuel + Driver = GHG emissions

How is Ford doing in its quest to reduce greenhouse gas (GHG) emissions? Based on analyses of lifecycle vehicle carbon dioxide (CO_2) emissions, approximately 80 to 90 percent of GHGs are emitted while the vehicle is in use, rather than during its manufacture or disposal. The in-use emissions depend on three major factors:

1. The fuel economy of the vehicles, which in turn depends on many characteristics of the vehicles themselves (such as their weight, powertrain and aerodynamics)
2. The well-to-wheels greenhouse gas profile[1] of the fuels used in the vehicles
3. How the vehicles are used and maintained by their drivers

Our shorthand for this is "Vehicle + Fuel + Driver = GHG emissions." This section reviews our progress in reducing "use phase" vehicle emissions. Emissions from our operations, logistics (the transportation of parts for our vehicles and 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 more detail in the "Greening Our Operations" section for our facilities and the supply chain section for logistics and suppliers.

1. In other words, emissions resulting from making, distributing and using the fuel.

Related Links

This Report

- Greening Our Operations
- Logistics
- Quantifying Our Environmental Impacts
- Supplier Greenhouse Gas Emissions

Vehicle

Vehicle + Fuel + Driver = GHG emissions

ON THIS PAGE

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 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. Between 2008 and 2013, we will introduce 62 new or significantly upgraded engines, transmissions and transaxles globally to help us improve fuel economy and reduce carbon dioxide emissions across our global fleet. By the end of 2012, we will have delivered 50 of the 62 planned new or significantly updated powertrains, or approximately 81 percent of our planned introductions.

EcoBoost® engines, which use gasoline turbocharged direct-injection technology, are the centerpiece of our efforts to improve vehicle fuel efficiency. EcoBoost engines deliver 10 to 20 percent better fuel economy, 15 percent fewer carbon dioxide emissions and 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. We are on track to equip as much as 80 percent of our global lineup and 90 percent of our North American lineup with EcoBoost engines by 2013. That's about 1.5 million engines. 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

In the U.S., we continue to improve the fuel economy of our new and refreshed vehicles. For example, we made significant improvements to the new 2012 Ford Focus, resulting in an average fuel economy improvement across all model types of 4 miles per gallon (mpg) compared to the 2011 model year. Also in the 2012 model year, we introduced the all-new Focus Electric, with a fuel-economy equivalent rating – according to the U.S. Environmental Protection Agency (EPA) – of 105 mpg (110 mpg in the city). Substantial gains were also made to the fuel economy of the Ford Edge with the introduction of the 2.0L EcoBoost four-cylinder engine and innovative aerodynamics technologies such as Active Grille Shutter and side-door rocker moldings to reduce

Related Links

This Report
- EcoBoost engines
- Ford Around the World
- Sustainable Technologies and Alternative Fuels Plan

Vehicle Websites
- Ford C-MAX
- Ford C-MAX Energi
- Ford C-MAX Hybrid
- Ford Edge
- Ford Escape
- Ford Explorer
- Ford Falcon
- Ford Fiesta
- Ford Focus
- Ford Focus Electric
- Ford Fusion Energi
- Ford F-150
- Ford Galaxy
- Ford Grand C-MAX
- Ford Mondeo
- Ford Mustang
- Ford S-MAX
- Lincoln MKZ

Ford.co.uk
- ECOnetic technology

drag. We also introduced the 2.0L EcoBoost on the Ford Explorer, which delivers a 30 percent fuel-efficiency improvement over the highest fuel-economy variant of the previous-generation 2010 Explorer.

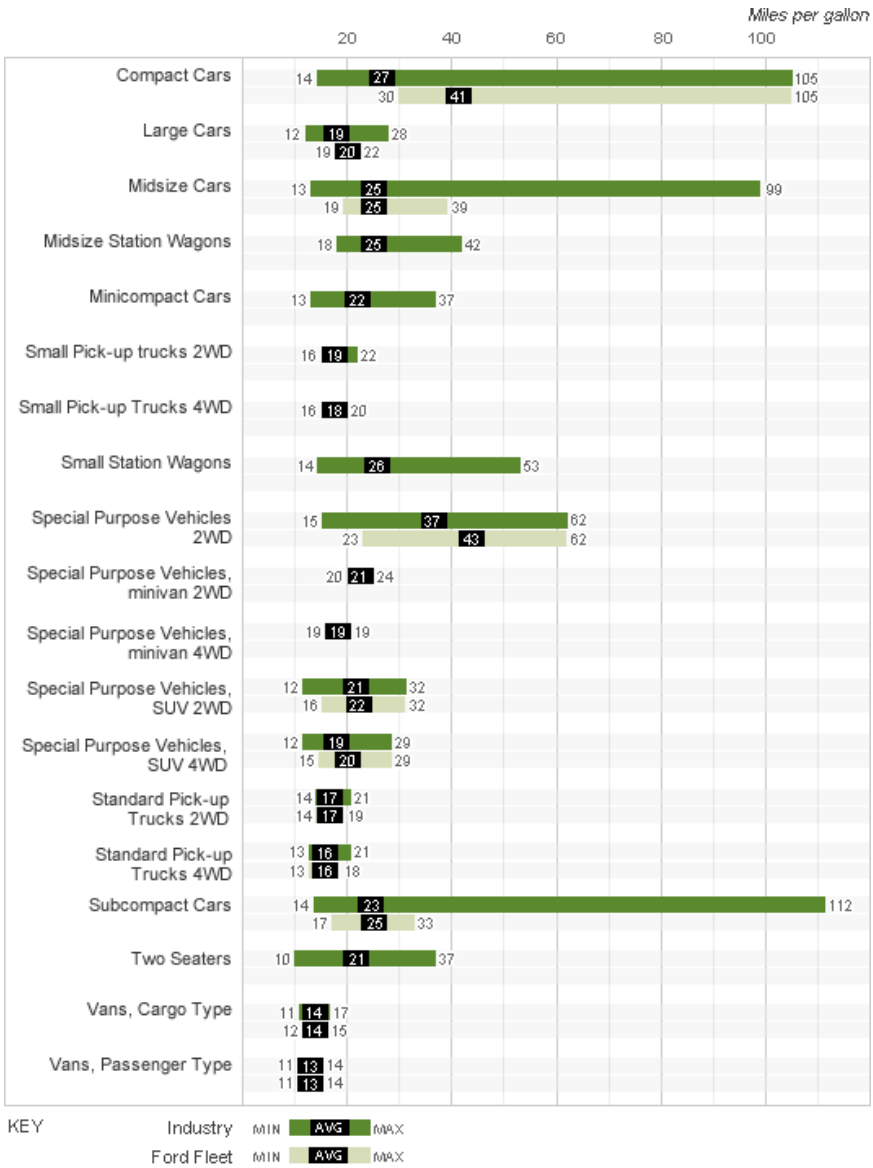
As seen in the graphic below, Ford's 2012 model year U.S. vehicles rank better than the industry fuel-economy average in six of 11 categories and the same in five.

For the 2011 model year, our fleet CO_2 emissions decreased by about 3 percent relative to the 2010 model year, and improved 9 percent compared to the 2007 model year. Preliminary data for the 2012 model year project that the Corporate Average Fuel Economy (CAFE) values will improve for cars and stay about the same for the truck fleet, compared to the 2011 model year. On an overall fleet basis, preliminary estimates indicate a 2012 CAFE improvement of 7.6 percent compared to 2011.

In Europe, we have reduced the average CO_2 emissions of our car fleet by 8.5 percent between 2006 and 2010 calendar year.[1] We have achieved this through the introduction of a variety of innovations, such as advanced common rail diesel engines available across the European model range – including the ECOnetic Technology range of low-CO_2 vehicles and the introduction of EcoBoost direct-injection, turbocharged gasoline engines.

Fuel Economy of U.S. Ford Vehicles by Segment

Chart | Table



Miles per gallon

	Industry			Ford		
	Minimum	Average	Maximum	Minimum	Average	Maximum
Compact Cars	14	27	105	30	41	105
Large Cars	12	19	28	19	20	22
Midsize Cars	13	25	99	19	25	39
Midsize Station Wagons	18	25	42			
Minicompact Cars	13	22	37			
Small Pick-up Trucks 2WD	16	19	22			
Small Pick-up Trucks 4WD	16	18	20			
Small Station Wagons	14	26	53			
Special Purpose Vehicle 2WD	15	37	62	23	43	62
Special Purpose Vehicle, minivan 2WD	20	21	24			
Special Purpose Vehicle, minivan 4WD	19	19	19			
Special Purpose Vehicle, SUV 2WD	12	21	32	16	22	32
Special Purpose Vehicle, SUV 4WD	12	19	29	15	20	29
Standard Pick-up Trucks 2WD	14	17	21	14	17	19
Standard Pick-up Trucks 4WD	13	16	21	13	16	18
Subcompact Cars	14	23	112	17	25	33
Two Seaters	10	21	37			
Vans, Cargo Types	11	14	17	12	14	15
Vans, Passenger Type	11	13	14	11	13	14
Total	10	22	112	11	23	105

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. Some examples of our recently launched vehicles that met this commitment as of June 2012 include:

- The Ford Focus Electric has an EPA fuel economy rating of 105 miles per gallon equivalent (MPGe), making it the most fuel efficient compact vehicle available in the U.S.
- The 2012 Ford Explorer with both the V6 and the 2.0L I-4 EcoBoost engine delivers best-in-class fuel economy. The V6 Explorer delivers up to 17 mpg in the city and 25 mpg on the highway, putting among the leaders for fuel economy in the full-size V6 SUV segment in fuel efficiency. Only the EcoBoost Explorer does better, with an EPA rating of 28 mpg on the highway.
- The 2012 Ford F-150 delivers best-in-class fuel economy among full-size pickup trucks, with its 3.7L V6 4X2. This vehicle offers fuel economy of 17 city/23 hwy/19 combined. The F-150 3.5L V6 EcoBoost engine offers a best-in-class mix of torque, capability, and fuel economy; this vehicle offers fuel economy of 16 city/22 hwy/18 combined with 420 lb-ft of torque, best-in-class towing at 11,300 lbs and best in class payload at 3,100 lbs. The F-150 with 5.0L V8 has best-in-class fuel economy of comparable V8s at 15 city/21 hwy/17 combined.[2]
- The new Ford Fiesta ECOnetic Technology is the most fuel-efficient and lowest-CO_2-emission passenger car Ford has ever offered in Europe. Powered by a 1.6L Duratorq TDCi diesel, the new Fiesta ECOnetic Technology offers fuel economy of 3.3L/100km (86 mpg U.K.[3]/71 mpg U.S.) and delivers CO_2 emissions of 87 g/km.
- The Ford Focus ECOnetic Technology, which delivers fuel economy of 3.4L/100km (83.1 mpg U.K.[4]/69 mpg U.S.) and CO_2 emissions of 88g/km – is one of the most fuel-efficient non-hybrid family cars currently available in Europe.

The Ford Focus Electric on show at the 2012 Geneva Motor Show

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 Technology and Alternative Fuels Plan and offer outstanding fuel economy and reduce CO_2 emissions, as seen in the following examples from 2011 and early 2012:

- We continued to introduce new vehicles with best-in-class fuel economy, including the 2012 model year Ford Focus, Ford F-150 and Explorer. All of these vehicles have unsurpassed fuel economy in their respective segments.[5]
- With the introduction of the all-new Ford Escape and Fusion in 2012, we will have the most fuel-efficient vehicle lineup in our Company's history.

- As of June 2012, Ford offers four vehicles that get 40 mpg (or MPGe) or better:
  - Ford Focus SFE
  - Ford Fiesta SFE
  - Lincoln MKZ Hybrid
  - Ford Focus Electric
- By the end of 2012, Ford will introduce three more vehicles with 40 mpg or MPGe or better:
  - Ford Fusion Energi
  - Ford C-MAX Hybrid
  - Ford C-MAX Energi

As of the end of 2011, Ford offered 13 vehicles that get 30 mpg or better:

- Ford Edge with EcoBoost: 21 mpg/30 mpg
- Ford Escape Hybrid FWD: 34 mpg/31 mpg
- Ford Escape Hybrid AWD: 30 mpg/27 mpg
- Ford Fiesta five-speed manual: 29 mpg/37 mpg
- Ford Fiesta automatic: 29 mpg/38 mpg
- Ford Fiesta SFE automatic: 29 mpg/40 mpg
- Ford Focus five-speed manual: 26 mpg/36 mpg
- Ford Focus automatic: 28 mpg/38 mpg
- Ford Focus SFE automatic: 28 mpg/40 mpg
- Ford Fusion 2.5L automatic: 23 mpg/33 mpg
- Ford Fusion Hybrid: 41 mpg/36 mpg
- Ford Mustang Coupe 3.7L automatic: 19 mpg/31 mpg

- Ford Mustang Convertible 3.7L automatic: 19 mpg/30 mpg

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 lineup with EcoBoost engines by 2013.

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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 its cars by 30 percent between 2006 and 2020. The innovative range of low-CO_2 features will be available in an increasing number of Ford vehicles in Europe, qualifying them to wear the ECOnetic Technology badge, which has been applied since October 2011 to all Ford cars that are the leaders or among the very best in terms of fuel economy in their segments. The badge will appear on more than 30 models by the end of 2012.

ECOnetic Technology features such as Automatic Start/Stop, Smart Regenerative Charging, Active Grille Shutter, EcoMode and other fuel-saving features are already available, or will be by the end of 2012, 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.

The Ford Fiesta ECOnetic

With the new generations of the Ford Fiesta and Focus ECOnetic Technology 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 ECOnetic Technology, Ford’s most fuel-efficient and lowest-CO_2-emission passenger car ever, offers fuel economy of 3.3L/100km (86 mpg U.K.[6]/71 mpg U.S.) and CO_2 emissions of 87g/km. The new model showcases Ford ECOnetic Technology innovations like 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 Focus ECOnetic Technology delivers fuel economy of 3.4L/100km (83.1 mpg U.K.[7]/69 mpg U.S.) and CO_2 emissions of 88g/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 Ford Mondeo ECOnetic has a specially calibrated 115 PS (85 kW) version of the 1.6L Duratorq TDCi engine equipped with a standard cDPF. 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/100km (65.6 mpg U.K.[8]), 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 is Ford’s most-efficient gasoline vehicle ever and 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/100km (58.9 mpg U.K.[9]/49 mpg U.S.) and CO_2

emissions of 109g/km. The 125PS model returns 5.0L/100km (56.5 mpg U.K. /47 mpg U.S.) with CO_2 emissions of 114g/km.

- The new three-cylinder 1.0L EcoBoost engine will come to other models during 2012, including the Ford B-MAX and C-MAX.

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 diesel in wearing the ECOnetic Technology badge, recognition reserved for Ford cars that are either leaders or among the very best in their segment in terms of fuel economy. The new Focus 1.0L EcoBoost is Ford's most fuel-efficient gasoline engine vehicle ever.

The 1.0L EcoBoost 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 170Nm between 1,400 rpm and 4,500 rpm (or between 1,400 rpm and 4,000 rpm in 100PS version) supports a fuel-efficient driving style and delivers a good performance feel and diesel-like torque experience. The 1.0L EcoBoost engine also will be offered in the C-MAX and all-new B-MAX this year, with other models to follow.

In addition, our global electric vehicle plan is extending to Europe with the Focus Electric, which will be launched in late 2012, and will launch hybrid vehicles 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 2015. These advanced, fuel-efficient technologies – including turbocharging, direct injection, twin independent variable camshaft timing (Ti-VCT) and six-speed transmissions – will deliver a more than 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. The all-new 1.0L EcoBoost direct-injection turbocharging gasoline engine, the smallest of Ford's EcoBoost engine family, will be produced in China for application in future vehicles for the Chinese market. Ford's joint venture, Changan Ford Mazda Automobile Co., Ltd. (CFMA), 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.

In India, we are continuing to introduce vehicles with excellent fuel economy. The recently launched all-new Fiesta – powered by new top-of-the-line 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.

In Australia, we launched an EcoBoost version of the Ford Mondeo in 2011 and an EcoBoost Ford Falcon in 2012. 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 implemented improved engine-compression ratios – or the ratio in which the air and fuel mixture is compressed in the engine combustion chamber – on flexible-fuel vehicles in Brazil. This optimizes fuel efficiency in vehicles using biofuels, which have a higher octane rating than petroleum-based gasoline. We have also improved the gearing ratios, aerodynamics and rolling resistance of our South American models, further increasing fuel economy. 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.

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1. The 2011 calendar-year fleet-wide CO_2 emissions data for our European fleet will be available in November 2012. For all years, these data do not include Volvo.
2. F-150 fuel economy is EPA-estimated compared to non-hybrid engine 4X2 light-duty full-size pickups. The F-150 with 5.0L V8 fuel economy is best in class compared to other trucks in its class with small V8 engines of 5.0L or less displacement.
3. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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.
5. Based on adjusted city/highway fuel-economy label values from the 2011 and 2012 MY EPA Fuel Economy Guides.
6. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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.
7. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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.
8. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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.
9. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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.
10. This fuel economy number was calculated according to the European Fuel Economy Directive EU 93/116/EEC, which uses European drive cycles. 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.

Fuel

Vehicle + Fuel + Driver = GHG emissions

To reduce the 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. Electrification also offers flexibility in tailoring lower-carbon solutions based on locally available fuels and technology options such as carbon capture and storage.

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. This 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 (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 ethanol blends greater than E10. 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

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- Climate Change Policy and Partnerships: Renewable Fuels Policy
- Electrification: A Closer Look
- Renewable Biofueled Vehicles
- Sustainable Technologies and Alternative Fuels Plan

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.

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. 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.)

MyFord Touch map-based navigation with Eco-Route option

SmartGauge® with EcoGuide is a dashboard display in the Ford Fusion and Lincoln MKZ Hybrids 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

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Vehicle Websites
- Ford B-MAX
- Ford Edge
- Ford Explorer
- Ford Focus
- Lincoln MKX

Corporate.ford.com
- Eco-Driving Tips

External Websites
- ECO-WILL
- Ford Driving Skills for Life

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 will be implemented in more European Ford models in the future and in the 2012 Ford Focus in North America.

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 (FDSFL) 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 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 2011, more than 17,000 German drivers had been "eco-trained" under real-world conditions.

In 2011, Ford continued to support 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:

Ford supports ECOWILL, an Eco-Driving education program

- 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 as a "do it first, do it right" approach under the leadership of EFA, the European driving school association.

In 2010 Ford's eco-driving training concept was recognized as a model for driver training with a "Good Practice Energy Efficiency" award from dena, the official German energy agency. The recognition was for the one-hour "compact course" version of the training. All of the Ford eco-driving program details, measurements and consumer surveys were analyzed and evaluated to ensure they meet dena's stringent criteria for good practice. Ford is the only automaker to receive this recognition for its driver-training programs, which benefits both the driver and the environment.

In Asia Pacific and Africa, Ford launched the FDSFL driver training program in 2008 with a "train-the-trainers" workshop in Bangkok, Thailand. At the workshop, Ford professionals from Germany trained two to three representatives from the Philippines, Vietnam, Thailand and Indonesia. The FDSFL 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. It places equal emphasis on safe driving and eco-driving, as customers in the region are interested in both. In Indonesia alone, more than 3,000 people have participated in FDFSL since it was launched in the market in 2008.

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 China, Taiwan, India and South Africa. In China, 9,500 drivers across more than 73 cities in China attended the training by the end of 2011. In India, more than 3,500 people have been through the training, including special sessions

for the Delhi Traffic Police, Chennai Traffic Police, Rotary Clubs and MCRT, college students, fleet owners and dealers, since 2009. We trained 1,500 drivers across India in 2011 alone. In South Africa, we have trained approximately 550 drivers since the program launched in 2010. FDSFL programs are running in eight markets in the Asia Pacific and Africa region. So far, 50,000 people from across the region have participated in FDSFL, and we expect 12,000 more to take part in 2012.

Climate Change Policy and Partnerships

During 2011, the climate change policy landscape continued to evolve. The U.S. Environmental Protection Agency (EPA) and the U.S. National Highway Traffic Safety Administration (NHTSA) proposed a national approach to vehicle greenhouse gas and fuel economy standards for 2017–25. However, growing budget deficits at national and regional levels globally continue to decrease the emphasis on comprehensive climate policy.

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. To achieve real and lasting results, all global stakeholders must 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. This creates a very complex policy environment, and it 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.

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

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- Ford's Science Based CO_2 Targets

External Websites

- National Highway Traffic Safety Administration
- U.S. Environmental Protection Agency Fuel Economy

U.S. Policy

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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 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 2011, the EPA and NHTSA proposed 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 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. Thoughtful and comprehensive national energy and climate policy that provides a price signal is needed to support the billions of dollars being invested into 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.

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 the single national program for motor vehicle fuel economy and greenhouse gas standards covering the 2017 to 2025 model years. This would be 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 November 2011, EPA and NHTSA jointly issued proposed rules, with harmonized standards GHG and fuel economy standards, for public comment. The auto industry and other interested parties have filed comments on the proposed rules, and the agencies expect to issue final standards in July 2012.

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 carbon dioxide (CO_2) emissions of their vehicles based on nationwide sales, which in turn enables manufacturers to formulate their product plans on a national scale. 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 the incremental benefits of such standards are negligible in comparison to the costs and market disruptions they would impose.

Ford is committed to working constructively with all stakeholders toward the implementation of workable and effective One National Program standards for 2017–2025. Given the long time frame at issue in this rulemaking, the agencies have committed to undertake a “mid-term evaluation” of the standards in the 2018 time frame to make sure that the industry is on track to be able to comply with the 2021–2025 standards. Ford supports the mid-term evaluation provisions as an essential element of this rulemaking. For the longer term, Ford supports a legislative solution requiring One National Program, in order to head off the possibility that various agencies may promulgate and enforce multiple, inconsistent fuel economy/GHG regulations in the future.

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 2014 through 2018 model year 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 vehicles 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. Due to the relatively low average weight of Ford cars registered in the EU this results in stricter targets for Ford compared to the overall industry target of 130 g/km during the 2012–2015 period and 95 g/km in 2020.

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 dramatic economic downturn that 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 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. Any CO_2 regulations should also be in line with meeting the global CO_2 target of 450 ppm.

In some 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 95/100 g/km, 120 g/km and 160 g/km. 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 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) published a draft Stage III fuel consumption Monitoring & Reporting rule and is planning to implement it beginning July 1, 2012. The monitoring period is 2012–2015. During the 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) began development of a Stage IV fuel consumption target in March 2012.

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.

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 by an emissions-control program. A voluntary fuel economy labeling program is also in place. A star ranking for light vehicles was 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, 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.

Other South American countries, such as Argentina and Colombia, are also significantly increasing the use of biofuels. The Chilean government is reviewing a mandatory fuel economy labeling program which will provide information on fuel consumption and CO_2 emissions.

In 2012, 100 percent of Ford's products in South America will be offered as Ethanol Flex Fuel Vehicles. The most recent vehicle line to offer this was the Ford Ranger, which now comes in a 2.5L ethanol flex-fuel version. Some imported vehicle lines including the 2013 Ford Fusion will also come in a flex-fuel version in Brazil. We also provide light- and heavy-duty vehicles that meet biodiesel requirements.

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.

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 infrastructure development. Our flex-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 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, 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 across the globe 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. And Brazil has had a very aggressive domestic ethanol program for years.

But these policies aren't enough. Providing value 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.

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.

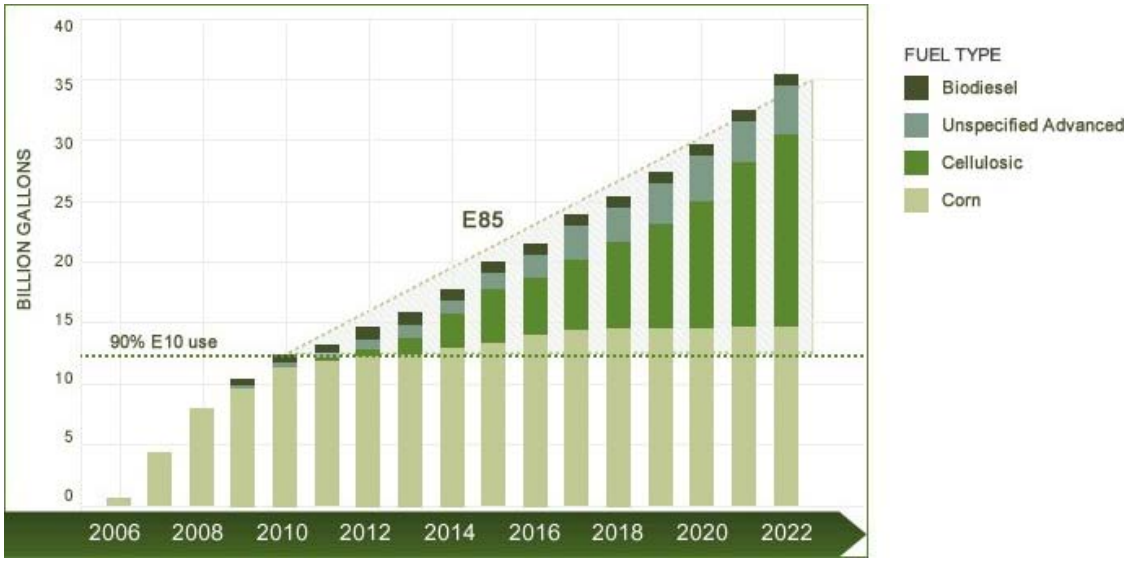
On the one hand, we recognize the potential benefits of expanded use of E15 fuel in helping to build markets for renewable fuels. In addition, ethanol has an octane rating greater than today's gasoline, so when the fuels are mixed, the resulting fuel blend will have higher octane than base gasoline. 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. 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.

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, the EPA has not developed a robust program to prevent the "misfueling" of these vehicles. As a result, 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 policymakers 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.

U.S. Renewable Fuel Standard



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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 thinking 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.
- A member of the Massachusetts Institute of Technology's Joint Program on the Science and Policy of Global Climate Change.
- 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
- MIT Joint Program on the Science and Policy of Global Change
- Growth Energy
- Princeton University's Carbon Mitigation Initiative
- University of California at Davis, Institute of Transportation Studies Sustainable Transportation Energy Pathways Program
- Worldwide 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). In addition to building the next-generation hybrid in Michigan, these incentives enabled Ford to bring advanced lithium-ion battery system design, development and assembly in-house.

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. 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 Emission Trading Scheme, 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 runs from 2008 to 2012 and coincides with the first Kyoto Commitment Period. Additional five-year phases are expected to follow.

Despite Ford facilities' low-to-moderate CO_2 emissions (compared to other industry sectors), the EU Emission Trading Scheme 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 Emission Trading Scheme 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 Emission Trading Scheme 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 Argentina, Australia, Brazil, Canada, China, Mexico, the Philippines and Taiwan. This reporting, which has won several awards, is discussed in the Greening our Operations section.

Related Links

External Websites

- Chicago Climate Exchange
- EU Emissions Trading Scheme

Greening Our Products

As a customer- and product-driven company, our vehicles are the foundation of our business. Our products are also a major focal point of our environmental impacts and 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 plans to improve the fuel efficiency of our products and advance the use of alternative fuels including electricity and bio-fuels.
- 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 include hybrid electric, plug-in hybrid electric and all-electric vehicles.

The fuel efficiency of our products, as well as our product-related greenhouse gas emissions, are reported in the Climate Change section of this report.

Related Links

This Report

- Climate Change
- Electrification: A Closer Look
- Non-CO_2 Tailpipe Emissions
- Sustainable Materials
- Sustainable Technologies and Alternative Fuels Plan

Sustainable Technologies and Alternative Fuels Plan

IN THIS SECTION

Overview of Our Plan

To meet our science-based climate stabilization goal, we are implementing our plan to significantly improve the fuel economy of our global product portfolio and enable 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 traditional gasoline and diesel engines. These actions include implementing advanced engine and powertrain technologies, improving aerodynamics and reducing weight.

Migration to Alternative Fuels and Powertrains

Our plans for migrating to alternative fuels and powertrains include implementing vehicles that run on renewable biofuels, increasing advanced clean diesel technologies, increasing our hybrid vehicle applications and introducing battery electric vehicles and plug-in hybrids. 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 and are currently implementing the mid-term actions.

✓ indicates action completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Significant number of vehicles with EcoBoost engines	EcoBoost engines available in nearly all vehicles	Continue improving efficiency of internal combustion engines	
✓ Electric power steering	✓ Electric power steering – high volume	Volume expansion of hybrid and plug-in hybrid technologies	
✓ Dual clutch and 6 speed transmissions replace 4 & 5 speeds	✓ Six speed transmissions – high volume	Continued leverage of battery electric vehicles	
✓ Flexible-fuel vehicles	Weight reduction of 250–750 lbs.	Continue to develop fuel cells; implementation timing aligned with fuel and infrastructure	
✓ Add hybrid applications	Engine displacement reduction facilitated by weight reductions	Continued weight reduction through use of advanced materials	
✓ Increased unibody applications	Additional areodynamics improvements	Advanced biofuels become viable at scale	
✓ Introduction of additional small vehicles	Increased application of stop/start	Clean electricity enables increased volumes of plug-in hybrids and battery electric vehicles	
✓ Battery management systems	Increased use of hybrids		
✓ Aerodynamics improvements	Introduction of battery electric and plug-in hybrid vehicles		
✓ Stop/start systems (micro hybrids)	Vehicle capability to fully leverage available renewable fuels; 2nd generation biofuels introduce at low volumes		
✓ CNG/LPG prep engines available in select markets	Diesel use as market demands		

- CNG/LPG available in limited markets

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 are introducing 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 17 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. Ford’s flexible-fuel vehicles, which are provided at little or no additional cost, allow consumers to choose fuels based on availability and price.

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 or 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

Related Links

This Report

- Electrification: A Closer Look
- Renewable Fuels Policy

makes sense.

As noted above, we are also developing a range of electrification technologies, including all-electric, hybrid electric and plug-in hybrid electric vehicles. 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 sub-systems.

For more information about each of our fuel efficiency technologies please click on the icons in the graphic above.

EcoBoost®

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Significant number of vehicles with EcoBoost engines	● EcoBoost engines available in nearly all vehicle nameplates	● Increase percentage of internal-combustion engines dependent on renewable fuels	

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 without sacrificing vehicle performance. EcoBoost engines help to improve vehicle fuel economy 10 to 20 percent and reduce CO_2 emissions up to 15 percent compared to larger-displacement engines.

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.

We have introduced four EcoBoost engine displacements with multiple derivatives for specific vehicles and markets.

- 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. Thanks largely to EcoBoost technology, the V6 Ford Taurus SHO and Lincoln MKT deliver unsurpassed fuel economy in their respective segments. We also offer the 3.5L EcoBoost on the F-150 beginning with the 2011 model, making it the most fuel-efficient pickup truck in its class, with a rating from the U.S. Environmental Protection Agency of 16 mpg city and 22 mpg highway.1 The new F-150 also has best-in-class torque, payload and towing capacity.
- 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 engine is currently available on the 2012 Ford Edge, the all-new 2012 Ford Explorer and the 2012 Ford Focus. The Edge and Explorer with the 2.0L I-4 EcoBoost deliver best-in-class fuel economy, with the performance feel of a traditional V6. The new Explorer offers vehicle fuel economy that is 20 percent better than the previous model.
  - We also introduced this engine on the first high-performance vehicle with an EcoBoost – the Ford Focus ST, a special high-performance version of the Focus.
  - In 2012, this engine will be introduced on the all-new 2013 Escape and the 2013 Fusion.
  - In Europe, we introduced the Ford S-MAX, Mondeo and Galaxy with a 2.0L EcoBoost option.
  - In China, we launched the 2.0L EcoBoost on the Ford Mondeo.
  - In Australia, we introduced the 2.0L EcoBoost on the Mondeo in 2011 and will introduce it on the Falcon in 2012.
- 1.6L I-4 EcoBoost:
  - The 1.6L I-4 EcoBoost engine debuted in Europe on the 2011 Ford C-MAX and is also available on the all-new Ford Focus.
  - In the U.S., this engine's first application is the 2013 Ford Escape, which has segment-leading fuel economy among small SUVs and gets 5 mpg better than the outgoing Escape. The 1.6L EcoBoost will also be an option on the all-new 2013 Fusion, which will achieve best-in-class, four-cylinder fuel efficiency of 37 mpg on the highway. We also plan to offer the 1.6L I-4 EcoBoost on the 2013 Ford C-MAX when it is launched in the U.S.
- 1.0L I-3 EcoBoost:
  - We introduced a 1.0L three-cylinder EcoBoost in Europe on the European Ford Focus, which will produce approximately 125 horsepower while delivering ultra-low CO_2 emissions performance for a gasoline engine of 114 g/km – a level unmatched by Focus competitors. An approximately 100 horsepower version of the same engine will deliver best-in-class gasoline CO_2 emissions of 109 g/km. This engine delivers the power of a normally aspirated 1.6L I-4 with better fuel economy.
  - In India, we introduced the 1.0L three-cylinder EcoBoost on the all-new Ford EcoSport, which has power and performance that will rival a normally aspirated 1.6L gasoline engine while emitting less than 140 g/km of CO_2.
  - This engine will also be available in vehicles in North America, 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. At the end of 2011, Ford had built nearly 180,000 EcoBoost-powered vehicles in North America. In 2012 we will offer 11 EcoBoost-equipped vehicles in the U.S., up from seven in 2011, tripling the production capacity of EcoBoost-equipped Ford vehicles. By 2013, we plan to offer EcoBoost engines on 85 to 90 percent of our North American and European nameplates and continue to migrate them to our other regions.

EcoBoost has thus far proven to be popular with customers. The Ford F-150 with the 3.5L EcoBoost engine accounts for more than 40 percent of total F-150 sales, making it the top-selling, full-sized V6 pickup truck on the market. In addition, the F-150 with the EcoBoost engine has received the same high quality ratings as the F-150's popular 5.0L V8 engine, according to data from GQRS, a quarterly survey conducted for Ford by the RDA Group. EcoBoost is also influencing many consumers to consider and buy our vehicles, increasing our "conquest rate" – i.e., the number of customers who are switching from other manufacturers to buy Ford vehicles. More than half of all Taurus SHO buyers are new to the Ford brand, and more than 62 percent of Flex with EcoBoost buyers had not previously considered a Ford product. EcoBoost is proving especially attractive to 35- to 55-year-old males, an important demographic that has been less likely to purchase Ford vehicles in the past.

In addition to these commercial successes, the EcoBoost engine has received multiple awards, including the Breakthrough Award from *Popular Mechanics* and a "10 Best Engines" award from

Ward's.

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.

1. The F-150's fuel efficiency is compared to other high-volume pickup trucks, not including low-volume special fuel-economy models.

Advanced transmissions

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Dual-clutch and six-speed transmissions begin replacing four- and five-speeds	● Full implementation of six-speed transmissions		

We have introduced six-speed transmissions to replace less-efficient four- and five-speed transmissions in a majority of our vehicles, improving fuel economy by up to 9 percent depending on the application. These six-speed gearboxes also provide better acceleration, smoother shifting and a quieter driving experience. By the end of 2012, 98 percent of Ford's North American transmissions will be advanced six-speed gearboxes.

In the near term 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. In the longer term we will be researching advanced transmission concepts to support further efficiency improvements, engine downsizing and electrification.

Electric Power-Assisted Steering (EPAS)

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Electric power steering	● Full implementation of electric power steering		

We are phasing in electric power-assisted steering technology, which 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. In addition, EPAS supports other fuel-saving activities we plan to introduce. For example, "automatic start/stop" technology can be introduced without degrading steering assist to the driver. (For details on this technology, see Automatic Start/Stop.)

We already offer EPAS in the Ford Explorer, F-150, Mustang, Fusion, Flex, Taurus and Escape and the Lincoln MKS, MKT and the MKZ Hybrid in North America; the new Ford C-MAX and Focus in North America and Europe; and the Ford Fiesta and Ka in Europe. By the end of 2012 we will introduce EPAS into the new Ford Edge in North America, the Ford Kuga in Europe and China and a sport vehicle based on the Ford Focus. EPAS will also be used in all of our new electrified vehicles. In addition, the all-new Ford Fusion will use a second-generation EPAS system on all variants, including the gas, hybrid and plug-in hybrid versions. Ultimately, we will introduce EPAS into all of our passenger cars and light-duty vehicles.

Automatic Start/Stop

✔ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✔ Start/stop systems (micro hybrids)	• Increased application of start/stop systems		

We have developed a “start/stop” technology that shuts down the engine when the vehicle is stopped and automatically restarts it before the accelerator pedal is pressed to resume driving. This technology maintains the same vehicle functionality as that offered in a conventional vehicle, but it improves city driving fuel economy by up to 6 percent, with potentially higher gains possible for specific vehicle size and usage applications. The technology can also reduce tailpipe emissions to zero while the vehicle is stationary, for example when waiting at a stoplight.

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.

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 are planning to introduce the technology into non-hybrid automatic transmission vehicles in 2012. In Europe, automatic 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 start/stop technology.

Weight Reductions

✔ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✔ Increased unibody applications	• Weight reductions of 250–750 lbs	• Continue weight reductions using advanced materials	

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. Unibody-based crossover vehicles provide many of the benefits of truck-based SUVs, such as roominess, all-wheel drive and higher stance, with significantly reduced total vehicle weight. The all-new 2011 Ford Explorer uses a lightweight unibody design, as do the current Ford Edge and Lincoln MKX crossovers.

EcoBoost® engine technology allows us to use a smaller, lighter-weight engine system while delivering more power and better fuel economy. Similarly, the dual-clutch PowerShift transmission available on the Ford Fiesta and Focus weighs less than the conventional automatic transmission it replaced.

The lighter-weight materials we are using include advanced high-strength steel, aluminum, magnesium, natural fibers and nano-based materials. 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. The following are examples of our use of lighter-weight materials:

- 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 CO_2 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 2012 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 2011 Mustang, for example, has an aluminum engine. Combined with other fuel-efficiency improvements, this lighter-weight engine delivers class-leading fuel economy at 19 mpg city/30 mpg highway with a six-speed automatic transmission – a 25 percent improvement over the 2010 model.
- 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 nanoscale, 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 (USCAR) 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.

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 rematching not only improves fuel economy, but helps maintain overall performance (compared to a heavier vehicle with a larger engine).

Battery Management Systems (BMS)

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Introduction of battery management systems			

Electrical systems are another area in which we are making progress. By reducing vehicle electrical loads and increasing the efficiency of the vehicle's electrical power generation systems, we can improve fuel efficiency. Our battery management systems, 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. 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 the 2013 Ford Taurus, Flex, Escape and Fusion and on the Lincoln MKZ, MKX and MKT. We have also introduced more-efficient alternators, which improve fuel economy.

Aggressive Deceleration Fuel Shut-Off (ADFSO)

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Begin implementing ADFSO	● ADFSO at high volume		

We are deploying Aggressive Deceleration Fuel Shut-Off technology to improve fuel efficiency. 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 new system builds on the Deceleration Fuel Shut-Off technology available in our existing vehicles by extending the fuel shut-off feature to lower speeds and more types of common driving conditions, without compromising driving performance or emission.

This improved fuel shut-off 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.

Starting in 2008 this technology 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. For example, the 2011 Ford Edge, Ford Explorer and Lincoln MKX use ADFSO. 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

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Aerodynamic improvements	● Additional aerodynamic		

	improvements	

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 maximize 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 further improve the real-world benefits of aerodynamic improvements.

In 2011, we introduced an Active Grille Shutter technology that reduces aerodynamic drag by up to 6 percent, thereby increasing fuel economy and reducing CO_2 emissions. When fully closed, the reduction in drag means that the Active Grille Shutter can reduce CO_2 emissions by 2 percent. This technology was implemented 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 making significant improvements in aerodynamics on vehicles introduced for the 2011 to 2013 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. The 2013 Fusion is also expected to be best in its class for fuel economy. (For more information on our fuel economy leaders please see Climate Change Progress and Performance.)
- The 2013 Ford Escape is nearly 10 percent more aerodynamic than the outgoing model.
- We have significantly reduced the drag coefficient on the all-new 2012 Focus four-door to 0.297 from the current model's 0.320. Optimized aerodynamics also help to reduce wind noise in the Focus.
- Aerodynamic improvements helped the 2011 Ford Fiesta SFE achieve a U.S. Environmental Protection Agency-rated 40 mpg.
- We continue to leverage our global aerodynamic 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.

Smaller Vehicles

✓ indicates stage completed

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue leverage of hybrid technologies and deployment of alternative energy sources	
✓ Introduction of additional small vehicles	● Engine displacement reductions facilitated by weight savings		

Smaller vehicles provide consumers with another way to get better fuel economy. 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. At the 2011 North American Auto Show we showcased 10 new vehicles based on this C-platform, most of which will be available in the U.S. in the next few years. In 2011 we are introducing 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. For example, the Focus will be equipped with a responsive, fuel-efficient, 2.0L I-4 engine with twin independent variable camshaft timing and direct injection, plus a dual-clutch PowerShift transmission. We also now offer a battery electric version called the Focus Electric. In addition, we are introducing the Ford C-MAX in the U.S., a multi-activity vehicle

based on our C-platform. This vehicle will ultimately include a hybrid and plug-in hybrid version.

- 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.

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Migration to Alternative Fuels and Powertrains

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At Ford, our plans for migrating to alternative fuels and powertrains include implementing vehicles that run on renewable biofuels, increasing the use of advanced clean diesel technologies, increasing our hybrid vehicle applications and introducing battery electric vehicles and plug-in hybrids. We are also working to advance hydrogen-powered vehicle technologies.

For more information on our plans regarding each of these alternative fuels and powertrain technologies, please click on the Ford vehicles above.

Advanced Clean Diesel

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Advanced Clean Diesel

Ford Fiesta ECOnetic

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 diesel engine on the 2011 F-Series Super Duty® truck that has 20 percent better fuel economy than the outgoing model.

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue deploying advanced powertrains and alternative fuels and energy sources	

Advanced Clean Diesel

Modern diesels offer some significant advantages over traditional gasoline engines. They consume 30 to 40 percent less fuel, 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.

In Europe, 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 in Europe. 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. This vehicle is powered by a 1.6L Duratorq TDCi that 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.

In the North American medium-duty truck market, diesel engines account for more than 50 percent of sales. In response to this demand, Ford introduced an all-new 2011 F-Series Super Duty® truck with a state-of-the-art diesel engine, new six-speed transmission and urea/selective catalytic

reduction after-treatment system. The 6.7L Power Stroke® V8 diesel is cleaner and has 20 percent better fuel economy, 14 percent more power and 23 percent more torque relative to the outgoing model. Ford has also announced plans for a diesel engine offering in the Transit van for North America.

These new diesel engines also meet the U.S. Environmental Protection Agency's and the California Air Resources Board's strict 2010 heavy-duty truck emission regulations, which require 80 percent lower NOx emissions than the 2007 regulations.

The Ford Super Duty uses a range of advanced technologies to meet the new regulations. For example, its 6.7L Power Stroke engine employs 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. In addition, the after-treatment system has three key parts, including:

- a diesel oxidation catalyst that converts and oxidizes hydrocarbons into water and carbon dioxide;
- a 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.

Ford was an early industry leader in developing diesel engine after-treatment systems. We have been granted more than 100 patents for these advancements.

The 6.7L Power Stroke 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.

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. Biodiesel is a renewable fuel made from soybean oil and other fats. We went through extensive testing to ensure that this new truck would meet performance and durability requirements when fueled with B20, including running durability cycles on multiple blends of diesel and biodiesel fuels to ensure the robustness of the system. 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 Fusion

Hybrid electric vehicles are powered by a traditional internal combustion engine and battery power to deliver improved fuel economy. By the end of 2012, Ford will be North America's largest maker of hybrid transmissions.

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue deploying advanced powertrains and alternative fuels and energy sources	

Hybrid Electric Vehicles (HEVs)

Ford introduced its first hybrid in 2004, the Ford Escape Hybrid, which was also the world's first hybrid SUV. We followed up with the Mercury Mariner Hybrid in 2005. In early 2009 we further expanded our hybrid vehicle lineup by introducing the Ford Fusion and Mercury Milan Hybrids, which offered class-leading fuel efficiency. In 2010, we launched the Lincoln MKZ Hybrid, which was the most fuel-efficient luxury sedan in America at the time it launched. Unique among hybrid vehicles, it is available for the same manufacturer suggested retail price (MSRP) as the gas model MKZ.

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. We are currently increasing our hybrid volume, and preparing for hybrid capability across our highest-volume global product platforms.

The newly redesigned Ford Fusion, launching in 2012, 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. Each model is expected to have unsurpassed fuel economy in its respective segment. The all-new Fusion was named Best in Show at the 2012 North American International Auto Show, a rare honor for a mid-sized sedan. The new Fusion Hybrid will feature 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 is anticipated to deliver best-in-class fuel economy of at least 47 mpg in city driving and 44 mpg on the highway. The Fusion Hybrid continues to innovate and evolve with all-new lithium-ion batteries

that save weight and generate more power than the previous nickel-metal-hydride batteries, while raising the vehicle's maximum speed under electric-only power from 47 mph to 62 mph.

In 2012, Ford will also introduce a hybrid version of the Ford C-MAX multi-activity vehicle in the U.S. This will be one of three electrified vehicle options based on our C-platform. The others are the Focus Electric (a battery electric vehicle, or BEV) and the C-MAX Energi (a plug-in hybrid, or PHEV).

The C-MAX Hybrid will use the Company's powersplit hybrid architecture, with improved fuel efficiency and a lighter, smaller lithium-ion battery system. Some key advancements of this technology include:

- 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

With the launch of the C-MAX Hybrid and C-Max Energi, Ford becomes North America's largest maker of hybrid transmissions.

Our next-generation hybrids will also have a suite of driver information systems to help drivers maximize fuel efficiency. This includes an updated version of the SmartGauge™ with EcoGuide instrument cluster that coaches hybrid drivers to maximize fuel efficiency, along with an enhanced version of the MyFord Touch™ driver interface system that can be configured to show different levels of information, including fuel and battery power levels, as well as average and instant miles per gallon.

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Battery Electric Vehicles (BEVs)

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Battery Electric Vehicles (BEVs)

Ford Focus Electric

Battery electric vehicles use no gasoline; they are powered by a high-voltage electric motor and battery pack. In 2011, Ford introduced the Focus Electric, with a U.S. Environmental Protection Agency (EPA) combined fuel economy rating of 105 miles per gallon equivalent (MPGe), driving range of 76 miles on a charge and an approximately four-hour recharge time, which is half the charge time of our competitors' BEVs with comparably sized batteries.

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue deploying advanced powertrains and alternative fuels and energy sources	

Battery Electric Vehicles (BEVs)

Battery electric vehicles do not have an internal combustion engine and do not use any on-board 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.

Ford has announced an expanded, comprehensive electric vehicle strategy aligned with growing public interest in advanced technologies that reduce the use of gasoline and diesel. Our approach to electrification tackles commercial issues such as battery cost, standards development and infrastructure deployment. Strategic partnerships are an important part of this new approach. We are working with partners to develop appropriate battery cells, collaborate on government policy and define the infrastructure needed to speed the commercialization and acceptance of electric vehicles. To read more about our approach, please see Electrification: A Closer Look.

At the end of 2011 we launched an all-electric passenger sedan, the Ford Focus Electric, 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 will initially introduce the Focus Electric in 19 U.S. metropolitan areas. We will be ready to expand to new markets and ramp up to higher volumes as the infrastructure develops and customer demand grows.

The Focus Electric, as well as Ford's other forthcoming electrified vehicles (including HEVs and PHEVs), will use lithium-ion batteries. These batteries provide better performance, require less space and weigh less than the nickel-metal-hydride batteries used in current 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 is expected to take three to four hours at home with the 240-volt charge station – half the charging time required by competitors' BEVs with comparably sized batteries.

The Focus Electric will include an enhanced version of MyFord Touch® – Ford's new driver interface technology – which will give drivers information to help maximize driving range, plan the most eco-friendly route and manage the battery recharge process.

Drivers will also be able to manage their Focus Electric remotely using the Ford-developed MyFord Mobile app. This system enables customers to get instant vehicle status information, perform key functions remotely, 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 a smartphone or secure Ford website. For more information on the Focus Electric driver information systems and mobile controls, please see Living the Electric Lifestyle.

The Focus Electric will also work with Value Charging (powered by Microsoft®), a home energy management system that works exclusively with Ford electric vehicles to help customers reduce their electricity costs by taking advantage of off-peak or other reduced rates from their utility, without a complicated set-up process. For more information on this technology, please see Electrification: A Closer Look.

Ford will launch the Ford Focus Electric in Europe in late 2012.

Ford is actively working to help develop standards to ensure that plug-in and charge stations work for all BEVs and to ensure that the technology is reliable and durable for customers. In North America, the Society of Automotive Engineers, with Ford's participation, successfully aligned all major original equipment manufacturers on 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.

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Plug-in Hybrid Electric Vehicles (PHEVs)

Ford Escape

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 will introduce its first commercially available PHEV, the C-MAX Energi, in the U.S. in 2012.

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue deploying advanced powertrains and alternative fuels and energy sources	

Plug-in Hybrid Electric Vehicles (PHEVs)

PHEVs are similar to HEVs in that they are equipped with both an electric battery and a gas-powered engine. Unlike today's hybrids, 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, plug-in hybrids 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. However, the vehicle'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 because they allow drivers to travel on grid-based electricity stored in batteries instead of more costly gasoline.

The long-term success of PHEVs in the real world depends on cooperation between automakers, utilities, the government and drivers. Therefore, Ford is working with a number of partners – including technology partners, the utility industry and the U.S. Department of Energy (DOE) – to help support a smooth transition to electrified vehicles. In 2007, Ford began a collaborative project with Southern California Edison to advance the commercialization of PHEVs. Ford expanded this program in 2008 to the DOE and other utility partners to identify a sustainable pathway toward accelerated, successful mass production of these vehicles. The project now includes 11 additional partners: the Electric Power Research Institute, the New York State Energy Research and Development Authority, the New York Power Authority, American Electric Power, ConEdison of New York, DTE Energy, National Grid, Progress Energy, Southern Company-Alabama Power, Pepco Holdings and Hydro Quebec.

Ford was awarded $10 million by the DOE to support this program, which includes a three-year demonstration project with a vehicle fleet deployed by the DOE and the energy partners to collect real-world battery performance data and evaluate PHEV and grid performance in different geographical locations. The project aims to help the companies understand critical implementation issues, including the vehicle-utility interface, the impact of plug-ins on utility operations and emissions, and the value to users, utility companies and vehicle manufacturers.

In 2010, Ford completed the deployment of 21 vehicles with the DOE and its utility partners, and Ford's engineering teams continued to collect in-field vehicle performance data. To date, the fleet has successfully logged more than 650,000 miles. The collected data is being analyzed by engineers in Ford's Sustainable Mobility Technology group in conjunction with the DOE, Idaho National Laboratories and Argonne National Laboratories. The results of these analyses continue to drive future PHEV product offerings from Ford as well as aid utility companies in their expectations for when plug-in vehicles hit the market.

For more information on some of the key learnings generated by this collaboration thus far, please see Electrification: A Closer Look.

The PHEV research vehicles used in this project have two distinct operational modes: charge depleting and charge sustaining. In charge-depleting mode, which is used when the high-voltage battery is above a predetermined state of charge, the vehicle draws the majority of the power required for operation from the battery. This usually translates into full-electric operation when the vehicle is traveling less than roughly 40 mph, depending on driver behavior such as acceleration and heating and air conditioning usage. When the power demand of the driver exceeds the power output capacity of the high-voltage battery, the gasoline engine automatically starts up to provide the difference. However, even when the engine is used to supplement power while in charge-depleting mode, the battery still provides the vast majority of the power required to propel the vehicle.

In charge-sustaining mode, which is used when the high-voltage battery is below a predetermined state of charge, the vehicle relies mainly on the engine to meet the driver's power demand. 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.

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
- Increased use of electricity from renewable energy sources (e.g., wind and solar) for vehicle recharging
- Potential consumer cost savings on energy/fuel costs
- The extra benefit of being able to charge your 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

In 2012 in the U.S., we will introduce the Ford C-MAX Energi, our first production PHEV, which will be a variant of the Ford C-MAX multi-activity vehicle. The C-MAX Energi is expected to deliver a better fuel-economy equivalent in electric mode than the Toyota Prius plug-in hybrid, plus a 500-mile overall driving range – more than the Chevrolet Volt.

In January 2012 we announced plans to introduce the Ford Fusion Energi, a plug-in hybrid version of our all-new Fusion, which will be available in the U.S. It is expected to deliver 100-plus MPGe. The Fusion Energi is planned to be available in showrooms in North America in early 2013.

Like Ford's HEVs, the C-MAX Energi and Fusion Energi will include the SmartGauge® with EcoGuide instrument cluster, which coaches drivers to maximize fuel efficiency, and an enhanced version of the MyFord Touch® driver interface that can be configured to show different levels of information, including fuel and battery power levels and average and instantaneous miles per gallon.

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 5.5 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.

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue deploying advanced powertrains and alternative fuels and energy sources	

Renewable Biofueled Vehicles

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 that 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 rating and automakers to provide higher compression ratio – and therefore more-efficient – engines.

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 the U.S., our 2012 F-Series Super Duty® trucks with a 6.7L diesel engine are compatible with B20. In addition, the gasoline version of these vehicles will be flex-fuel 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 5.5 million FFVs globally. Ford FFV models are available in many European markets.

E15 in the United States

Over the last year, 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 unless concerns with the use of E15 in the legacy fleet are addressed.

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 on-board 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 review of the E15 waiver in the D.C. Circuit Court of Appeals. 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.

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 biofuels’ energy density, 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 later 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 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.

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.[3] 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.

Using low-level ethanol blends such as E10 (which is the situation today), 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. For any of these approaches to be successful, the new fuels will have to provide enough value to the consumer to attract them to buy ethanol-blend 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 2,300 (or less than 2 percent) offer E85. This trails the availability of E85 vehicles in the marketplace. Approximately 4 percent of the U.S. light-duty vehicle fleet are FFVs, a figure that is increasing because FFVs now account for more than 15

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.[4] 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 recover some of the lost energy content. In 2012 Ford researchers published an assessment that quantifies the potential benefits of high-octane ethanol gasoline blends.[5] Biodiesel has approximately the same energy density as conventional petroleum-based diesel.

Lifecycle Greenhouse Gas Emissions

The plants used to produce biofuel feedstocks capture CO_2 during their growth, and this is released when the biofuel is burned. 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.[6]

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 2010 that figure was 37 percent. Ethanol production removes only the starch from the corn kernel – the remaining portion is a highly valued feed product (called distillers grains) and a good source of protein and energy for livestock and poultry. 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 have modest environmental benefits and are 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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Hydrogen Fuel Cell Vehicles (FCVs)

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Advanced Clean Diesel


HEVs


BEVs


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Renewable Biofueled Vehicles


FCVs

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. Ford began testing a fleet of 30 Focus FCVs in real-world driving conditions with customers around the world in 2005. We are continuing laboratory-based research and developing the technologies necessary to commercialize FCVs.

2007	2011	2020	2030
Begin migration to advanced technology	Full implementation of known technology	Continue deploying advanced powertrains and alternative fuels and energy sources	

Hydrogen Fuel Cell Vehicles (FCVs)

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 on-board 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, hybrid electric vehicles and plug-in hybrids 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.

Technology Demonstration

Ford has been working on fuel cell vehicle development and technology demonstration for more than a decade. We developed the first research prototype FCV in 1999. In 2005, we introduced a technology demonstration fleet of FCVs using the Ford Focus as a base vehicle. The Focus FCV uses a Ballard fuel cell technology, called HyWay1. It is one of the industry's first hybridized fuel cell vehicles, meaning it has a battery system as well as a fuel cell system.

From 2005 to 2009, Ford participated in a technology demonstration program partially funded by the U.S. Department of Energy (DOE), as well as 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 on-board 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.

Research and Development

Given these significant challenges to commercialization, we believe that further investment in demonstrating hydrogen FCVs and integrating current FCV technology into existing vehicles are not high-value investments for Ford. Therefore, Ford has reprioritized its internal resources to concentrate on core fuel cell research that will help increase the commercialization potential of FCVs. For example, we are focusing on materials development and basic scientific research to solve cost and durability challenges.

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, Daimler and Ballard.

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.

On-board 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 on-board 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), which Ford led the automotive industry in developing commercially. 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.

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, 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 began with the 2004 model year. It 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) by at least 1.2 million tons as of 2010.

For the California market, Ford is required to meet the state's stringent Low Emission Vehicle II (LEVII) emissions requirements for light-duty vehicles. Under the LEVII 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.

For the 2011 model year, we offered a PZEV version of the Ford Focus. The hybrid versions of the 2011 Ford Fusion and Lincoln MKZ also met the PZEV requirements. For the 2012 model year, Ford is offering the Focus PZEV and hybrid PZEV versions of the Ford Fusion, Lincoln MKZ and Ford Escape.

Both the EPA and CARB are in the process of developing the next generation of emissions standards (Tier 3 and LEV III, respectively). CARB is also in the process of revising its future Zero Emission Vehicle regulations.

We are working with the agencies through their regulatory processes to help develop rules that are

Related Links

Vehicle Websites

- Ford Escape
- Ford Focus
- Ford Fusion
- Lincoln MKZ

External Websites

- EPA's Green Vehicle Guide

both effective and feasible. In setting tailpipe emission regulations, other vehicle rules – 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. In 2010, Ford introduced the 1.6L and 2.0L GTDI Ecoboost® engines in Europe. In 2012, we expanded our EcoBoost offerings to include a new 3-cylinder 1.0L EcoBoost engine. 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 1.6L 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. This rulemaking 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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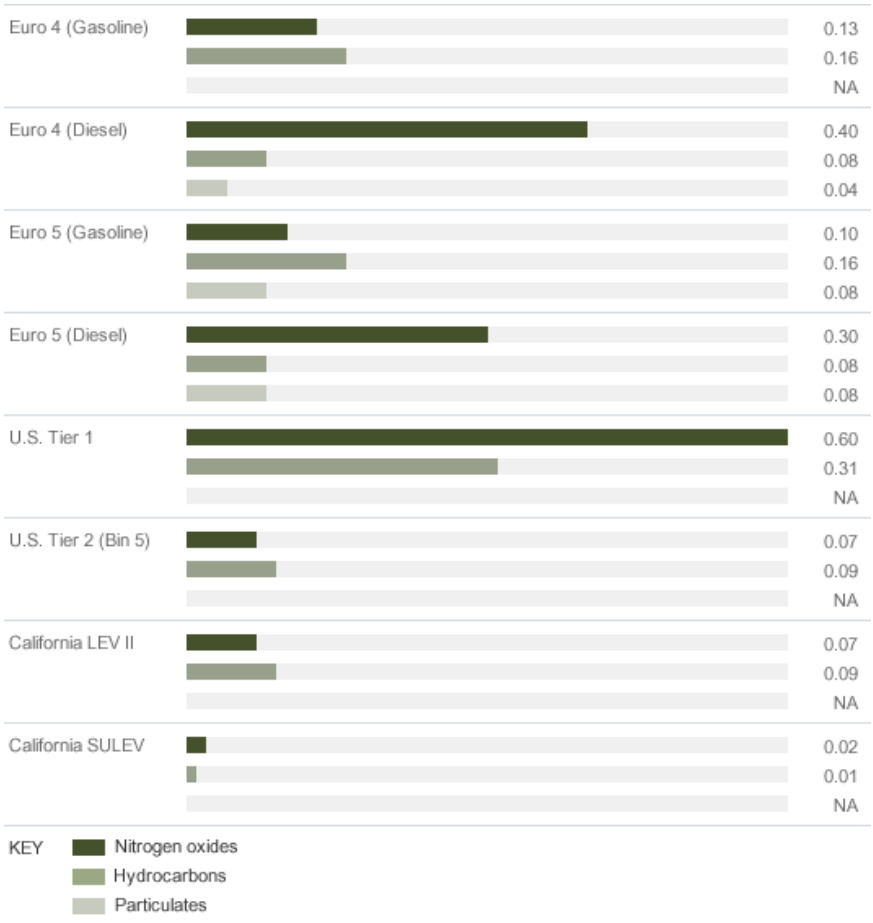
Emissions Regulations in the U.S. and Europe



	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 2012 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. Argentina, Brazil and Chile are leading the adoption of more-stringent standards for light- and heavy-duty vehicles, being phased in between 2011 and 2015.

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 in Chile); particulate filter technology for some diesel products; and selective catalytic reduction systems for heavy diesels in these three countries.

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Sustainable Materials

Materials are an important element of a vehicle's lifecycle sustainability. Choices about materials can influence the safety, fuel economy and performance of the vehicle itself, as well as the ability to recycle or reuse the vehicle's components at the end of its life. Material choices 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, 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 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, Ford has concentrated its efforts on developing new uses for recycled materials in the nonmetallic portions of the vehicle, which are typically composed of virgin materials. While the amount of recycled content in each vehicle varies, we are continuously 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.

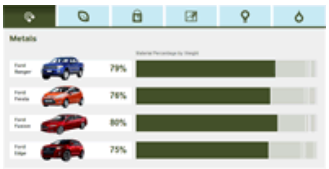
For many years, Ford has had a Voluntary Recycled Content Usage Policy in North America, which sets goals for the use of nonmetallic recycled content for each vehicle and increases those targets year by year and model by model. Under this program, recycled materials are selected for all of our vehicles 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 enable quality and 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 from 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 sustainable materials strategy for the Company. This informal team has developed a set of guiding principles to help us think through materials choices. 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, model by model, 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.
- Recommended recycled and renewable materials will have a known and documented "positive lifecycle" impact.
- Recycled materials will be used 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.

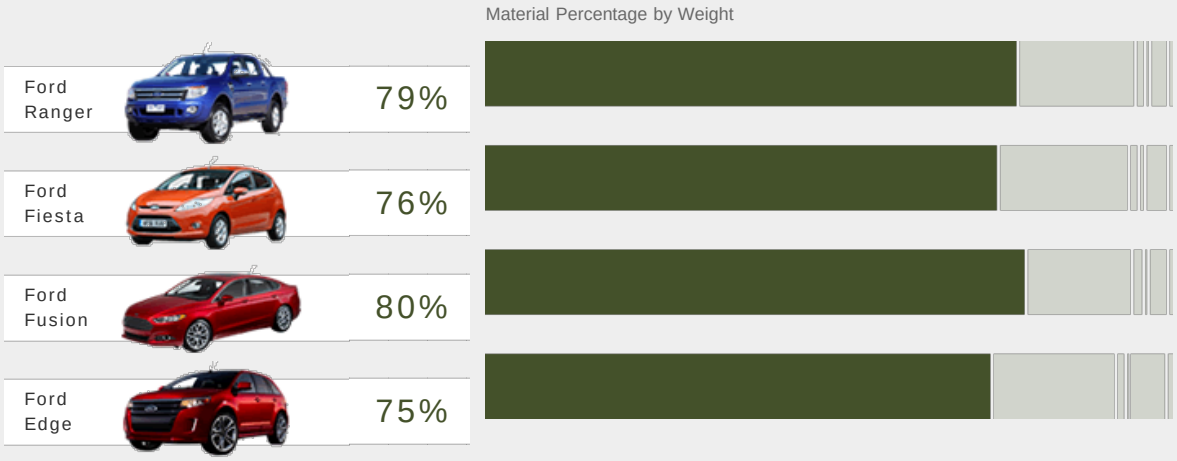
Many commodity purchasing plans already list recycled-content materials as a preferred material option, including those for battery trays, battery shields and wheel arch liners. In addition, we developed a comprehensive resin strategy that requires the use of recycled plastics for underbody and aerodynamic 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 textiles and are working on specifications for renewable materials. These specifications make it easier for vehicle engineers to choose sustainable material options.

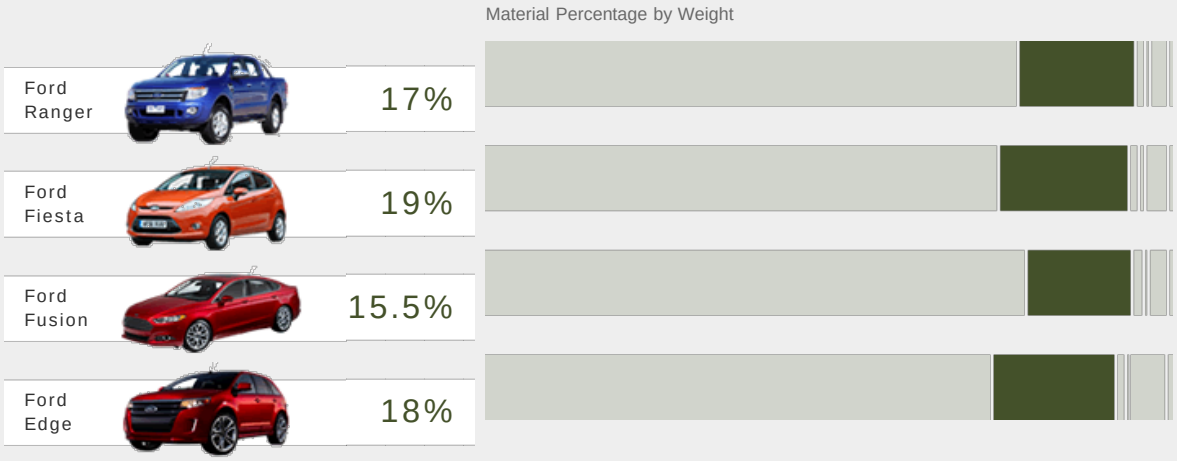
What is in a Vehicle?

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



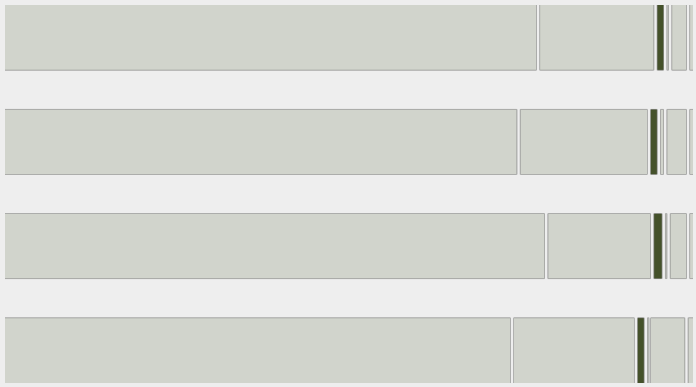
Plastics, Textiles, and Natural Materials



Non-Dimensional Materials

Material Percentage by Weight

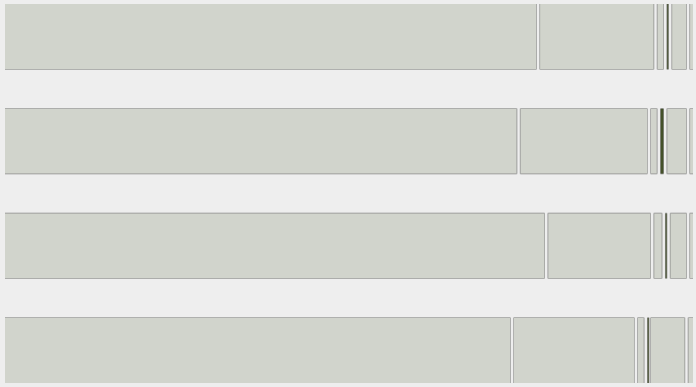
Ford Ranger	1%
Ford Fiesta	1%
Ford Fusion	1.3%
Ford Edge	1%



Electronics

Material Percentage by Weight

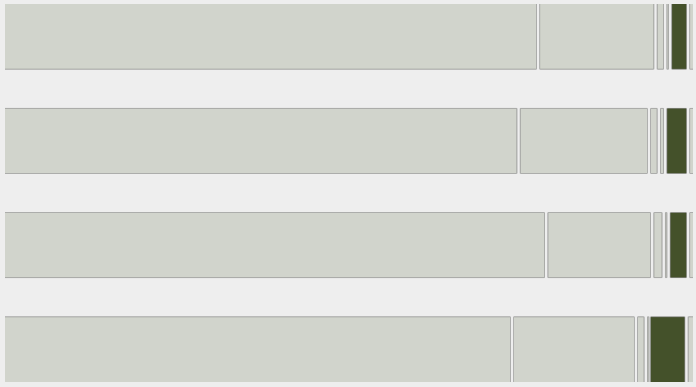
Ford Ranger	0.2%
Ford Fiesta	0.5%
Ford Fusion	0.2%
Ford Edge	0.2%



Ceramics, Glass and Other Compounds

Material Percentage by Weight

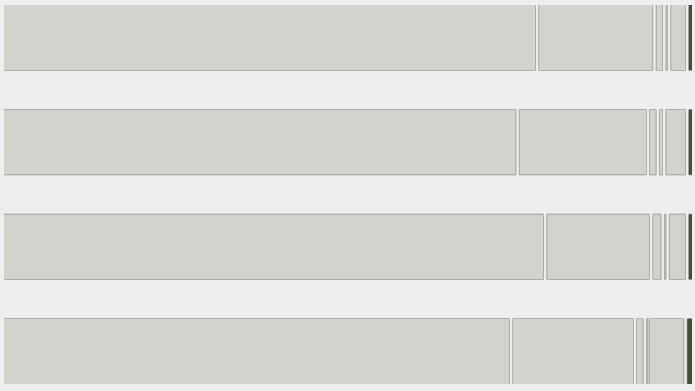
Ford Ranger	2.3%
Ford Fiesta	3%
Ford Fusion	2.5%
Ford Edge	5%



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 – primarily steel and iron. The other metals in a vehicle include aluminum, magnesium, titanium and other lightweight metals. We are working to increase the use of these metals, because they lower the total weight of the vehicle and therefore 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. They are also less financially viable to recycle at the end of a vehicle's life, and therefore much less frequently recycled. This makes it important to get more recycled and renewable materials into this material category. 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

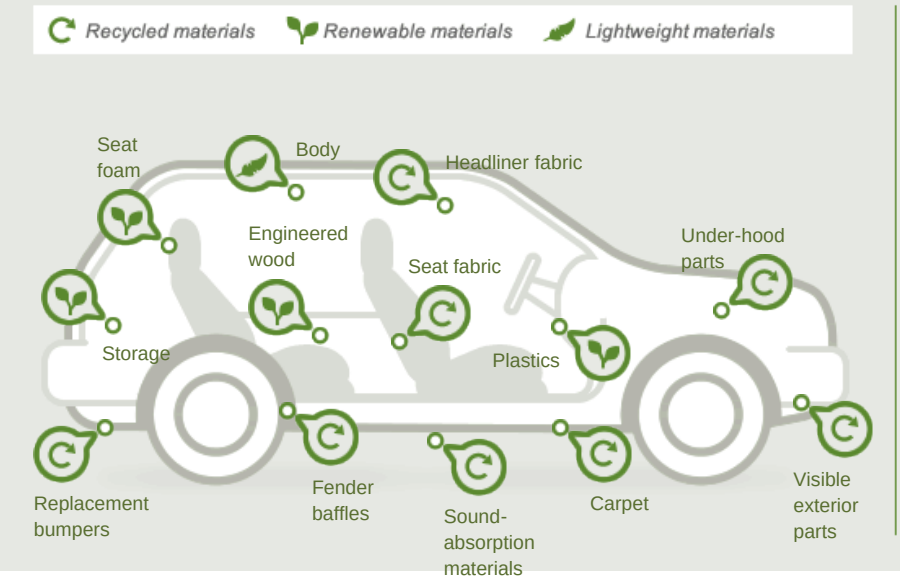
Ford has been working with our suppliers, dealers, dismantlers and industry associations (such as the USCAR Vehicle Recycling Partnership) to develop, share and implement best practices to deal with these categories of materials, which are a small percentage of any given vehicle by weight but are hard 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

ON THIS PAGE



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 on many vehicles including the U.S. and European Ford Focus, the 2011 Explorer and the 2013 Escape.

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 and Escape Hybrid contain 25–100 percent recycled content.

Seat foam

Soy foam

Starting in 2011, all vehicles manufactured in North America use seat foam made with soy oil, which reduces 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 weight than traditional steel.

Headliner fabric

In North America, the 2011 Ford Fiesta, Econoline and F-250 use 50–75 percent recycled content in the headliner fabric.

Under-hood parts

Recycled plastics and nylon are used in non-surface parts on many vehicles including fan shrouds, battery trays, heater/air conditioning housing, wheel arch liners, engine fans and covers, and underbody systems.

Visible exterior parts

The 2011 Super Duty® uses recycled-content plastics on a range of parts, including the bumper valences, license place 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

Wheat-straw-reinforced plastics

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.

Engineered wood

The Lincoln Navigator, MKX and MKS use engineered wood from certified, sustainably managed forests, which reduce input materials and waste sent to landfill.

Plastics

Natural-fiber-reinforced compression molded plastics

Multiple European vehicles use 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. In 2009, we implemented a comprehensive recycled resin strategy. As part of that strategy, a wide range of parts on vehicles manufactured in North America are 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. In 2010, we improved this strategy to include fabric rear-wheel liners that are produced from materials derived from 30 to 40 percent recycled content. These parts are 50 percent lighter than plastic wheel liners, and they absorb sound, which will enable improved noise vibration and harshness performance while potentially reducing the need for

Related Links

This Report

- Sustainable Technologies and Alternative Fuels Plan

Vehicle Websites

- Ford Escape
- Ford Explorer
- Ford Focus Electric
- Ford Fusion

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.

This recycled materials resin strategy saves money and reduces landfill waste. We estimate that Ford saves approximately $8 million per year and diverts approximately 50 million pounds of plastics from landfills each year (depending on vehicle production volume) by using these recycled materials.

We are also using post-consumer recycled nylon in many under-hood 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 2009, more than 23,000 bumpers (equating to 70 metric tons of plastic) across the U.K. Ford dealer network were diverted from landfills through this program.

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.

In North America since the 2009 model year, the seat fabrics in most of our new or redesigned 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.

On the Focus Electric, Ford will be the first automaker to use REPREVE – a hybrid fiber made from recycled plastic water bottles and post-industrial waste – for seating fabric. This means that each vehicle will have seat fabric made from approximately 22 plastic, 16-ounce water bottles. Ford is partnering with the yarn manufacturer, Unifi, to collect bottles at the North American International Autoshow in Detroit, the Consumer Electronics Show in Las Vegas, and other events throughout the year for use in the Focus Electric seat fabric.

The following table highlights some of the recycled-content interior materials in our recent vehicles:

Interior Recycled Materials Achievements

Vehicle	Material	Partner	Benefits
2013 Ford Escape	Carpet: 100 percent recycled content from post-consumer and post-industrial recycled yarns	Reiter	• Will use 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
	Seat fabric insert: 37 percent recycled content from post-consumer and post-industrial recycled yarns		• Uses closed-loop system for recycling manufacturing 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	Unifi Sage	• Will use approximately 22 recycled plastic bottles in each vehicle

	post-industrial recycled yarns	Interiors Automotive	• 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
2011–12 Ford Explorer	Seat fabric: 25–30 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 Ford Econoline	Headliner fabric: 50–75 percent post-consumer recycled content	Freudenberg	• Reduces consumer waste • Reduces depletion of natural resources
2011 Ford F-250	Headliner fabric: 50–75 percent post-consumer recycled content	Freudenberg	• Reduces consumer waste • Reduces depletion of natural resources
	Seat fabrics: 25 percent post-industrial recycled yarns	Sage Automotive Interiors, Guilford, Aunde	• Reduces waste • Reduces depletion of natural resources
2010–12 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
2010–12 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 Ford F-150 XL, XLT and FX4	Seat fabrics: 25 percent post-industrial recycled 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
2010–11 Ford Fusion and Mercury Milan Hybrids	Seat fabric: 85 percent post-industrial recycled yarns and 15 percent solution-dyed yarns	Sage Automotive Interiors	• Reduces energy use • Reduces CO_2 emissions • Reduces the use of dyes and chemicals • Reduces water use • Decreases the use of foreign oil

2008–2011 Ford Escape Hybrid	Seat fabrics: 100 percent post-industrial recycled yarns	Aunde, Interface	■ Reduces waste, water use and CO_2 emissions

We have also expanded the use of recycled materials in several visible exterior applications. For example, the 2011 Ford Super Duty® will use 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 is also using post-industrial and post-consumer recycled plastic for its fascia lower valence. This plastic was a finalist for the 2009 Society of Plastics Engineers Innovation awards.

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.

▲ back to top

Renewable Materials

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.

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_2 emissions, decreases dependency on 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.

Many technical difficulties had to be overcome to produce soy-based foams that met all of our stringent durability and performance specifications for seating. 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 to 23 vehicle programs. 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 5 million vehicles on the road, which reduces petroleum oil usage by more than 1 million pounds (or 31,500 barrels) 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 more than 1,500 typical American households. In addition, soy foam has up to 24 percent renewable content, and formulations can reduce volatile organic compound (VOC) emissions by 67 percent.

Ford and our supplier partner Recycled Polymeric Materials (RPM) launched new "green" seals and gaskets that incorporate both 17 percent bio-renewable soybean oils and 25 percent post-consumer, recycled tires. This material is currently used in 11 of our vehicle lines, including the Ford Escape, F-150, Focus, Mustang and Taurus. The seals also offer a weight savings, which improves fuel economy. In total, we have removed more than 1,675 tons of weight from our vehicles by using these new seals and gaskets. The use of post-consumer tires in these gaskets and seals also diverts 250,000 used tires from landfills.

Ford 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 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 previously used materials, and reduces production time by more than 40 percent.

Ford Research has also begun work on new technologies to make urethane foams even greener. One of these innovative technologies may enable us to use old foam scrap (including soy foams) as a feedstock for new foam. Polyurethane makes up 5 percent of total solid municipal waste (about 1.3 million tons) in the U.S., and almost 24 percent of that is attributed to the automotive industry. The landfilling of foam at the end of an automobile's useful life is a significant environmental issue, and one that we continue to work to address. Our initial results formulating both rigid and flexible recycled foams in the laboratory have shown promise. We are excited about the possibility of recycling foam because it is prevalent in landfills and because the current recycling of foam is limited to low-requirement applications such as carpet backing.

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. In Europe we use Lignotech, a compression-molded polypropylene and wood material in the door panels of the Ford Focus and Fiesta. We also 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 is anticipated to offset 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.

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 2010 Ford Flex. 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. Furthermore, the use of wheat-straw-reinforced plastics in the 2010 Flex storage bins reduced our petroleum usage by some 20,000 pounds and 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.

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 volatile organic compounds. 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. Ford is also exploring other wood veneer alternatives, such as veneers from managed sustainable forests, to reduce our environmental impact footprint.

To maintain our sustainable materials leadership in the future, Ford researchers are developing and formulating new materials and applications for other renewable materials, such as corn-based, compostable and natural-fiber-filled plastics. These materials will help to reduce the resource burden and waste generated and will help to reduce the weight of vehicles, thereby improving fuel economy.

Ford Research has initiated a project to develop sustainable resources for rubber materials, in conjunction with the Ohio State University. 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.

In 2009, Ford joined a three-year research project investigating a new wood/plastic compound known as "liquid wood." Early findings show excellent recycling potential, as the material can be reprocessed up to five times and has an overall near-neutral CO_2 balance.

Finally, Ford researchers have made considerable inroads 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. We continue to assess bio-yarns for use in making plant-based fabrics. 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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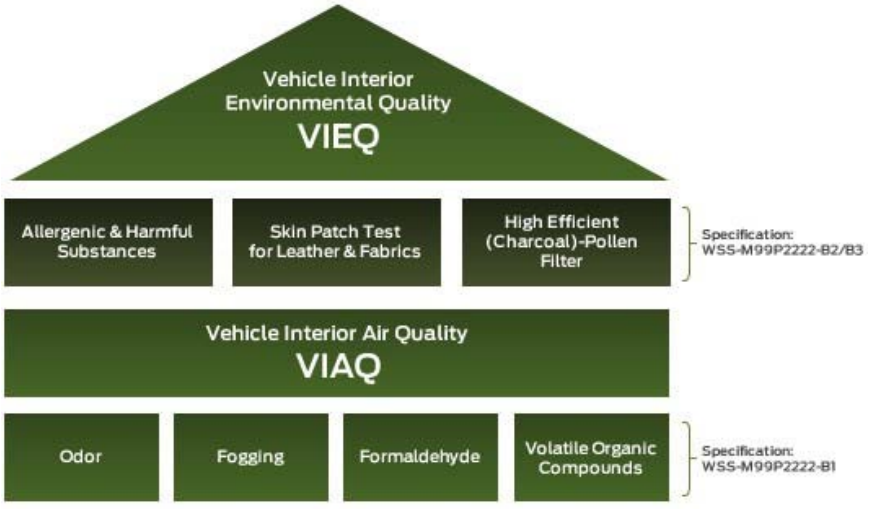
Improving Vehicle Interior Environmental Quality and Choosing Allergy-Tested Materials

At Ford, it is our corporate social responsibility to develop and offer products that are safe, sustainable and progressive. As part of this effort, 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 the risk of allergies and volatile organic compounds and works with suppliers to verify that we meet voluntary initiatives through rigorous scientific testing. 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, vehicle engineers test more than 100 materials and components for allergy issues. In addition, all components that have direct and prolonged skin contact – such as the steering wheel and seat covers – are dermatologically tested. The complete VIAQ standards include requirements for fogging and odor at the component level, air filtration, allergy patch testing and total vehicle organic compounds. 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 in in the U.S. We plan to implement them in our South American and Asia Pacific and Africa operations in the future.

We are also implementing a voluntary vehicle interior air-quality and allergen-free third-party certification process. This certification can be used by vehicle engineers in markets where certification is likely to be valued by consumers.

The following graphic shows our overall approach to improving vehicle interior environmental quality, including our allergen and VIAQ specifications.



Related Links

Vehicle Websites

- Ford C-MAX
- Ford Fiesta (European)
- Ford Focus (European)
- Ford Fusion (European)
- Ford Galaxy
- Ford Kuga
- Ford Mondeo

Ford of Europe vehicles were the first vehicles worldwide to be awarded an “allergy-tested interior” certification by TÜV Rheinland, a Germany-based organization that controls and approves quality standards for industrial and consumer products. To obtain this certification, components in the vehicle interior must meet strict requirements focused on three key areas: measuring and meeting standards for the in-vehicle concentration of volatile organic compounds; minimizing the risk of allergic reactions; and high-efficiency air filtration. The requirements for minimizing the risk of allergic reactions include ensuring that no substances with allergenic potential (e.g., latex, nickel, chromium VI) are used for components likely to have contact with people’s skin. They also require the use of an efficient pollen filter to protect passengers against allergenic particles in the outdoor air.

Nine of Ford’s European models have met these requirements: the new Ford Fiesta, European Focus (including the Focus Coupe-Cabriolet), European Fusion, five-passenger C-MAX, seven-passenger Grand C-MAX, Kuga, S-MAX, Galaxy and Mondeo. In February 2008, the Berlin-based European Center for Allergy Research Foundation awarded Ford with its quality certificate – an additional recognition of the Company’s “allergy-tested interior vehicle” initiative.

Looking ahead, we are researching ways to use in-vehicle communication systems to help drivers monitor and maintain their own health and wellness. We are partnering with Microsoft, Healthrageous and BlueMetal Architects to develop systems that extend health management into the personal vehicle in a nonintrusive fashion. The system would work by using 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 can access after having left the vehicle.

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 2011, more than 4.5 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 E.U. 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.

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- 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. South Korea and Japan will soon adopt REACH-like regulations to manage their chemicals. 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 planning to promulgate regulations implementing a Safer Consumer Products law in 2012. 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 nearly 100 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 18 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 250 facilities providing unrivalled 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 2010, this certification was extended by another three 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, 11 U.S. models exported to South Korea are providing self-certification documents meeting the 85–95 percent recyclability requirement.

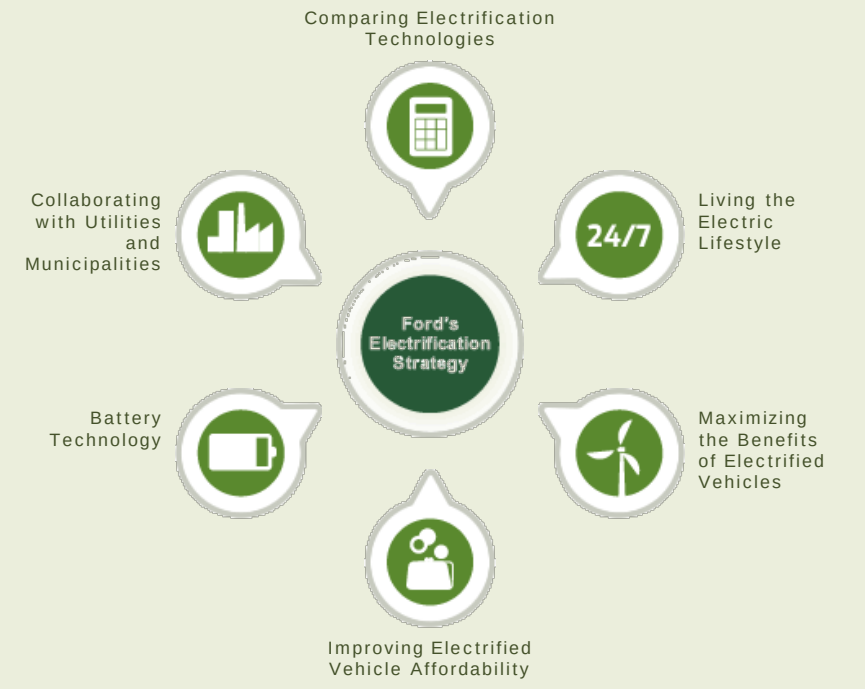
Ford has participated in research into alternative treatments for end-of-life vehicles. Most of the plastic, foam and other nonmetal vehicle materials end up being shredded. Most of this "auto shredder residue" (ASR) ends up going to landfill. We have been working to assess the environmental impacts 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



In the past few years, most major global automakers, including Ford, have begun to offer a new generation of electrified vehicles to consumers. Utilities are also working to understand how to provide power to plug-in electric vehicles in a way that is effective in meeting consumer needs, efficient for electricity providers and environmentally sound.

Why the rise in interest and activity? The electrification of vehicles could cut greenhouse gas (GHG) emissions from vehicles, increase the use of domestic energy sources, decrease pressure on petroleum stocks and reduce urban air pollution. With the benefit of information technologies and "smart grids," electrified automobiles could also improve the efficiency of the power grid – thereby lowering electricity costs – and facilitate the use of renewable energy sources, such as wind and solar.

But many challenges remain. For example, to achieve their full potential to cut lifecycle GHG emissions from automobiles, low-carbon electric generation must make up a greater part of the total supply, and electric vehicles must become functioning parts of "smart grids." Battery technologies are still evolving, and the cost of new-generation batteries remains high. We are also assessing supply chain issues associated with materials needed to manufacture batteries, including lithium and rare earth metals. We discuss all of these issues in more detail throughout this section.

This section provides an overview of Ford's electrification strategy. It also explores electrification technologies and their environmental benefits, and discusses how Ford is addressing key challenges and opportunities related to vehicle electrification. For more detail on our electric vehicle technologies and other fuel-efficiency, advanced powertrain and alternative-fuel technologies, please see the Sustainable Technologies and Alternative Fuels Plan.

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.

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This Report

- Battery Technology
- Quantifying Our Environmental Impacts
- Supply Chain
- 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, smart application of different types of electrified vehicle technologies. Our strategy includes the following:

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 reduce 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 and deliver leading fuel economy across our lineup to meet different customers' transportation needs. To do this, we are electrifying global vehicle lines rather than creating a special electrified vehicle model. That way, our customers can choose from a variety of electrified vehicle powertrains, including hybrid electric vehicles (HEVs), plug-in hybrid vehicles (PHEVs) and full battery electric vehicles (BEVs). We are also delivering electrified vehicles in a range of different vehicle segments, including sedans, utility vehicles and luxury vehicles. By 2020 we expect that 10 to 25 percent of Ford's global sales will be electrified vehicles, including HEVs, PHEVs and BEVs. We expect HEVs to make up about 70 percent of that share. Currently, HEVs make up approximately 2 percent of Ford's total fleet.

By the end of 2012, Ford will offer the following 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 will 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, where braking energy is stored and reused. The Ford C-MAX Hybrid will be our first multi-activity vehicle in North America and will launch in the fall of 2012; it is expected to be among the leaders in its segment for fuel economy. The hybrid version of the all-new, redesigned Fusion, which will also be introduced in the fall of 2012, is expected to deliver 47 miles per gallon (mpg) – segment-leading fuel economy. For more information about our hybrid vehicles and technology, please see the Hybrid Electric Vehicles section.

In the spring of 2012, we launched the Focus Electric, a BEV version of the all-new Ford Focus, in North America. The Focus Electric has a U.S. Environmental Protection Agency (EPA) fuel-efficiency rating of 110 miles per gallon equivalent (MPGe) city and 99 MPGe highway, making it the most fuel-efficient compact vehicle in the U.S. With innovative technologies, the Focus Electric can be fully recharged in half the time (4 hours) and at a lower cost (approximately $1 for a full charge) than competitors' BEVs with comparably sized batteries. The Focus Electric also offers more power, more space and more standard features than any other comparable all-electric vehicle. It 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.

In 2012 in North America, we will introduce our first PHEV, the C-MAX Energi. In addition, the Fusion Energi, a plug-in hybrid version of our all-new Fusion, will go into production by the end of 2012 in the U.S. For more information about our plug-in hybrid vehicles and technology, please see the Plug-In Hybrid Electric Vehicles section. All of these vehicles will use next-generation lithium-ion batteries.

We will also expand our electrified vehicle lineup to Europe beginning with the Focus Electric in late 2012. We will launch hybrid vehicles in Europe in coming years.

Using Global Platforms

We are basing our electrified vehicle products on our highest-volume global platforms. This

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- Battery Electric Vehicles
- Collaborating with Utilities and Municipalities
- Dealers
- Hybrid Electric Vehicles
- Living the Electric Lifestyle
- Plug-in Hybrid Electric Vehicles

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- Electrified Vehicles
- Plug into Ford

approach offers tremendous opportunities for production economies of scale. For example, the Focus Electric, C-MAX Energi and C-MAX Hybrid will all be based on Ford's next-generation "C-car" platform, and will be built alongside the 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 Fusion Energi PHEV will be based on our global C/D 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.

Delivering a Total Electric Vehicle Lifestyle

Electric vehicles have many advantages for consumers, like possibly never having to visit a gas station again. But they also require drivers to make changes to their driving routines and may cause some new anxieties, like wondering if the car has enough charge to get to the next destination. To help drivers make the transition to electric vehicles 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 plug-in electrified vehicles have advanced in-vehicle communications and innovative applications for wireless devices 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. Our innovative MyFord Mobile app, co-developed with technology leaders such as Microsoft and MapQuest®, allows owners to control charging and other in-vehicle operations remotely. For example, the app can "wake up" to pre-heat or pre-cool the cabin while the car is being charged, to help reduce battery usage for these energy-intensive functions. We have also developed a comprehensive approach to vehicle charging that makes it 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.

Bringing EVs to Market Thoughtfully

Ford is taking a proactive approach to making EVs successful in the marketplace. We are working with utilities, municipalities, dealers and customers to make the transition to EVs as smooth as possible. 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, EV dealers were required to install two EV charge stations at their facilities – one in the service area and another in the customer-facing area. EV dealers are also undergoing a "green dealer onsite facility assessment" to identify energy- and cost-saving opportunities, with a goal of facilitating energy efficiency, lower operating expenses and a reduced carbon footprint. For more information on this Go Green Dealership effort, please see the Dealers section.

We have also developed websites, videos and brochures to help consumers understand electrified vehicle offerings and incorporate EVs into their lifestyle. For example, our electrified vehicle website helps consumers understand key features 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 like MyFord Mobile, how to charge the vehicle or set the charge time, and the Best Buy charge station installation process.

We are also targeting our initial EV offerings in markets that we believe will be able to take advantage of the full range of EVs' benefits right away. We are initially introducing the Focus Electric in the spring of 2012 in the largest electrified vehicle markets – New York, New Jersey and California – that have some of the most established, fastest-growing charging station infrastructures and government support. We will follow this initial launch by rolling the car out in the fall of 2012 to 15 more U.S. metropolitan areas: Atlanta, Austin, Boston, Chicago, Denver, Detroit, Houston, Orlando, Phoenix, Portland (Oregon), Raleigh-Durham, Richmond, Seattle, Tucson and Washington, D.C. These markets were chosen based on several criteria, including commuting patterns, existing hybrid purchase trends, utility company collaboration and local government commitment to electrification. The Certified EV Dealer Network will be expanded to cover a broader national market in the third quarter of 2012 as the C-Max Hybrid and C-Max Energi become available.

As part of our collaboration with dealers, utilities and local governments, Ford is helping to develop consumer outreach and education programs on electric vehicles 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 "Charging into the Future 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 EVs 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.

Collaborating with Partners

Gearing up for the development and diffusion of electrified vehicle technologies will be 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. In Ford's vision, a coalition of automotive manufacturers and other stakeholders will work together 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.

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 hybrids (PHEVs), and battery electric (or "all-electric") vehicles (BEVs). The different technologies have different benefits and 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.

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- Electrified Vehicles

In a recent national survey, we found that nearly half of Americans are confused when it comes to 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. This inspiring documentary series will feature innovative leaders who are shaping sustainable businesses and influencing positive change around the world. Ford also has an electrified vehicle website to help consumers understand key features and differences between electrified vehicle options. The site provides jargon-free explanations of the differences between HEVs, PHEVs and BEVs, including details on the technologies. 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 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 2.4 percent of the market for new vehicles in 2011.

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 is currently offering, or has announced will be produced in the near future, such as the Focus, C-MAX Hybrid, C-MAX Energi and Focus Electric.

	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 110-volt outlet. 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.	Flexible for a wide range of uses.	Flexible for a wide range of uses.	Ideal for customers with access to a plug

		Improved fuel economy in urban driving.	Excellent urban fuel economy and improved highway fuel economy.	Dramatically improved fuel economy in city driving. Suitable for customers who have access to a plug at home and/or the office with daily trips around 30 miles between charges, but flexibility for longer trips as well.	at home or work who have shorter, 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] (Roughly real-world fuel economy for a compact sedan)	~33mpg	~35 mpg	~49 mpg[5]	95 MPGe[6] in electric mode. Similar to HEV when running on gasoline.	110 MPGe[6]
Range on tank/charge[7]	~450 miles/tank	~470 miles/tank	~660 miles/tank	~690 miles on combined gas and electric power. More than 1,200 miles between visits to a gas station in typical use.	Up to 80 miles on a charge
Fueling/charging time	Minutes	Minutes	Minutes	Minutes for gasoline; 2–4 hours with a 220-volt outlet and 4–8 hours with a 110-volt outlet.	4 hours with a 240-volt outlet
CO_2 emissions[8]					
Well to tank	~40 g/km	~40 g/km	~30 g/km	Current grid:[9] ~120 g/km	Current grid:[9] ~150 g/km
Tank to wheels	~170 g/km	~160 g/km	~110 g/km	Current grid:[9] ~30 g/km	Current grid:[9] 0 g/km
Well to wheels[10]	~210 g/km	~200 g/km	~140 g/km[11]	Current grid:[9] ~130 g/km[12]	Current grid:[9] ~130 g/km[13]
Annual fuel cost	~$1,100–$1,800[14]	~$1,000–$1,700[15]	~$700–$1,200[16]	~$550 ($200 gasoline+$350 electricity)–$700 ($350 gasoline+$350 electricity)[17]	~$500[18]

Below is a detailed look at the components that will make up the new BEVs.

Ford Focus Electric

1. Motor Controller and Inverter
2. High Voltage Electric HVAC Compressor
3. Electric Water Pump
4. Traction Motor
5. Electric Power Steering
6. Gearbox
7. Modular Powertrain Cradle
8. Electric Vacuum Pump
9. High Voltage PTC Electric Coolant Heater and Controller
10. Vehicle Control Unit
11. Battery Pack and Battery Cells
12. AC Charger
13. DC-DC Converter

* Image based on prototype, not production vehicle.

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 by 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 hybrid vehicle applications, drawing electrical energy directly from the main battery pack. An inverter is included in the compressor.

3 Electric Water Pump

The electric drive water pump circulates coolant for the traction motor, inverters, battery and heater.

4 Traction Motor

The traction motor performs the conversion between electrical and mechanical power. Electric motors also 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. A production vehicle would be designed with electric power steering.

6 Gearbox

The transmission has the identical role as in a conventional vehicle; however, it has different design considerations due to the higher RPM range available from the electric motor and increased emphasis on efficient and silent operation. The transmission is a single-speed unit with a 5.4:1 reduction.

7 Modular Powertrain Cradle

This is a structure for monitoring all engine compartment EV components and providing isolation from the vehicle body through traditional engine mounts.

8 Electric Vacuum Pump

The vacuum pump supplies vacuum to the brake system for power assist.

9 High Voltage PTC Electric Coolant Heater and Controller

Heating systems are specifically designed for hybrid vehicle applications. Energy-efficient PTC technology is used to heat the coolant that circulates to the passenger car heater. Heat also may be circulated to the battery.

10 Vehicle Control Unit

The vehicle control unit (VCU) communicates with the driver as well as each individual vehicle system to monitor and control the vehicle according to the algorithms developed by the vehicle integration team. The VCU manages the different energy sources available and the mechanical power being delivered to the wheels to maximize range.

11 Battery Pack and Battery Cells

The battery pack is made up of seven battery modules of 14 cells – 98 cells total for 23 kWh of power. The batteries are air cooled using existing vehicle cabin air. 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.

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 10 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. All estimates are based on a 13.5-gallon tank except for the BEV, which has no fuel tank.
8. In vehicles using internal combustion engines, the fuel feedstock is assumed to be petroleum gasoline.
9. “Current grid” assumes average current emissions from U.S. power generation.
10. “Well to wheels” carbon dioxide (CO_2) includes all CO_2 emissions generated in the process of producing the fuel or electricity as well as the CO_2 emissions created by burning the fuel in the vehicle itself. It is useful to break this down into “well to tank” emissions, which measure the CO_2 emissions generated by excavating the feedstocks and producing and distributing the fuel or electricity, and “tank to wheels” emissions, which include the CO_2 generated by burning the fuel in the vehicle. “Well to tank” emissions are based on the GREET v. 1.8d.0 model developed by the Argonne National Lab. “Tank to wheels” calculations are based on FordÙs estimates using the metro-highway drive cycle and energy use for a C-class electric vehicle.
11. In HEVs, the fuel feedstock is assumed to be petroleum gasoline.
12. In PHEVs, the “well to tank” emissions are based on the percentage of emissions from gasoline fuel production and distribution and electric power generation, and the “tank to wheels” emissions are based on the percentage of time the vehicle is driven using gasoline.
13. In BEVs, “well to tank” emissions include emissions related to electric-power generation, and “tank to wheels” emissions are zero, because no CO_2 is produced by running the vehicle on batteries charged with electrical power.
14. Based on 12,000 miles/year, 33 mpg and $3–5/gallon.
15. Based on 12,000 miles/year, 35 mpg and $3?5/gallon.
16. Based on 12,000 miles/year, 49 mpg and $3?5/gallon.
17. Based on 12,000 miles/year, 70 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 30 percent in gasoline-engine mode at 49 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.

Living the Electric Lifestyle

To help drivers make the transition to 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. We have also 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 with MyFord Touch

In several regions, including the U.S., our electric vehicles will ultimately include an enhanced version of MyFord Touch – Ford's driver interface technology – that will give drivers information tools to help them maximize their driving range, plan the most eco-friendly route and manage the battery recharge process. For example, the system will provide vehicle data such as the electrical demands of vehicle accessories – including air conditioning, which influences the electric driving range. The system will also provide information on the battery's state of charge, distance to charge points, "energy budget" and expected range surplus.

We designed the Focus Electric to provide more range at full charge than most Americans will use each day. But we know that, at least initially, "range anxiety" will be an important issue for consumers. So we have designed in-vehicle communications to make on-board energy management a rewarding and fun part of the ownership experience. For example, the vehicle can analyze 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 will get a longer range out of their car than those who drive more aggressively. But our in-vehicle information systems can adapt to any way you choose to drive. The Focus Electric will continuously analyze a

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driver's style, recalculate range and distance to required charge, and show how driving behavior affects the vehicle's energy budget. To provide the driver with realistic driving range information, the vehicle "recognizes" drivers by their key fobs and automatically adjusts to maximize range based on what it has learned about that driver's driving style. The system can also coach drivers on how to drive more efficiently to maximize their electric driving range.

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.

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 using different options and by 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.

Remote Control with MyFord Mobile™

Drivers in the U.S. and Canada will also be able to manage their Focus Electric remotely using the Ford-developed MyFord Mobile app. MyFord Mobile 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 battery electric vehicles, the MyFord Mobile app provides a suite of additional remote communications. For example, working with MapQuest, MyFord Mobile 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. Drivers can also get instant vehicle status information, monitor the car's state of charge and current range, get alerts when it requires charging, remotely program charge settings and review vehicle data for analysis from their smartphone or the MyFord Mobile website. 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.

The MyFord Mobile app

The MyFord Mobile app also allows drivers to tell 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.

MyFord Mobile for EVs also adds a social element. 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.

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.

Find out more by watching 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 BEV or 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 a best-in-class at-home charge time of four hours when using a 240V charge station installed in the customer's garage. That's half the time

it takes our competitors' BEVs with comparably sized batteries to charge up. This allows drivers to get more range out of "quick stop" charging during the course of their driving day. Our vehicles can get approximately 30 miles of range per "charge hour" compared to 15 miles per charge hours for competitors' electric vehicles.

U.S. drivers can also customize their charging preferences. Drivers can choose the times when their car must be charged up and ready to go and set up a charging schedule that dictates when the charging starts and stops to meet those needs. They can also control vehicle charging using Value Charging by Microsoft, a system that communicates with local utilities and sets up charging times based on when utility rates are lowest in their area. Customers can reduce their electricity costs by taking advantage of off-peak or other reduced utility rates without a complicated setup process. With this technology, customers will be able to "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 Microsoft system. Because Ford's EVs charge in half the time of competitors' BEVs with comparably sized batteries, we make it easier to get a complete charge within the time periods of the lowest utility rates.

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. The light ring then illuminates in quadrants as the vehicle charges. 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."

We put a lot of thought into the actual charging station into which drivers will plug their vehicles. We are 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 or move it to a new location in your existing garage. In the U.S., we worked with Leviton to develop a simple, ergonomic, easy-to-use charge station and with Best Buy to provide Best Buy/Geek Squad installation services. Best Buy will help facilitate the process of owning an electric vehicle by evaluating homes, working with electricians on permitting issues and installing the units. The charging station standard installation will cost $1,499, including the charge station, garage site survey and permits – 30 percent less than competing systems. Customers need only to call Best Buy's dedicated 1-888 number (1-888-219-6747) to set up a Geek Squad garage site survey. The Geek Squad agent will also guide the customer through the installation process.

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, nitrous 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 carbon dioxide (CO_2) emissions values on the Comparing Electrification Technologies page.)

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- Collaborating with Utilities and Municipalities
- Comparing Electrification Technologies
- Living the Electric Lifestyle
- Sustainable Materials

However, in some regions of the country, where electrical power is derived largely from cleaner and/or renewable sources, the emissions benefits of PHEVs and BEVs can be much better, because renewable energy sources produce significantly fewer emissions than the coal and natural gas that are often used for power generation. We believe that, over time, the emissions benefits of plug-in electric vehicles will continue to improve as states undertake efforts to improve the emissions profile of their electrical grid. For example, many states already have portfolio standards that require the use of renewable sources of electricity. In addition, "smart grids" that include grid-to-vehicle communications would enable utilities to make more-efficient use of electricity supplies, potentially reducing emissions and electricity costs.

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 her 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 Electric Vehicles

The current energy demand for transportation is almost exclusively met by petroleum. In the U.S., for example, approximately 94 percent of transportation energy demand is provided by petroleum. The near-complete dependence of a vital economic sector on an import-dominated energy resource is clearly an issue of concern. One of the major benefits of increasing the proportion of electrified vehicles in the U.S. fleet is that it will diversify the transportation energy demand and provide increased energy security. HEVs reduce petroleum demand by increasing efficiency. PHEVs reduce petroleum demand due to increased efficiency and also by switching some of the energy demand from petroleum to other sources. BEVs remove entirely the need for petroleum.

To realize the potential benefits of vehicle electrification, a range of issues must be addressed, including strategies to maximize their environmental benefits. Vehicle and fuel technologies interact

in a complex system that includes vehicle technologies, battery technologies, fuel types and energy-generation technologies, all of which determine potential impacts on the environment and energy security.

Ford alone cannot solve these issues. However, we are working with partners, such as utilities, to maximize the environmental benefits of electrified vehicles. We are also implementing technologies that will help customers drive their electrified vehicles to maximize efficiency, increasing other green features of our electric vehicles and implementing green manufacturing processes at our electric vehicle plants.

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. 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

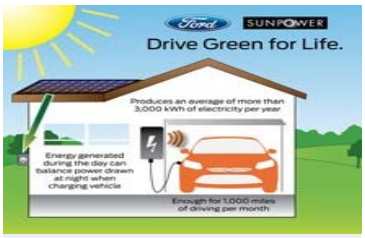
Our in-vehicle information systems also help drivers maximize their own driving efficiency to further increase the distance they can go on a single charge and reduce the overall costs of operating an EV. As described in Living the Electric Lifestyle, our electric vehicles can coach drivers how to drive more efficiently by changing their driving style, maximizing regenerative braking or minimizing the use of air conditioning. The vehicle information systems also provide information on range and vehicle energy use to help drivers track and maximize their driving efficiency.

Maximizing Charging Efficiency

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. Both increasing the use of renewable energy sources and investing in smart grid technologies will help to improve the environmental benefits of EVs. Many of these issues are beyond Ford's control. However, Ford is working with utilities and municipalities to make the most of electric vehicles' advantages. We are also doing what we can to provide efficient and environmentally friendly charging options.

Using renewable energy: Recharging using electricity generated by renewable energy sources (such as solar, wind, hydropower or biomass) can cut CO_2 emissions dramatically. Smart vehicle-to-grid communication can help utilities better use renewable energy sources. For example, it can allow vehicles to recharge 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. 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.

Adding more renewable fuel sources to electrical grids will take time. 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 powering their home has not shifted to renewable.



Ford and SunPower's Solar Power Energy Solution

Ford is making it possible to offset the energy needed to charge their EVs with renewable energy. We are partnering 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 kilowatt rooftop solar system is backed by a 25-year 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 the $10,000 price point, 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 efficient integration of electric vehicles and grids, and an important strategy to maximize EV efficiency and environmental benefits.

Smart grids will help make the electrical grid and electrical vehicle charging more efficient by channeling vehicle recharging 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.

With all these variables, utilities will be key partners in defining and developing electricity supply systems for electric vehicles that are efficient, affordable and environmentally sound. That's why Ford partnered with several utilities throughout the U.S. and Canada, as well as with the U.S. Department of Energy, for its PHEV pilot program. For more information on our work with utilities, please see Collaborating with Utilities and Municipalities.

Value Charging Powered by Microsoft, which is available first on Ford U.S. vehicles, also helps to maximize the efficiency of charging and the environmental benefits of EVs. This system communicates with local utilities to find 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 and Microsoft plan 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, and we are using 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 build 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 plant also draws power from local landfill gas, making productive use of methane generated from decaying trash, which reduces emissions of this potent greenhouse gas. The plant also uses solar-powered tugs, which move vehicles and parts around the plant.

Ford is also using green materials in our HEVs, BEVs and PHEVs, as well as many of our other vehicles, to further maximize their environmental benefits. For example, our existing HEVs use recycled-content seat fabrics. Starting in 2011, all of our U.S. vehicles will use soy foam, including the Focus Electric. The Focus Electric will also use a material called Lignotock behind the cloth on the door. Derived from 85 percent wood fibers, this renewable material reduces weight and provides better sound-deadening benefits compared to conventional glass-reinforced thermal plastics. In addition, the vehicle-charging stations we developed with Leviton use 60 percent recycled materials. For more information about our use of green materials in vehicles, please see Sustainable Materials.

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 electricity and gasoline costs, 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[1] per mile for a conventional gasoline-powered vehicle. So, lower operating costs can help to offset the higher initial purchase costs of electric vehicles (EVs).

Automakers will need to invest billions of dollars to develop next-generation electrification technologies and electrified vehicles. 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. 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 will produce 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.

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 $2.00. Driving 80 miles in a highly fuel-efficient, competitive gasoline-powered vehicle that gets 40 mpg would cost about $7.00 (assuming $4.00 per gallon of gasoline) – over three times more than the EV. If drivers use Value Charging Powered by Microsoft, the cost of traveling 80 miles in the Focus Electric drops even further to just less than $1.00 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 our partnership with Microsoft, 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

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attention during the life of the vehicle. So, for example, drivers won't have to get oil changes or change 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.

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 Technology

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 hybrids, which are designed to allow for constant discharging and recharging and are not expected to store and provide large amounts of energy. In fact, these batteries have proven to be incredibly durable and reliable in even the most grueling real-world driving conditions. Our HEVs have been put to the test in taxi fleets in major cities, including New York and San Francisco, where they run up to 21 hours a day in stop-and-go traffic and on steep slopes. Ford's hybrid taxi fleet has logged more than 80 million miles in California alone during the past decade.

In spite of this strong track record, our nickel metal hydride batteries are reaching the end of their advancement potential, and new battery technologies are needed to improve on the current generation of HEVs. 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 are moving toward lithium-ion batteries for next-generation HEVs and for PHEVs and BEVs. These batteries have greater energy density and are lighter than nickel metal hydride batteries. Even so, the technology is still evolving, and costs are still relatively high. (See the section on Battery Evolution below).

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. Ford is actively working to establish a plan to respond to this need in the future.

Battery Evolution

Battery technology is evolving. The following table shows how new battery technology, such as the nickel metal hydride batteries used in today's HEVs and the lithium-ion battery technology of next-generation electrified vehicles, compares 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 today's generation of hybrid vehicles.	Developed for future 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,

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			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.	Proven in consumer electronics, this technology is for automotive applications; expensive until volume production is reached.
Specific energy (watt hours per kilogram)	30–40	65–70	100–150
Recyclability	Excellent	Very good	Very good

Ford has been working with battery supplier partners to develop next-generation battery technologies that can improve HEV performance and stand up to the new challenges presented by BEVs and PHEVs. For example, the performance of batteries varies with weather conditions. We are conducting tests of the effects of temperatures and other conditions so we understand and can communicate to customers the impacts on expected range between recharging.

Ford is also working with researchers at the University of Michigan and the Massachusetts Institute of Technology to develop and test improved lithium-ion battery technology.

All of Ford's electrified products, including HEVs, PHEVs and BEVs, will use lithium-ion battery cells by 2012 beginning with the Focus Electric. Lithium-ion battery packs offer a number of advantages over the nickel metal hydride batteries that power today's hybrid vehicles. In general, they are 25 to 30 percent smaller and 50 percent lighter, making them easier to package in a vehicle.

The Focus Electric will be 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 developing a comprehensive strategy to address batteries that can no longer be used in vehicles. For example, we are working with DTE Energy to develop stationary energy storage systems from vehicle batteries that have reached the end of their useful life in vehicles. In addition, Ford engages with all the parties that handle end-of-life batteries, including customers, local authorities, emergency services (e.g., tow trucks), 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. We have conducted and published a study of lithium availability and demand with scientists at the University of Michigan. 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. We are 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 Basic Working Conditions, Human Rights 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 evaluating 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.

Home > Climate Change and the Environment > Greening Our Products > Electrification: A Closer Look > Battery Technology

Collaborating with Utilities and Municipalities

Clearly, electric vehicles (EVs) will have an impact on electric utilities. 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, recharging 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 will have 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 (EVSE) manufacturers, electric utilities and governmental 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.

Ford has taken the lead in forging relationships with utilities and municipalities to address these challenges and facilitate the successful implementation of electric vehicles. In 2007, we initiated the Ford Plug-in Project, a collaborative effort involving the U.S. Department of Energy, the Electric Power Research Institute, the New York State Energy Research and Development Authority, and 10 utilities (Southern California Edison, American Electric Power, ConEdison of New York, DTE Energy, National Grid, New York Power Authority, Progress Energy, Southern Company-Alabama Power, Pepco Holdings and Hydro Quebec). Through this project we are road testing Ford Escape plug-in hybrid prototypes that are equipped with vehicle-to-electric smart grid communications and control systems that will enable plug-in electric vehicles to interface with the electric grid, and will allow the vehicle operator to determine when and for how long to recharge the vehicle. This will potentially enable the user to take advantage of lower, off-peak utility rates.

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. It also helps 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 more public recharging stations and to encourage a thoughtful and holistic approach to planning for publicly accessible recharging. In the next 18 months, we expect to see at least 12,000 publicly accessible charge stations installed in cities throughout the U.S., up from about 5,000 currently. 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/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. Much of this work is focused on the 19 markets we have identified as our initial targets for EV sales. In these markets, we are involved in direct partnerships with utilities and municipalities. We are also serving in a formal advisory role to utilities in several states. Ford is 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 we have gained so far include the following:

- Electric vehicles provide additional impetus to develop smart communication systems between the vehicle and the grid. This communication will allow the consumer to know if and when lower electricity rates are available (as some utilities will offer lower rates during the night when energy demand is low), 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 the customer by the utility (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.
- 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.

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 2011 and 2012 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 for 2010 with The Climate Registry (TCR), a voluntary carbon disclosure project 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. Ford’s first report was used as the template for subsequent reporting in Mexico’s program.
- We voluntarily report GHG emissions in the U.S., Canada, Argentina, Australia, Brazil, China, the Philippines and Taiwan.
- Since 2005, GHG emissions from our European manufacturing facilities have been regulated through the EU Emission Trading Scheme. These regulations apply to five Ford facilities in the UK, Belgium and Spain.
- 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. Facilities subject to the rule were required to begin collecting data as of January 1, 2010, and to submit an annual report for calendar year 2010 by September 30, 2011. Many of our facilities in the U.S. were subject to the reporting requirements and submitted reports as required. Our proactive approach and early action on GHG reporting globally have prepared us for this new requirement.

Our participation in these reporting, emissions-reduction and trading schemes has played an important role in accelerating our facilities’ GHG emissions-reduction activities.

Performance

Ford reduced its overall global energy consumption by 42.4 percent in 2011 compared to 2000. For 2011 alone, we reduced overall global energy consumption by 3.6 percent compared to 2010 and energy consumption per vehicle produced by 10 percent compared to 2010. Also in 2011, we improved energy efficiency in our North American operations by 2.6 percent indexed against our 2010 baseline year. This energy efficiency index is adjusted for typical variances in production and weather and is tracked against the baseline year to measure cumulative improvements in energy efficiency.

We reduced our facilities-related CO_2 emissions by approximately 48 percent, or 4.5 million metric tons, from 2000 to 2011. During this same period, we reduced facilities-related CO_2 emissions per vehicle by 36.5 percent. Our total CO_2 emissions decreased from 2010 to 2011 by more than 2.7 percent, while total CO_2 emissions per vehicle decreased by 7.5 percent during that period.

Related Links

This Report

- Climate Change
- Emissions Trading
- Non-CO_2, Facility-Related Emissions

We set – and exceeded – a target to reduce our North American facility GHG emissions by 6 percent between 2000 and 2010 as part of our Chicago Climate Exchange commitment. This program ended in 2011. The Company has also committed 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.

The EPA again recognized Ford's energy-efficiency achievements in North America by awarding us the 2011 Energy Star Partner of the Year Sustained Excellence Award, which recognizes Ford's continued leadership and commitment to protecting the environment through energy efficiency. This is Ford's sixth consecutive year winning this prestigious award. The Energy Star Partner of the Year award requires organizations to demonstrate proficiency through the management of projects and programs, data collection and analysis and communication actions, including community outreach and active participation in Energy Star industry forums. The Sustained Excellence level is achieved by illustrating notably consistent actions and continued improvements. Among the achievements recognized by the award is a 40 percent improvement in the energy efficiency of Ford's U.S. facilities since 2000, equivalent to the amount of energy consumed by 110,000 homes.

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 for all Ford plants in North America. We use this near-real-time information to create energy-use profiles for these plants and to improve decisions about nonproduction shutdowns and load shedding, which involves shutting down certain pre-arranged electric loads or devices when we reach an upper threshold of electric usage. We are currently expanding that system to other utilities and to provide greater analytic abilities.

During 2010, we began planning to expand this system to a global scale and to provide energy-consumption data down to the departmental level. Our Kansas City Assembly Plant and Cologne Assembly Plant served as the pilot sites for this Global Departmental Level Metering (GDLM) effort. The system is now implemented at these two sites, and they are in their final stages of testing. We are now working on the global rollout of this approach. Linked with production, other data sets and access to maintenance and control systems, this will greatly improve data analysis and the time required to make system changes.

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. Since 2000, Ford has invested more than $226 million in plant and facility energy-efficiency upgrades.

During 2010 and 2011, for example, we packaged 17 buildings in the Dearborn, Michigan, area into one performance contract to upgrade to more-efficient lighting. The project reduced energy use by more than 18.2 million kilowatt-hours – enough to power 1,648 U.S. homes for a year. The project also eliminated more than 11,000 metric tons of CO_2 emissions and cut annual costs by more than $1.3 million. In 2012, we began exploring another lighting performance contract for other facilities in the Dearborn area and additional opportunities at several manufacturing sites. Opportunities are also being explored for updating and/or commonizing building automation controls and mechanical systems, using this approach. We are investigating the replication of performance contracting for energy reduction for other regions of the world.

In addition, we are replicating Ford's state-of-the-art paint process that eliminates the need for a stand-alone primer application and a curing oven system. This technology, called "Three-Wet," reduces CO_2 emissions by up to 40 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 water-borne paint systems. The process is delivering reduced costs per vehicle because it allows the elimination of a stand-alone primer spray booth and oven, and the attendant energy costs required to run them.

Ford began implementing this technology in 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 Three-Wet paint at facilities in India, Romania, Mexico, China and Thailand. We now use the Three-Wet system at nine of our facilities globally and are continuing to evaluate additional plants for Three-Wet conversion, as refurbishment actions are 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. The new system, in contrast, cleans parts mechanically by moving them in front of specialized high-pressure nozzles with a robotic arm. This new robotics-based system represents a significant leap forward in energy efficiency that also improves quality, flexibility, productivity and cost. It saves energy in part because, unlike previous systems, it does not require any heat. It also uses a much smaller water pump. We are now using this technology at plants in the U.S., Romania and Germany. We have incorporated the technology as standard for all engine and transmission final wash applications, ensuring that the energy and cost savings will be realized by all future vehicle programs. We intend to expand the use of this technology in future programs in North America and are pursuing the use of this technology in China, India and Brazil.

We are also continuing the development of a system, called "fumes to fuel," that 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. In our "fumes-to-fuel" system, a paint emission concentrator concentrates VOC emissions by approximately 2,000:1. In this super-concentrated state, the VOCs themselves 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 paint emission concentrator system has the potential to reduce CO_2 emissions by 80 to 85 percent, compared to traditional abatement equipment. We are also investigating opportunities to use the super-concentrated VOCs as a fuel source for both an internal combustion engine and a fuel cell, which could be used to provide additional power to the paint shop. For more information on the fumes-to-fuel system, 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
- Installing automated control systems on plant powerhouses and wastewater treatment equipment to increase energy and process efficiency

Renewable Energy

Ford is actively involved in the installation, demonstration and development of alternative sources of energy.

Ford's Genk plant in Belgium is partly powered by two wind turbines installed by local energy company Electrabel. Each unit has an output of 2 MW of power, which is used in the manufacture of the Ford Mondeo, S-MAX and Galaxy models. Furthermore, all other electrical energy supplied by Electrabel used at the Genk plant comes from renewable sources.

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 2 MW wind turbine was installed in 2011.

Dagenham Diesel Centre, UK

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 CO_2 emissions annually.

Since 2008, Ford has been sourcing renewable electricity to cover the full electric power demand of its manufacturing and engineering facilities at its 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. In addition, we continue to use a landfill gas installation at the Wayne Assembly Plant.

Related Links

This Report

- Partnerships and Collaboration
- Waste Management

At our Michigan Assembly Plant, we are building a smart renewable power storage system. We are collaborating with DTE Energy to build this stationary, battery-based energy storage facility, which will combine a 500 kW solar photovoltaic array with a 750 kW storage system to deliver 2 MW of energy. This project will provide vital knowledge from a real-world integration of renewable energy, smart-grid technologies and battery storage infrastructure. For more on this project, please see Partnerships and Collaboration.

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 are using solar thermal heating at the Chennai plant to heat water for cooking in the main cafeteria. 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, which was installed in spring of 2011, 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) facilities 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.

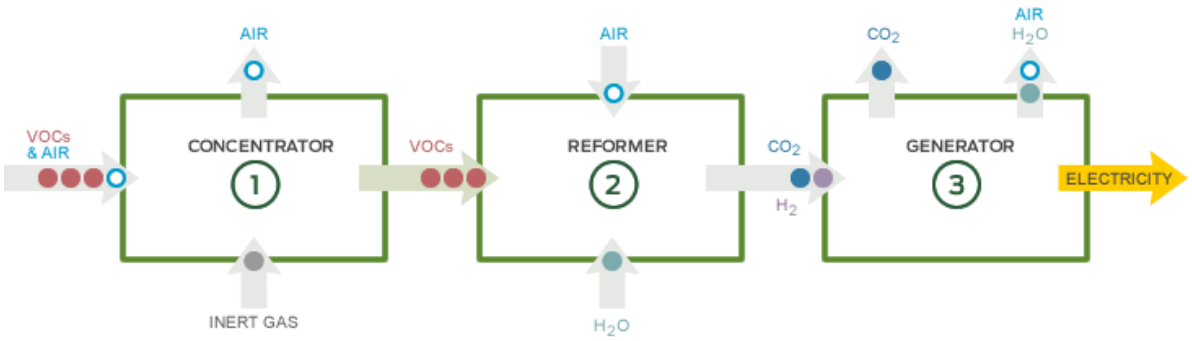
Related Links

This Report

- Operational Energy and Greenhouse Gas Emissions

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 2011, these operations emitted 20.4 grams of VOCs per square meter of surface coated. 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.

In one innovative approach, Ford developed a "fumes-to-fuel" system in partnership with Detroit Edison. Initially tested at the Ford Rouge Center, a paint emissions concentrator was used to concentrate fumes containing VOC emissions from solvent-based paint for use as fuel to generate electricity. The fuel was tested on a solid oxide fuel cell.



Generating electricity from paint fumes

Move over the numbers above to see what happens at each stage.

1. CONCENTRATOR
   Strips air from paint fumes, leaving concentrated volatile organic compounds (VOCs)
2. REFORMER
   Ford-patented process converts VOCs to hydrogen gas
3. GENERATOR
   Uses hydrogen gas as fuel for fuel cell or conventional power plant to make electricity

To further support the research and development efforts on the "fumes-to-fuel" system, in 2008 a research facility was built at our assembly plant in Oakville, Canada, with support from the Canadian government. This site contains a production-scale version of the equipment, including a paint emissions concentrator, a VOC fuel reformer, a 300 kW molten carbonate fuel cell and a 120 kW internal combustion engine. The intent of this technology is to collect a portion of the VOCs from the spray booth exhaust, then super-concentrate the VOCs in the paint emissions concentrator, followed by condensing the VOCs for use as a fuel for either the 120 kW internal combustion engine or as feed to the VOC reformer, which would then be used in the 300 kW molten carbonate fuel cell.

In 2011, the paint emission concentrator at this facility continued to run and generate solvent, and the internal combustion engine continued to be evaluated for long-term performance. In addition, the VOC reformer was started up, generating valuable operating information. Efforts continued with two Canadian universities to help drive the research and development of this innovative technology.

Ford's fumes-to-fuel system, with or without energy generation, has the potential to reduce CO_2 emissions by 80 to 85 percent compared to traditional abatement equipment. A fumes-to-fuel system with energy generation using the fuel cell also has the potential to eliminate nitrogen oxide emissions.

In 2011, Ford introduced 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, 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, motor home and bus industries and other customers who want to use it.

Moreover, 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.

CLIMATE CHANGE AND THE ENVIRONMENT

- Design for Lifecycle Sustainability
- Climate Change
- Greening Our Products
- Greening Our Operations
  - Operational Energy and Greenhouse Gas Emissions
  - Non-CO_2, Facility-Related Emissions
  - Water Use
  - Waste Management
  - Sustainable Land Use and Biodiversity
  - Green Buildings
  - Compliance
  - Remediation
- Data
- Voice: Dr. Rajendra K. Pachauri

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

Home > Climate Change and the Environment > Greening Our Operations > Water Use

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 byproducts include both hazardous and nonhazardous wastes. 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.

In 2011, Ford facilities globally sent approximately 56,000 metric tons of waste to landfill, a reduction of 11.3 percent from 2010. Ford has reduced waste to landfill on a per-vehicle basis by almost 40 percent over the last five years, which reflects our continuing efforts to reduce the amount of landfilled waste associated with vehicle production. In 2011, Ford facilities globally generated approximately 42,000 metric tons of hazardous waste, which is comparable to our 2010 hazardous waste generation levels. We reduced hazardous waste on a per-vehicle basis by 10 percent from 2010 and by 16 percent over the last five years.

The following Ford facilities have achieved zero waste to landfill: the Rawsonville Plant in Michigan; the Cologne, Germany, manufacturing facilities, including the Engine and Vehicle Operations plants, Technology Development Center and Ford Customer Service Division facility; the Saarlouis Body and Assembly Plant in Germany; the Genk Assembly Plant in Belgium; the Chennai Assembly and Engine Plants in India; the Lio Ho Plant in Taiwan; and the JMC Assembly Plant in Nanchang, China.

Our European operations have committed to significantly increase the proportion of waste recycled and reused and to cut landfill waste by 70 percent. That means a reduction in the average landfill waste generated per vehicle to 1.5 kg by 2016 from 5 kg in 2011. This reduction will be on top of the 40 percent reduction in landfill waste Ford of Europe has already achieved since 2007.

We are always seeking ways to further reduce waste throughout our operations. In some cases, we are even able to turn waste directly into a new fuel source. For example, we have developed a Recovered Paint Solids Program through which we collect waste paint, or "overspray," from our paint booths and turn it into a fuel used by local utilities to generate electricity. Using this process, we have recycled 163 tons of paint waste from our Ford Auto Alliance Plant in Flat Rock, Michigan, since early 2010. An estimated 163,000 KWh of energy – enough energy to power 20 residential homes for a year – were produced as a direct result of this program. At the Chicago Assembly Plant and the Michigan Assembly Plant, approximately 174 tons of paint solids were eliminated from landfill and processed as a fuel source in 2011.

In 2012, we installed a solar-powered trash compactor at our Michigan Proving Grounds in Romeo, Michigan. The new solar compactor provides the energy to compress the general waste from the facility into a 42-yard container by an increased capacity of 4:1 compared to the open-top boxes that were previously used. The trash is then sent to an incinerator in southeast Michigan where it is converted into power for the local area residents. The combination of the improved trash compactor and our recent efforts to recycle all of the site's cardboard, paper, wood and plastic, eliminates the need for the Michigan Proving Grounds to dispose of any waste in a landfill.

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 200 acres of Ford-owned land throughout southeast Michigan, which is adorned with sunflowers, wildflowers, prairie plants and other non-turf grass plantings. This landscaping provides habitat for wildlife: for example, fox, wild turkeys and coyote have been spotted on Ford properties. This landscaping reduces mowing and other maintenance 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, which require less water and fertilizer to maintain.

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, 18 sites have been completed and are providing water savings of just over 30 percent. An additional 14 sites will be completed this year, with the remaining 28 sites to be completed over the next three years.

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 2009, Ford's Romeo Engine Plant in Romeo, Michigan, was awarded a Neighborhood Environmental Partners Award from the Michigan Department of Environmental Quality for its work to build wildlife habitat on the plant site. Plant employees have worked hard to preserve and enhance the wildlife habitat available on the site's 141 acres, planting trees and building nest boxes to attract native birds, including bluebirds and screech owls. To promote habitat awareness and increase community participation, the Romeo Engine Plant's wildlife team organizes an annual tree sale and plant exchange, and plant employees organize clean-ups and other activities to celebrate Earth Day.

In February 2010, Ford and Automotive Components Holdings announced the donation of a coastal wetland in Monroe, Michigan, to the U.S. Fish and Wildlife Service. The property, known as Ford Marsh, will add 242 acres to the Detroit River International Wildlife Refuge.

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 operation's "Civic Committee" has been funding work to protect the peninsular pronghorn, an endangered species in Baja, California. This project has used captive breeding and reintroduction into the wild to increase the number of pronghorns. When the program first began, there were only 150 pronghorns in the area. A comprehensive field census is currently underway, but project managers estimate there are now nearly 500. This project has received global attention because these pronghorns are one of the only species that have been successfully reintroduced into the wild and are reproducing naturally in their own habitat. This project is managed by Espacios Naturales y Desarrollo Sustentable, a nonprofit organization, and Comisión Nacional de Areas Naturales Protegidas, the government office that oversees natural protected areas. The project also receives support from Animal Kingdom, the San Diego Zoo and other international wildlife organizations.

Our Mexican operation's civic committee is also funding the "Mexican Natural Reserves: A Natural Solution for Climate Change," a communications campaign to raise awareness about the more than 150 natural protected areas in Mexico. The campaign is intended to foster understanding of the important services that these natural areas provide to communities, including air and water purification, food and wildlife habitat. So far, this project has produced several videos of natural areas shown in cinemas, airline TV programs, buses, airports and other locations.

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. 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 healthful 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, Michigan. In 2012, RIC will enter 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 2013.

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,

Related Links

This Report

- Dealers

through the use of prototype standards, allows organizations to simplify the LEED documentation for multiple buildings or spaces of a similar type or management.

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.

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 the Dealers section.

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 special energy-saving features. The new 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, MI. 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.

Compliance

Manufacturing Plants Notices of Violation

Ford received four notices of violation (NOV) from government agencies in 2011. Two of the NOVs received were in the U.S., one was in Canada, and one was in Taiwan. 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 in noncompliance or received a penalty.

Offsite Spills

In 2011, no offsite spills occurred at Ford manufacturing facilities.

Fines and Penalties Paid

In 2011, Ford paid $330 in fines and penalties globally pertaining to environmental matters in our facilities.

Remediation

Ringwood Miners 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 used for decades for the legal and illegal disposal of a wide variety of wastes by the Borough of Ringwood and other parties. 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 (AOC) 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 2013.

CLIMATE CHANGE AND THE ENVIRONMENT

- Design for Lifecycle Sustainability
- Climate Change
- Greening Our Products
- Greening Our Operations
- Data
  - Fuel Economy and CO_2 Emissions
  - Tailpipe Emissions
  - Operational Energy Use and CO_2 Emissions
  - Emissions (VOC and Other)
  - Waste
- Voice: Dr. Rajendra K. Pachauri

Data

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- Ford U.S. Corporate Average Fuel Economy
- Ford U.S. CO_2 Tailpipe Emissions per Vehicle (Combined Car and Truck Fleet Average CO_2 Emissions)
- Ford Europe CO_2 Tailpipe Emissions per Vehicle

Tailpipe Emissions

- Ford U.S. Average NOx Emissions
- Ford U.S. Average NMOG Emissions
- Ford U.S. Average Vehicle Emissions

Operational Energy Use and CO_2 Emissions

- Worldwide Facility Energy Consumption
- Worldwide Facility Energy Consumption per Vehicle
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- Energy Efficiency Index

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- North America Volatile Organic Compounds Released by Assembly Facilities
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- Regional Hazardous Waste Generation
- Hazardous Waste Generation per Vehicle

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Fuel Economy and CO_2 Emissions

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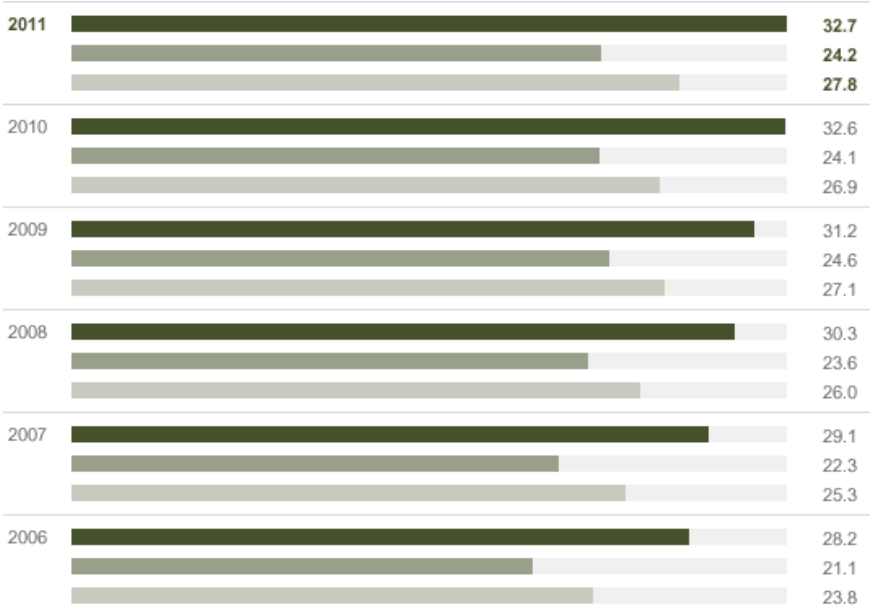
A. Ford U.S. Corporate Average Fuel Economy

Miles per gallon



	2006	2007	2008	2009	2010	2011
Cars (domestic and import)	28.2	29.1	30.3	31.2	32.6	32.7
Trucks	21.1	22.3	23.6	24.6	24.1	24.2
Combined car and truck fleet	23.8	25.3	26.0	27.1	26.9	27.8

Reported to regulatory authorities

Related Links

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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

2006	2007	2008	2009	2010	2011
371	352	340	326	329	318

Notes to Data

Improvement is reflected in decreasing grams per mile.

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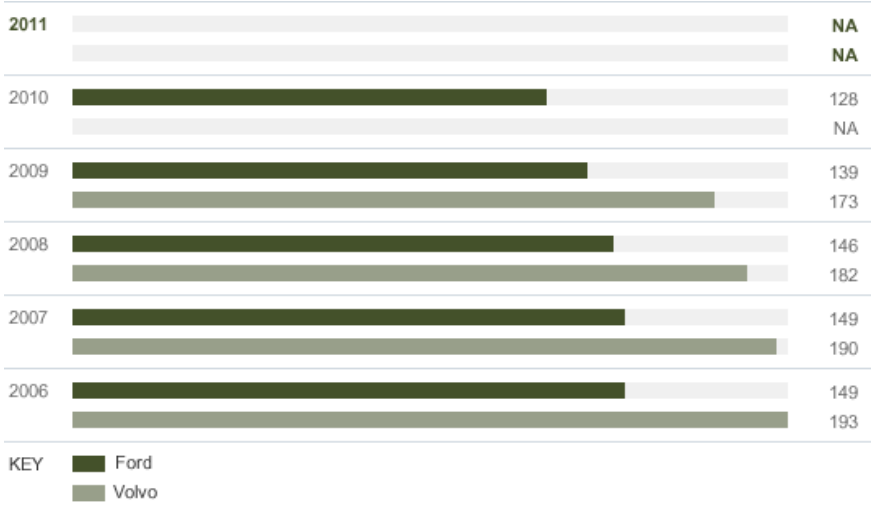
C. Ford Europe CO_2 Tailpipe Emissions per Vehicle

Grams per kilometer



	2006	2007	2008	2009	2010	2011
Ford	149	149	146	139	128	NA
Volvo	193	190	182	173	NA	NA

Notes to Data

The 2011 calendar-year fleet-wide CO_2 emissions data for our European fleet will be available in November 2012. Improvement is reflected in decreasing grams per kilometer. Based on production data for European markets. European and U.S. fleet CO_2 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 CO_2 emissions as a percent of a 1995 base to reporting actual fleet average CO_2 emissions, to parallel our reporting for other regions.

Analysis

In Europe, we have reduced the average CO_2 emissions of 2010 model year vehicles by 8.1 percent compared to the 2006 model year (not including Volvo). We have achieved this through the introduction of a variety of innovations, such as advanced common rail diesel engines available across the European model range – including the ECOnetic range of low-CO_2 vehicles – and the use of lightweight materials.

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Tailpipe Emissions

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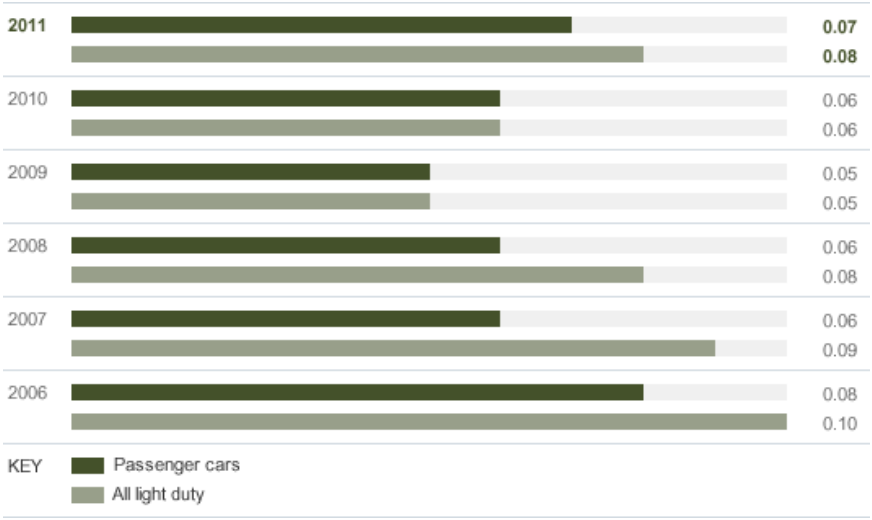
A. Ford U.S. Average NOx Emissions

Grams per mile



	2006	2007	2008	2009	2010	2011
Passenger cars	0.08	0.06	0.06	0.05	0.06	0.07
All light duty	0.10	0.09	0.08	0.05	0.06	0.08

Reported to regulatory authorities (EPA)

Analysis

Ford strives to meet regulatory emissions requirements while minimizing the cost to the Company and our customers. As a result, our fleet average NOx emissions have increased while still meeting the regulatory requirements and providing value to our customers.

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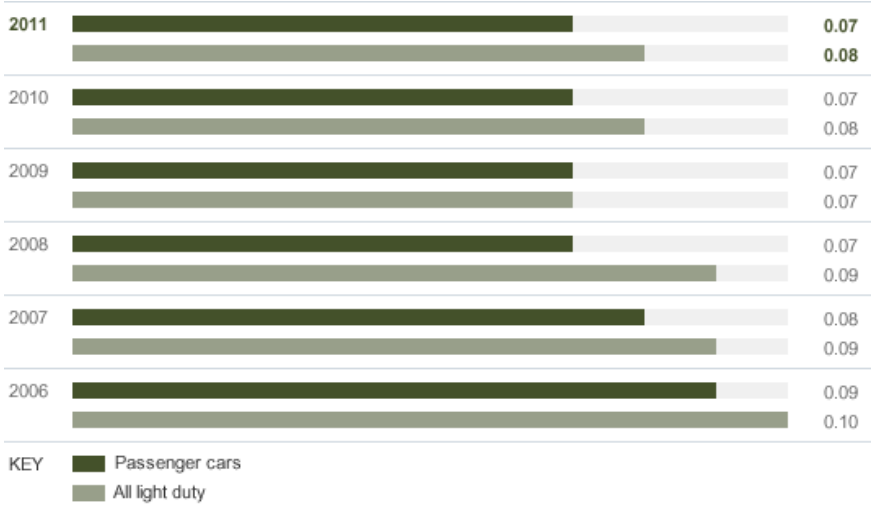
B. Ford U.S. Average NMOG Emissions

Grams per mile



	2006	2007	2008	2009	2010	2011
Passenger cars	0.09	0.08	0.07	0.07	0.07	0.07
All light duty	0.10	0.09	0.09	0.07	0.08	0.08

Reported to regulatory authorities (EPA)

Notes to Data

NMOG = Non-Methane Organic Gases

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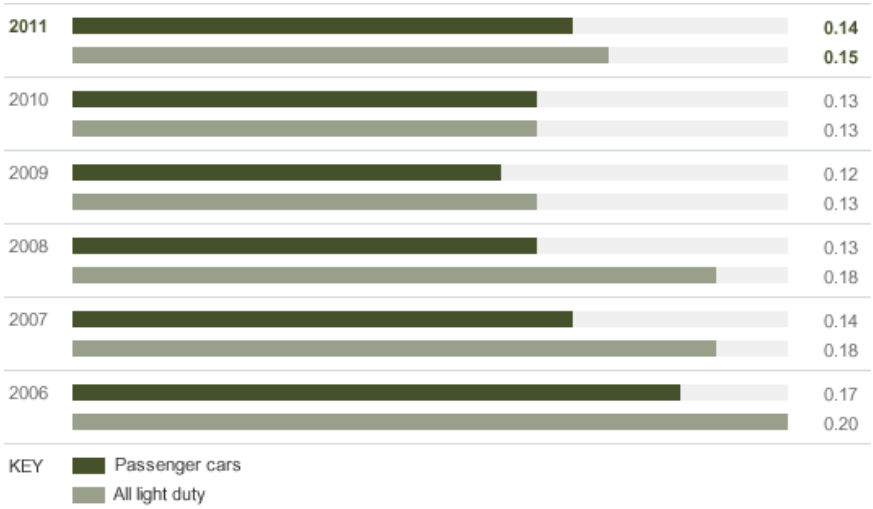
C. Ford U.S. Average Vehicle Emissions

Grams per mile



	2006	2007	2008	2009	2010	2011
Passenger cars	0.17	0.14	0.13	0.12	0.13	0.14
All light duty	0.20	0.18	0.18	0.13	0.13	0.15

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.

Analysis

Ford strives to meet regulatory emissions requirements while minimizing the cost to the Company and our customers. As a result, our fleet average NOx emissions, a component of our average vehicle emissions, have increased while still meeting the regulatory requirements and providing value to our customers.

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Operational Energy Use and CO_2 Emissions

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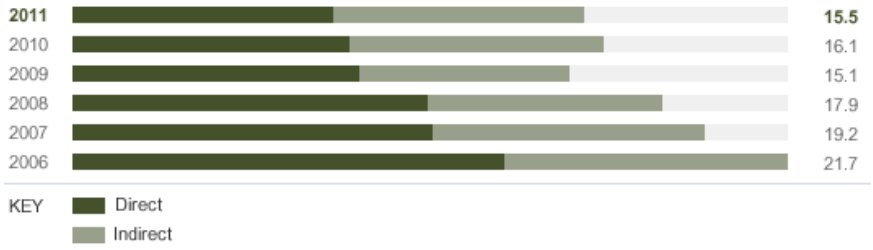
A. Worldwide Facility Energy Consumption

Billion kilowatt hours



	2006	2007	2008	2009	2010	2011
Direct	13.1	10.9	10.8	8.7	8.4	7.9
Indirect	8.6	8.3	7.1	6.4	7.7	7.6
Total	21.7	19.2	17.9	15.1	16.1	15.5

Data managed through the Global Emissions Manager database

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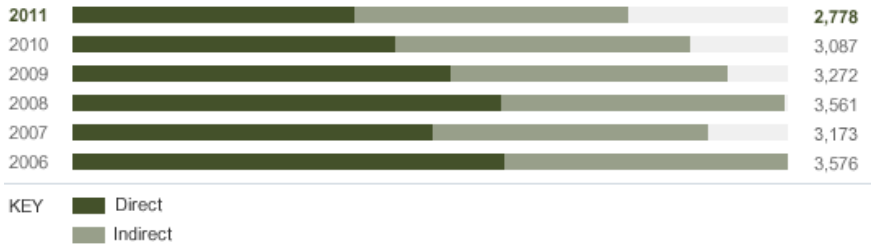
B. Worldwide Facility Energy Consumption per Vehicle

Kilowatt hours per vehicle



	2006	2007	2008	2009	2010	2011
Direct	2,161	1,804	2,142	1,891	1,609	1,408
Indirect	1,415	1,369	1,419	1,381	1,478	1,370
Total	3,576	3,173	3,561	3,272	3,087	2,778

Data managed through the Global Emissions Manager database

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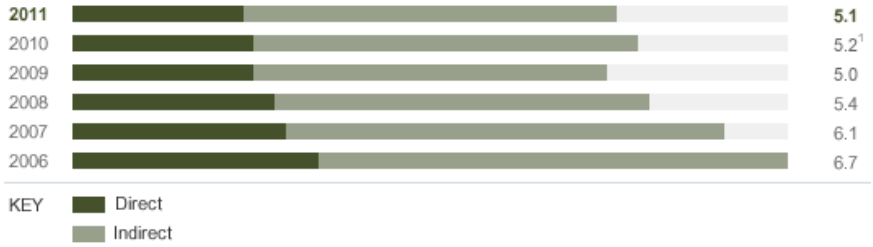
C. Worldwide Facility CO_2 Emissions

Million metric tons



	2006	2007	2008	2009	2010	2011
Direct	2.3	2.0	1.9	1.7	1.7	1.6
Indirect	4.4	4.1	3.5	3.3	3.6	3.5
Total	6.7	6.1	5.4	5.0	5.2[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 2010 worldwide facility CO_2 emissions for 2010 because the universe of facilities used to calculate worldwide facility CO_2 emissions was modified.
2. Nearly two-thirds of Ford's global facility greenhouse gas (GHG) emissions are third-party verified. All of Ford's North American GHG emissions data from 1998 to 2010 were externally verified by FINRA, the auditors of the NASDAQ stock exchange, as part of membership in the Chicago Climate Exchange. 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. 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 World Resources Institute's GHG Protocol. European

facilities are verified against the EU-ETS rules and guidelines.

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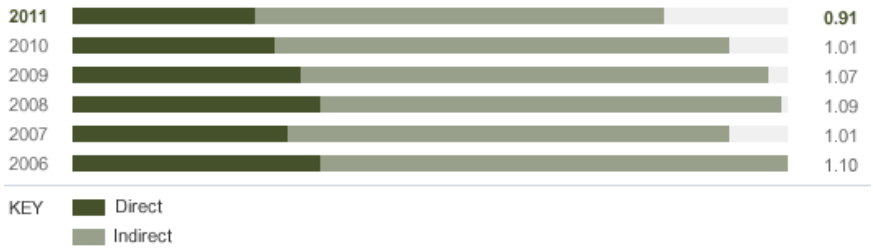
D. Worldwide Facility CO_2 Emissions per Vehicle

Metric tons per vehicle



	2006	2007	2008	2009	2010	2011
Direct	0.38	0.33	0.38	0.35	0.31	0.28
Indirect	0.72	0.68	0.71	0.72	0.70	0.63
Total	1.10	1.01	1.09	1.07	1.01	0.91

Data managed through the Global Emissions Manager database

Analysis

CO_2 emissions per vehicle declined for the fourth year, reflecting our focus on improving the energy efficiency of our operations. We are working 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

2006	2007	2008	2009	2010	2011
NA	4.3	11.7	18.3	14.4	2.6

Notes to Data

The North American 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 against our annual 3 percent energy-efficiency target. A year 2000 baseline was used through 2006; the baseline was reset to year 2010 starting in 2011. The year

2011 improvement indexed against the year 2010 baseline was 2.6, indicating a 2.6 percent improvement in energy efficiency from 2011 to 2010. Higher percentage reflects improvement.

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Emissions (VOC and Other)

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A. North America Volatile Organic Compounds Released by Assembly Facilities

2011 target = 23 g/sq meter or less

Grams per square meter of surface coated

2006	2007	2008	2009	2010	2011
24	24	24	21	22	20

Data managed through the Global Emissions Manager database

Analysis

VOC emissions in North America decreased by 5 percent between 2010 and 2011; 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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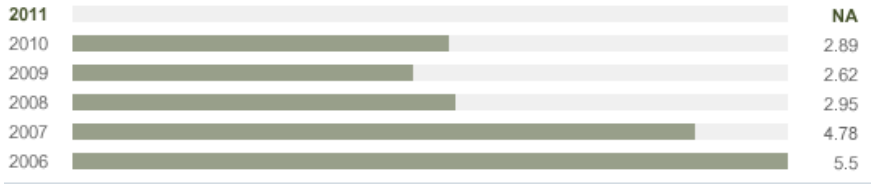
B. Ford U.S. TRI Releases

Million pounds



2006	2007	2008	2009	2010	2011
5.5	4.78	2.95	2.62	2.89	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 2009 to 2010 due to increases in production. However, our U.S. TRI releases went down on a per-vehicle basis from 2009 to 2010, reflecting better pollutant release performance when results are adjusted for production levels.

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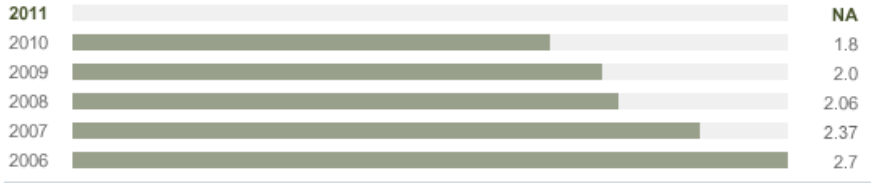
C. Ford U.S. TRI Releases per Vehicle

Pounds per vehicle



2006	2007	2008	2009	2010	2011
2.7	2.37	2.06	2.0	1.8	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 2009 to 2010, the fifth year in a row we have reduced these emissions. These reductions were achieved through material and process changes.

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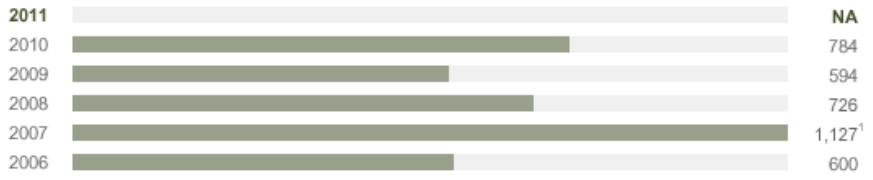
D. Ford Canada NPRI Releases

Metric tonnes



2006	2007	2008	2009	2010	2011
600	1,127[1]	726	594	784	NA

Reported to regulatory authorities (Environment Canada)

Notes to Data

1. This figure was restated 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 overall total Canada National Pollutant Release Inventory increased from 2009 to 2010 due to an increase in production. However, our Canadian NPRI went down on a per-vehicle basis from 2009 to 2010, reflecting better pollutant release performance when results are adjusted for production levels.

Related Links

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E. Ford Canada NPRI Releases per Vehicle

Metric tonnes per vehicle

2006	2007	2008	2009	2010	2011
0.0029	0.0033[2]	0.0024	0.0026[1]	0.0024	NA

Notes to Data

1. This figure was restated due to an error in the vehicle production figure.
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 2009 to 2010. These reductions were achieved through material and process changes.

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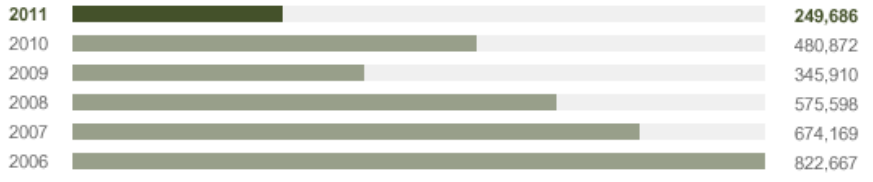
F. Australia National Pollutant Inventory Releases (Total Air Emissions)

Kilograms per year



2006	2007	2008	2009	2010	2011
822,667	674,169	575,598	345,910	480,872	249,686

Reported to regulatory authorities (NPI)

Notes to Data

Releases reported under the Australian National Pollutant Inventory (ANPI) 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 ANPI releases increased from 2009 to 2010 due to an increase in production. However, these releases decreased from 2010 to 2011 due to material and process changes.

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DATA

Waste

DATA ON THIS PAGE

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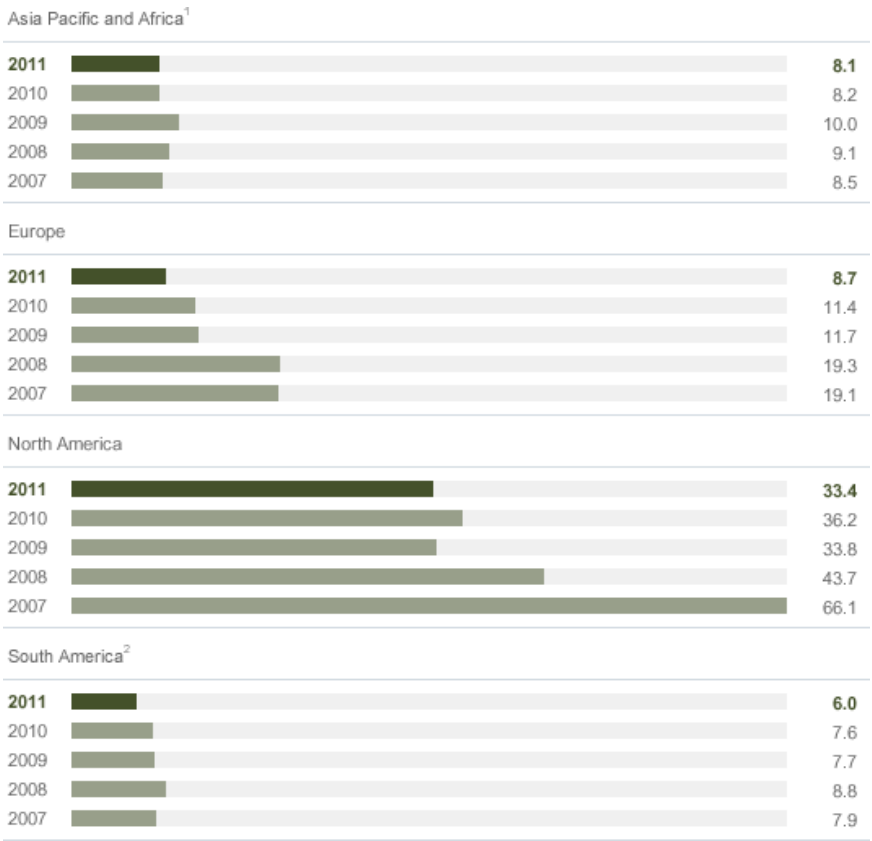
A. Regional Waste to Landfill

Million kilograms



	2007	2008	2009	2010	2011
Asia Pacific and Africa[1]	8.5	9.1	10.0	8.2	8.1
Europe	19.1	19.3	11.7	11.4	8.7
North America	66.1	43.7	33.8	36.2	33.4
South America[2]	7.9	8.8	7.7	7.6	6.0

Data managed through the Global Emissions Manager database

Notes to Data

1. Waste-to-landfill data was restated for all years 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 for years 2007–2011.
2. Waste-to-landfill data was restated for all years because casting sands (a type of waste) associated with the 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, that produces the Ford Mustang, is included beginning in 2009.

Related Links

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- Waste Management

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B. Waste to Landfill per Vehicle

Kilograms

2007	2008	2009	2010	2011
17.0	15.6	15.2	12.8	10.3

Data managed through the Global Emissions Manager database

Notes to Data

Waste-to-landfill 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 2011, we reduced waste to landfill on a per-vehicle basis by about 19.5 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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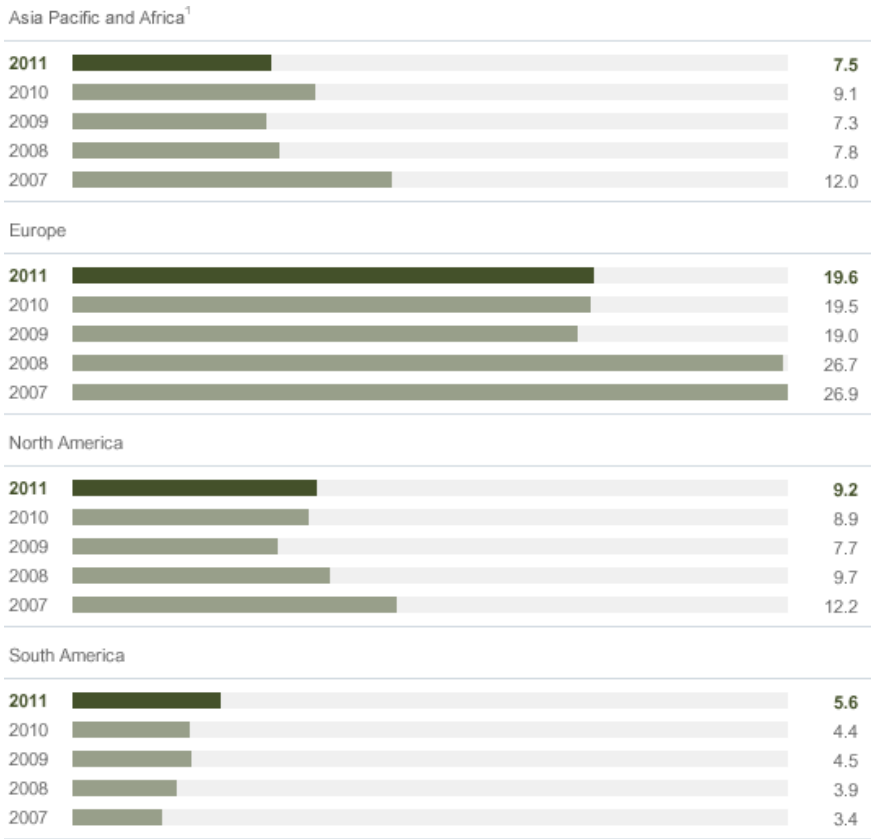
C. Regional Hazardous Waste Generation

Million kilograms



	2007	2008	2009	2010	2011
Asia Pacific and Africa[1]	12.0	7.8	7.3	9.1	7.5
Europe	26.9	26.7	19.0	19.5	19.6
North America	12.2	9.7	7.7	8.9	9.2
South America	3.4	3.9	4.5	4.4	5.6

Data managed through the Global Emissions Manager database

Notes to Data

1. These figures were restated due to corrections in the data.

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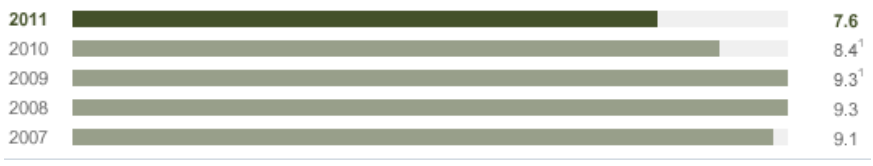
D. Hazardous Waste Generation per Vehicle

Kilograms



2007	2008	2009	2010	2011
9.1	9.3	9.3[1]	8.4[1]	7.6

Data managed through the Global Emissions Manager database

Notes to Data

1. These figures were restated due to corrections in the data.

Analysis

In 2011, we continued a four-year improvement trend by reducing hazardous waste on a per-vehicle basis by 9.5 percent.

Related Links

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- Waste Management

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CLIMATE CHANGE AND THE ENVIRONMENT

- Design for Lifecycle Sustainability
- Climate Change
- Greening Our Products
- Greening Our Operations
- Data
- Voice: Dr. Rajendra K. Pachauri

Dr. Rajendra K. Pachauri

Chairman, Intergovernmental Panel on Climate Change and
Director-General, The Energy and Resources Institute
2007 Nobel Peace Prize Co-Winner

As awareness of climate change spreads, more people will question the science behind it. We in the scientific community welcome such scrutiny, as science and knowledge thrive on debate, discussion and regular questioning.

That said, we do have substantial evidence to show that human actions are affecting the climate of this planet, and the impacts are becoming ever-more worrying. Human society must take the subject of climate change seriously, because there are enormous implications for the environment, for society and for our overall global economies. Yet despite my concerns, I feel reasonably optimistic that society will have the wisdom to act. If we are empowered with knowledge, and if we understand what is at stake, then we will find solutions.

The United Nations Framework Convention on Climate Change has set an aspirational goal of limiting the average global temperature increase this century to 2 degrees Celsius. However, our scientific assessments show that even a 2-degree temperature rise would result in significant impacts, affecting a large number of species and increasing sea levels by 0.4 to 1.4 meters due to thermal expansion alone, which is a serious problem for several parts of the world. And that doesn't include rising sea levels as a result of melting polar ice.

The risks are very serious, and we've got nowhere to live but on this planet. In the short term, extreme weather events, such as heavy rains and snowfalls, will have major impacts on business and industry, and on the rest of society.

We also have established that heat waves are increasing in frequency and intensity. If we don't stabilize the earth's atmosphere, heat waves that currently take place once in 20 years will occur once every two years by the end of this century. Think of the extreme heat in Europe in 2003, when an estimated 40,000 people died. Of course, a single event cannot be linked to climate change, but our findings are on the basis of extensive scientific evidence.

The world is inevitably going to move to a low-carbon, low-greenhouse-gas (GHG) intensive future. Companies that can reduce the use of fossil fuels and can foresee the technologies, devices and products that will be relevant to the future will emerge as winners.

The auto industry is one sector that can become much more efficient in the use of energy, which is likely one of the drivers behind the trend toward electric vehicles. Overall, the transportation sector has accounted for about one-quarter of the GHG emissions that we have in the world today. Every step we can take to improve the efficiency of transportation will contribute to GHG reductions.

In India and China, we will continue to see automotive sales grow, but cars will remain an elite option limited to the rich and the middle class. Poor people still must rely on public transportation, which also needs to be "greener" than what is available today.

Agriculture is another sector that will be particularly altered by climate change. It's clear that beyond a certain global rise in temperature, the net effect will be a reduction in crop yields. And that's a huge concern when we're expecting the population to rise from about 7 billion people today to about 9 billion by mid-century. We have estimated that, in some African nations, we could see a 50 percent decline in agricultural yield by 2020 as a result of climate variability and climate change.

Related Links

External Websites

- 2007 Nobel Peace Prize
- United Nations Framework Convention on Climate Change

Some of the impacts of climate change – such as rising sea levels and increasing water scarcity in some parts of the world – are already inevitable. This means we'll have to find ways as a society to adapt. But as we adapt, we also must focus on how we can stabilize the concentration of GHGs in the atmosphere.

Human society has the ability and the capacity to bring about major technological changes and innovations. Many of the technologies required to cut emissions significantly are already available or are in the process of being commercialized. We need a set of policies that will provide the right market signals on both the supply side and the consumption side. For example, one of the most effective ways to bring about change would be to put a price on carbon.

There's an Indian philosophy that regards the whole universe as "one family." I believe this approach symbolizes a very practical reality in the context of climate change. We are living in a globalized world, and what happens in one part of this planet has major implications for other parts.

When we embarked on industrialization 150 years ago, we couldn't possibly have known about the impact of GHGs. Now we do, and it's time for us to wake up and realize that we're all in this together. Climate change is not something that's science fiction. It's a reality with a very strong and sound scientific basis.

Water

Water availability, quality and access are critical global issues that extend well beyond environmental concerns. 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.

With water pollution increasing and the world's population growing, access to clean water is growing ever more uncertain. Ford Motor Company can play a role in developing and implementing solutions to the global water challenge.

Water conservation is an integral part of Ford's sustainability strategy, alongside greenhouse gas reduction. 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.

In recent years, we have been refining our water strategy, which examines our water use from both an environmental and a social perspective. We prioritize facility water reductions based on local needs, while using a global, company-wide approach. To better understand our impacts, we have been assessing our water footprint throughout the lifecycle of our vehicles. We also have been taking a close look at which areas of Ford operations are located in water-stressed regions. And, we're participating in social programs that provide better access to water in India and parts of Africa and Central America.

Our water strategy actions – which include a new, 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]

Water Efficiency

We have developed additional year-over-year water-efficiency targets as part of our annual environmental business planning process.

Water Achievement

We reduced water use per vehicle by 8 percent from 2010 to 2011.

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 is integrated into our overall Code of Human Rights, Basic Working Conditions and Corporate Responsibility.

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. Between 2000 and 2011, we reduced our global water use by 60 percent, or approximately 10 billion gallons (see graphic below). That's equivalent to the water used annually by 100,000 average U.S. residences, based on figures from the U.S. Environmental Protection Agency. Over the same period, water use per vehicle decreased by 49 percent.

Related Links

This Report

- Greening Our Operations

10 billion gallons of water is:

amount of water that flows over Niagara Falls in **3.7 hours**

1 billion five-minute showers*

over **15,000** Olympic pools*

250 million loads of laundry**

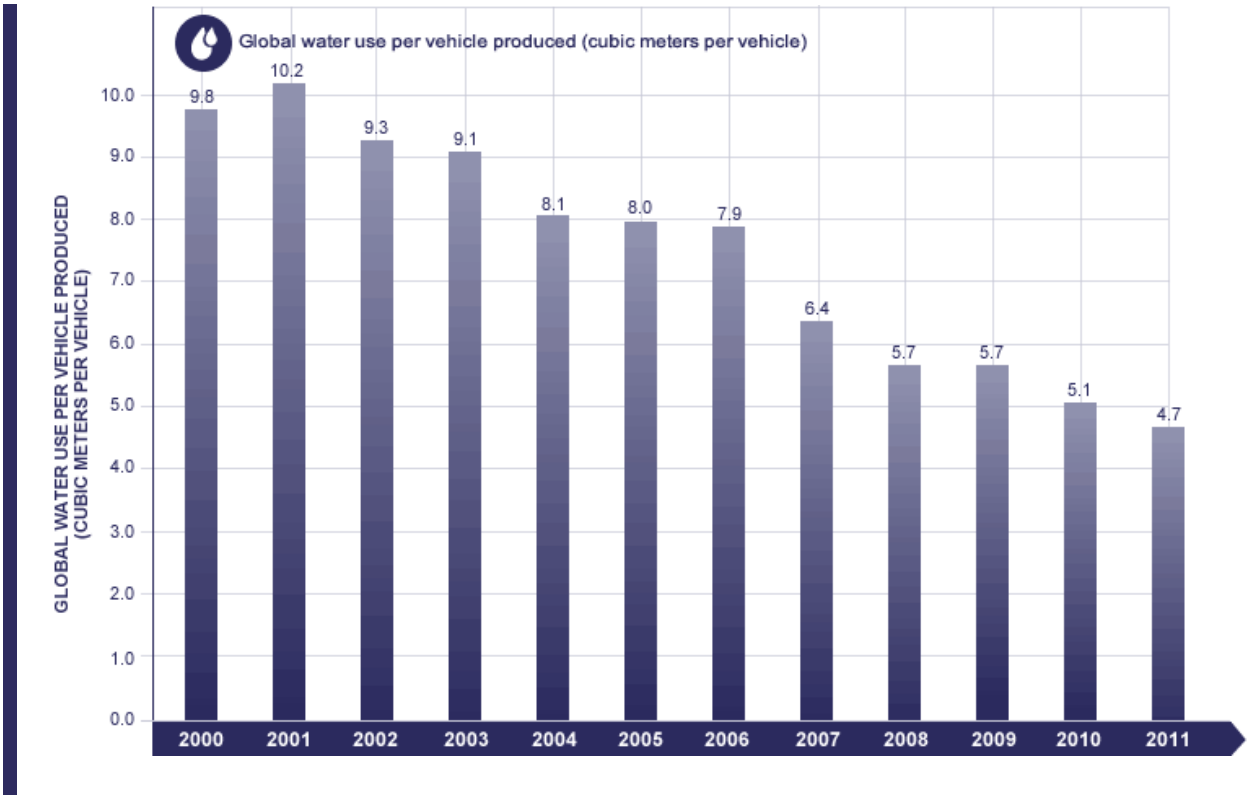
119 supertankers

* U.S. Environmental Protection Agency ** California Energy Commission

In late 2011, we announced a goal to build on our water-reduction successes to date. We're now aiming to cut the amount of water used to make each vehicle by 30 percent globally by 2015, compared to a 2009 baseline. This includes continuing to develop year-over-year efficiency targets as part of our annual environmental business planning process. For 2012, for example, we have set a target of a 5 percent water-use reduction per vehicle. If we meet our 30 percent reduction goal by 2015, we will have decreased the amount of water used to make a vehicle from approximately 9.8 cubic meters in 2000 to approximately 4.0 cubic meters in 2015.

We report on our progress toward this goal not only in this annual Sustainability Report, but through our participation in the Carbon Disclosure Project's Water Disclosure, which we joined in 2010 – the first automaker to do so.

We're 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.


Global water use per vehicle produced (cubic meters per vehicle)
GLOBAL WATER USE PER VEHICLE PRODUCED (CUBIC METERS PER VEHICLE)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
9.8
10.2
9.3
9.1
8.1
8.0
7.9
6.4
5.7
5.7
5.1
4.7
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

Investing in New Technologies

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 stormwater 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.

In recent years, we have taken a broad range of actions that have helped us minimize our water footprint. For example, we 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've employed an innovative parts-washing system to reduce wastewater and cut energy consumption. We have also 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 can save more than 280,000 gallons of water per year.

Actions like these don't attract many headlines – but they make an impact. And they reflect our commitment to reduce our environmental footprint.

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 uncontrolled water loss and cooling tower optimization, at every manufacturing site worldwide.

As we continue to reduce our water footprint, we are implementing a more global approach that cascades best practices from our own plants – and from other industries. We have been benchmarking our peers and other manufacturers to look for water-saving techniques that can be adapted to Ford locations. We are also investigating how to better monitor water use and integrate new technologies into facility upgrades.

In addition, through our ongoing water footprinting work, we have realized that the amount of water we use in office buildings and labs can be significant. Therefore, we're examining how to reduce our water use in these facilities, too.

Related Links

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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 need. Already, 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.

The cost of using water is expected to continue to increase in the coming decades. For a manufacturing company like ours, this would mean higher operating costs. Already, in some locations, rate increases from 2000 to 2011 outpaced water reductions, and our costs will continue to rise if we don't make further improvements.

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. Suppliers within water-stressed areas will also be affected. Working on solutions helps us to secure a "license to operate" in diverse global locations and can enhance our reputation in local communities.

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 assessing 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.

Tracking and reporting our water usage helps us to manage water-related risks and, as a result, allows us to play a significant role in developing and implementing solutions to the water challenge going forward. We see opportunities for:

- Reduced manufacturing costs through process improvements and new technologies that better track our water usage and enable us to target improvements
- Improved water efficiency

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.

Related Links

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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.

Related Links

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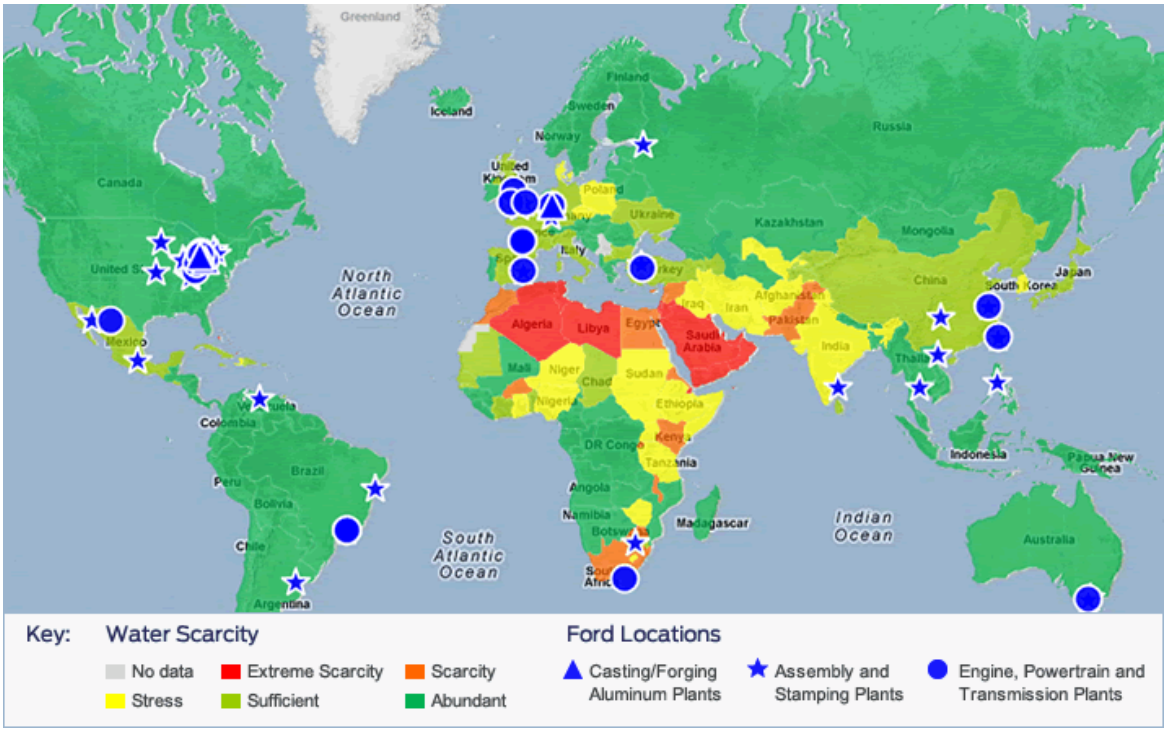
- Greening Our Operations

Our facilities in Mexico are located in water-stressed regions; our manufacturing facility in Cuautitlan, Mexico, for example, is already subject to water-withdrawal limitations. Several of our facilities in our Asia Pacific and Africa region are in regions that are currently water-stressed, or are expected to be in the near future. Approximately 26 percent of our operations are projected to be in water-scarce regions (defined as areas of extreme scarcity or scarcity) by 2025, according to our analysis using the World Business Council for Sustainable Development Global Water Tool. (See map below.)

At the vast majority of our manufacturing locations, Ford is not the only entity withdrawing water from a source, making it impossible to determine the impact of our operations.

Ford Operations: 2025 Projected Annual Renewable Water Supply per Person



wbcsd

Ford used the World Business Council for Sustainable Development's (WBCSD) Global Water Tool 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 Agricultural 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 reviewed our water-related progress in 2011.

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 (ICCR), the U.N. Global Compact, the U.S. State Department and the Global Water Challenge (GWC) – to gain a better appreciation of outside stakeholder perspectives.

In 2012, we intend to sign the United Nations' CEO Water Mandate, a public/private initiative designed to assist companies in the development, implementation and disclosure of water sustainability policies and practices. And to further increase our engagement around global water issues, we recently became a founding partner of the U.S. Water Partnership.

Our water strategy actions work toward several objectives, including the following:

- 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

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 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're investing in community water stewardship projects in India, with plans to make similar investments in Mexico, China, South Africa and elsewhere.

We are committed to mobilizing opportunities for communities in the developing world through clean water. We have joined the Global Water Coalition (GWC), a group of leading organizations committed to achieving universal access to safe drinking water, sanitation and hygiene. Through the GWC, Ford and others are funding water and sanitation programs in Africa and Central America. The GWC is also launching a "Women for Water" campaign to address critical water needs. In the developing world, the burden of collecting water falls primarily upon women and girls, who often must spend several hours a day carrying water.

Another area where we are focusing is education. Ford India, for example, 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 2011, for example, the staff at the Ghana Mechanical Lloyd Company, Ltd. dealership paid for a new water tank for the students and staff of Konkord Academy, a school for children with mental and physical disabilities. And in Honduras, the Yude Canahuati dealership replaced the aging wastewater pipes at the Pilar Salinas School for the Blind to improve drainage, reduce environmental pollution and eliminate a health hazard. (See the Communities section for more on Ford's volunteer programs.)

Students and staff of Konkord Academy, a school for children with mental and physical disabilities in Ghana, where a Ford dealership paid for a new water tank

Related Links

This Report

- Communities
- Ford Volunteer Corps
- Greening Our Operations

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 recently conducted a literature survey to estimate the water footprint of a typical light-duty vehicle in the U.S. The analysis 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.

Related Links

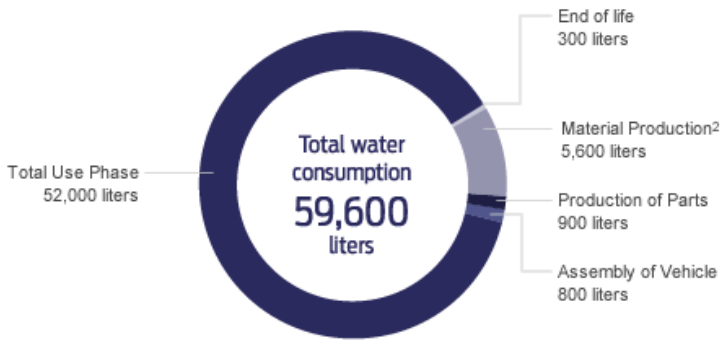
This Report

- Greening Our Products

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 different 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 nonstandardized 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%

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.

Georgia Tech is also helping us conduct research on the water intensity of the production of biofuels and battery materials, such as lithium. And, researchers there are helping us identify the best manufacturing technologies to improve our stationary water use.

Data

DATA ON THIS PAGE

View all data on this page as charts | tables

A. Global Water Use per Vehicle Produced

Cubic meters per vehicle produced

2006	2007	2008	2009	2010	2011
7.9	6.4	5.7	5.7	5.1	4.7

Data managed through the Global Emissions Manager database

Notes to Data

Data has been revised to reflect acquisitions and divestitures of facilities.

Related Links

In This Report:

- Progress in Reducing Water Use

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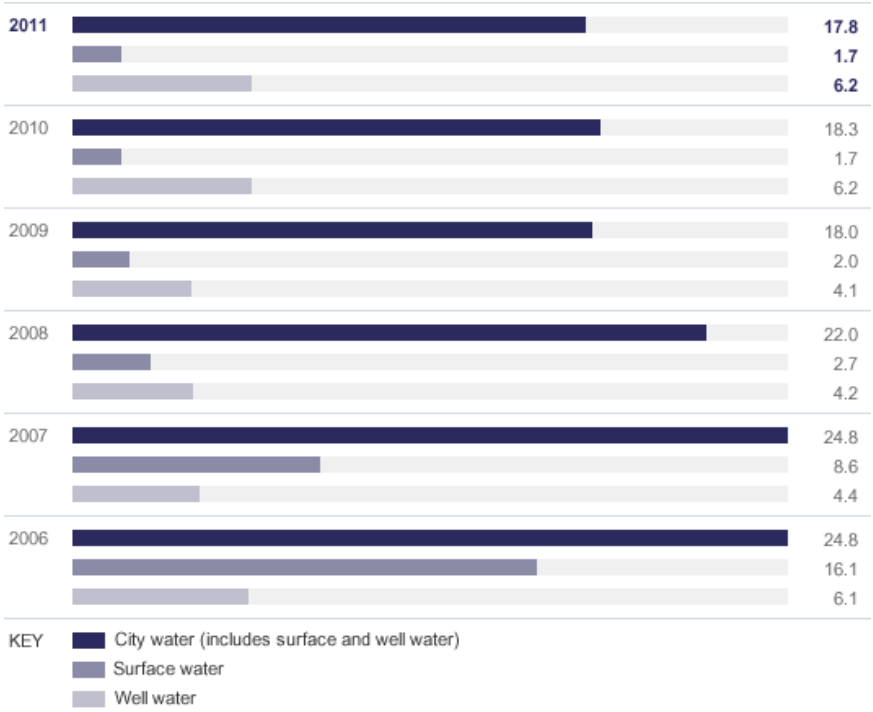
B. Global Water Use by Source

Million cubic meters



	2006	2007	2008	2009	2010	2011
City water (includes surface and well water)	24.8	24.8	22.0	18.0	18.3	17.8
Surface water	16.1	8.6	2.7	2.0	1.7	1.7
Well water	6.1	4.4	4.2	4.1	6.2	6.2

Data managed through the Global Emissions Manager database

Notes to Data

Data has been revised to reflect acquisitions and divestitures of facilities.

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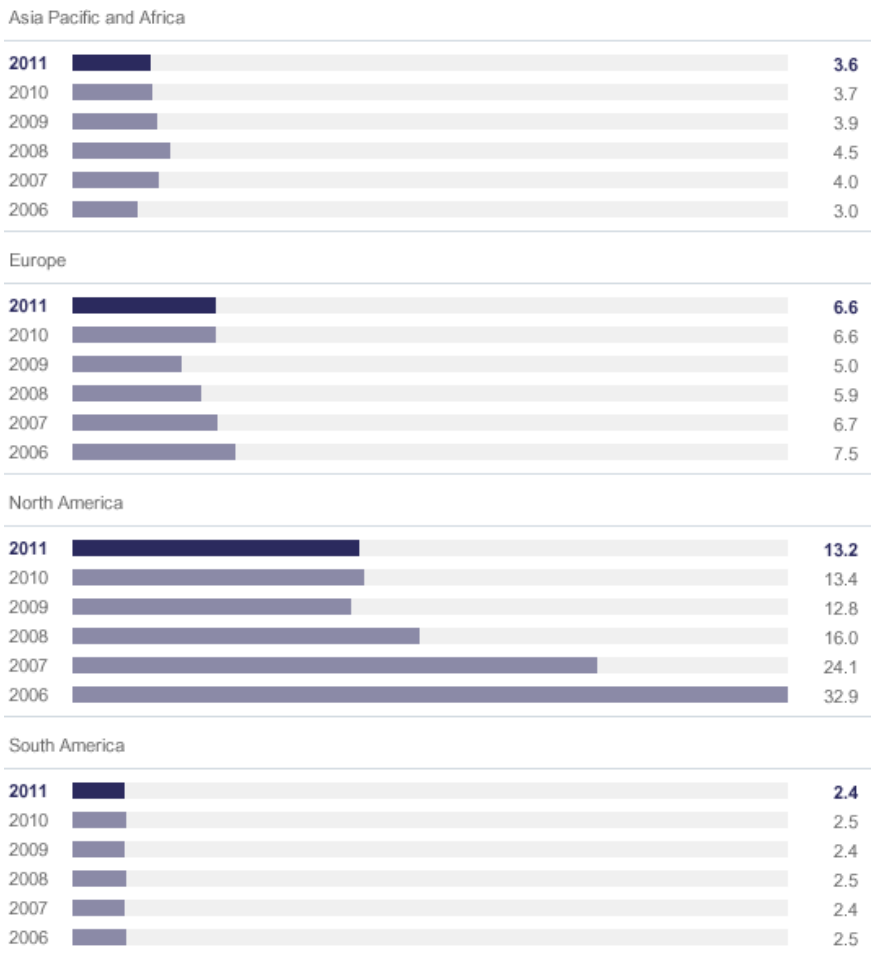
C. Regional Water Use

Million cubic meters



	2006	2007	2008	2009	2010	2011
Asia Pacific and Africa	3.0	4.0	4.5	3.9	3.7	3.6
Europe	7.5	6.7	5.9	5.0	6.6	6.6
North America	32.9	24.1	16.0	12.8	13.4	13.2
South America	2.5	2.4	2.5	2.4	2.5	2.4

Data managed through the Global Emissions Manager database

Notes to Data

Data has been revised to reflect acquisitions and divestitures of facilities.

Related Links

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- Progress in Reducing Water Use

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Case Study: Zero Water Discharge in Chennai, India

The Chennai region of India has been likened to “the Detroit of Asia,” thanks to the large number of automotive and vehicle component companies that operate there. As a manufacturing hub, the region is also home to dozens of multinational firms in computers, technology and healthcare, to name a few other prominent industries.

Ford’s production plant in Chennai, India

With an estimated population of more than 9 million, the metropolitan Chennai area ranks among the top-four most populous regions in India – and can be counted among the 40 largest metropolitan areas in the world.

But growing industry and burgeoning population have put considerable stresses on a part of the world that already suffered from chronic water scarcity. And the demand for water has quickly outpaced the limited supplies.

Like other auto companies, Ford has been expanding our operations and production in Chennai in an effort to serve one of the world’s fastest-growing auto markets. One challenge, however, has been finding ways to do so without adding to the water burdens of the region.

With pressures on water supplies expected to continue, government authorities have been requiring manufacturers to achieve zero liquid discharge in their operations, as a way to encourage them to reuse water and reduce their overall water use. Our Ford assembly plant in Maraimalai Nagar, 45 kilometers southwest of Chennai, was able to achieve that goal, thanks to an innovative process that treats the plant’s wastewater and recycles it back into our manufacturing processes. Reaching the zero-discharge goal has helped us understand and gain experience with new technologies that are likely to become increasingly important as water scarcity and quality issues grow more urgent around the globe. (Our recently updated water strategy focuses on regions – like Chennai – where water is scarce).

To reach zero liquid discharge, Ford India implemented a combination of physical, chemical and biological treatment operations. Wastewater streams from the assembly and engine plants are individually pretreated before being mixed with sanitary and cafeteria wastewaters. Following biological treatment, the stream passes through media filtration and activated carbon before it is ultrafiltered. This final stream is sent to a three-stage reverse-osmosis system, where it is separated into an ultrapure water phase and highly concentrated brine stage. The brine is distilled until it results in a solid salt, which is disposed of as waste.

Even before our recent upgrades, we were treating nonindustrial wastewater, such as toilet and sink water, for reuse in toilets. Overall, the plant’s water usage is extremely low – the lowest among all of Ford’s plants. In 2011, the plant’s average usage was 1.15 kiloliters (or 1.15 cubic meters) per vehicle.

Chennai Assembly Plant Facts

- Recent investment: $500 million
- Annual production capacity: 200,000 units
- Year opened: 1996
- Year renovated: 2010
- Total employment: about 2,000

Related Links

This Report

- Asia Pacific Africa
- Greening Our Operations

- Products: Ford Fusion, Ikon, Fiesta and Endeavour
- Site size: 350 acres
- Per vehicle water reduction: 72 percent per vehicle between 2007 and 2011
- Waste: Zero solid waste facility
- Suppliers on site: Visteon Corporation, TATA Johnson Controls, YAPP Automotive Parts, Cooper

Jamie Bartram

Director
The Water Institute at UNC
University of North Carolina
UNC Gillings School of Public Health

If you look back a few decades, the idea of water as a potentially limiting factor for businesses and the economy simply wasn't there. Companies didn't recognize that water is critical to their business. Within the last decade, water internationally has increasingly been seen as important, but it didn't get sexy overnight. Today, of course, water conservation is mainstream but water safety is still a lagging issue.

The Water Institute at UNC works at the triangulated point that fits between water, health and development. We take great care to say that water resources, sanitation and water supply aren't just concerns for developing countries; even the most developed nations face constraints.

Two years ago, the United Nations recognized water as a human right. That doesn't mean glibly that an individual can knock on a door and say, "I demand my right to water." What it does mean is that governments, within their means, need to allocate resources to equitably provide services to their populations in a way that is reasonable and fair.

We're so under-ambitious about what we do with water that it's quite scary. How on earth can we be sitting here in the 21st century and have a United Nations Millennium Development Goal – the height of human ambition – of reducing the proportion of people who *only* have to walk half an hour to collect water, a single bucket at a time. Is that a serious ambition for the 21st century? Our ambition shouldn't be anything less than reliable, safe water in every house, every hospital, every school and every public marketplace around the globe.

Here at the Water Institute, we believe that if we are to solve water problems, we must confront head-on the "elephants in the room." One of the biggest "elephants" is the flush toilet. We all crank that handle on the porcelain pedestal and think it's a marvelous, modern thing. But if you think about it, it's really a very silly way for us to manage waste. We use enormous volumes of water to dilute material, which then goes through hugely expensive pipes buried underground and which then must be separated out at great cost. And even then, we're not very good at it; every year there are outbreaks of diseases when sanitary waste gets into the environment and contaminates our water, food or land. Part of the problem is the huge investment that should be made each year to keep up the infrastructure but is often delayed.

Another "elephant" is the way that we manage our water systems. In many parts of the world – even in some wealthier nations – we often have water management systems that are undermanaged and underperforming because of system fragmentation, underfunded systems and an unwillingness to look at more comprehensive, newer management approaches.

To take water and public health issues to a new level, we need commitments from governments, from non-governmental organizations (NGOs) and from corporations alike.

The NGOs are out there trying to make the world a better place, and many are doing terrific things. These organizations can bring better performance and more impact from critical self-reflection, but their focus on household water use addresses only a small fraction of overall water use.

Related Links

External Websites:

- The Water Institute at UNC

Transformational solutions to the water crisis can come from companies that have the skills and resources to address the problem. Whether it's the utilities that deliver services or the companies that provide materials or the large manufacturers that are the heaviest users and dischargers of water, businesses know how to track performance, evaluate improvements and optimize the use of scarce resources.

For both NGOs and companies to be effective, governments have a role in creating the frameworks and regulations, as well as their own direct roles.

I always say that the role of any agency starts at home, and that's true for corporations, too. Water has a big role in the workplace, even just in terms of making sure that a company's employees have access to safe, drinkable water and to clean private toilet facilities.

Companies that are leading on water issues have essentially done three things. They are practicing good management in their workplaces by providing their workers with clean water and clean sanitation. They are improving internal efficiencies and reducing their water footprint. And they are examining their external impacts as a user of water on the communities around them. They're not treating water as an issue of corporate social responsibility or philanthropy. They are relating it back to how they do business.

Vehicle Safety and Driver Assist Technologies

At Ford, we aim to Go Further. That's our brand promise, and it's a promise that focuses us on creating great products, a strong business and a better world. Part of that brand promise involves giving customers peace of mind and making the world safer by developing an array of advanced safety technologies and making them available across a wide range of vehicles.

These technologies include everything from high-strength steels and world-first rear-seat inflatable seat belts to radar-based driver assist technologies and technologies that encourage safer driving, such as the Ford MyKey® system. Going Further also means working with partners to create a future in which connected vehicles talk to each other, and to the roadway, in order to potentially avoid accidents and traffic jams.

In short, vehicle safety is a critical part of our aim to Go Further, and we work to build in safety from the very beginning of each product development process. Indeed, safety is one of four global brand pillars that guide our every design and engineering effort.[1]

Ford remains among the global leaders in vehicle safety. To date, for example, Ford Motor Company has earned more "Top Safety Picks" from the Insurance Institute for Highway Safety (IIHS) – a total of 78 – than any other manufacturer in the seven-year history of that crash testing program.[2] 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.

Our recent safety highlights include the following:

- Twelve Ford Motor Company vehicles earned Top Safety Picks from the IIHS in 2012: The Ford Fiesta (sedan and hatchback), Focus, Fusion, Taurus, Edge, Explorer, Flex and F-150 (crew cab) and the Lincoln MKZ, MKS, MKT and MKX.
- The Ford Fusion has been an IIHS Top Safety Pick for four years in a row (2009–2012).
- The Ford Ranger and the Ford Focus both earned five-star safety ratings in the revised and more stringent 2012 European New Car Assessment Program (EuroNCAP) assessments.

75 percent

of Ford Motor Company vehicles earned IIHS Top Safety Picks in 2012

78

Top Safety Picks earned by Ford Motor Company to date, more than any other manufacturer in the seven-year history of that crash testing program[3]

Ford Ranger

The European Ford Ranger earned a five-star EuroNCAP rating; it's the first and only pickup to achieve this honor.

Innovative Safety Technology

We brought to market the world's first automotive inflatable safety belts – a brand-new technology that has won several prestigious awards.

Driver Education

In 2011, we reached 35,000 teen drivers on the Ford Driving Skills for Life high school tour.

- The new European Ford Ranger, designed by engineers in Ford of Australia, is the first and only pick-up to achieve a five-star rating in the EuroNCAP assessment. It scored 89 percent for overall safety – the best score ever earned by a pick-up and one of the highest scores recorded by EuroNCAP for any type of vehicle. Moreover, the new Ranger achieved the highest rating (81 percent) of any vehicle ever tested by EuroNCAP for pedestrian protection.
- The Ford Focus now has an industry-leading total of four EuroNCAP "Advanced Awards" for offering Lane Keeping Aid, Active City Stop, Forward Alert and Driver Alert technologies.
- The Ford Fiesta was awarded a five-star rating in the Chinese NCAP during 2011.
- The 2011 Ford Territory, Falcon, Kuga, Ranger and Focus were all awarded five-star ratings in the Australasian NCAP.
- In the newly founded Latin NCAP, the Ford Focus achieved a best-in-class four-star rating for adult protection and three stars for child protection.
- The 2013 Ford Taurus Police Interceptor will be the only police pursuit sedan on the market tested in 75-mph rear-end crash tests.
- The 2012 Ford Fiesta is the first vehicle in its class to offer a driver's knee airbag.
- 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 2012 model year, we expanded the availability of these safety belts in North America to the Ford Flex and the Lincoln MKT.
- In South America, the 2012 Ford Edge was first-in-segment to offer Blind Spot Information System (BLIS). The 2013 Ford Fusion will also be first-in-segment to offer BLIS. BLIS uses radar sensors to help inform the driver when a vehicle is detected in the blind spot zone.
- In 2011 we introduced Lane Keeping System, a driver assist feature, in Europe on the new Ford Focus. Its availability will be expanded to North America on the 2013 Lincoln MKS, MKT, MKZ and Ford Explorer and Fusion.
- We launched Curve Control on the 2011 Ford Explorer. This driver assist technology helps slow the vehicle when it senses the driver is taking a curve too quickly. We are expanding the availability of Curve Control to the 2013 Ford Taurus and Flex and the 2013 Lincoln MKS and MKT. A majority of Ford's products will be equipped with Curve Control by 2015.

The 2012 Ford Fusion

1. The other brand pillars are quality, fuel efficiency and smart technologies.
2. Historic totals include all brands and entities owned and controlled by the manufacturer during the 2006–2012 calendar years. For Ford Motor Company, this includes Ford, Lincoln, Mercury and – through 2010 model year – Volvo. Totals do not include Mazda.
3. Historic totals include all brands and entities owned and controlled by the manufacturer during the 2006–2012 calendar years. For Ford Motor Company, this includes Ford, Lincoln, Mercury and – through 2010 model year – Volvo. Totals do not include Mazda.

How We Manage Vehicle Safety

At Ford, our objective is to 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 top marks in relevant public domain assessments.

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 case study for information on the most recent changes.

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 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 elapses between the crash and when help arrives.

Related Links

This Report

- Case Study: Public Domain Ratings

	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

Home > Vehicle Safety and Driver Assist Technologies > How We Manage Vehicle Safety

Encouraging Safer Driving

The U.S. Department of Transportation conducted a national survey from 2005 through 2007 that sought to identify environmental, vehicle and driver factors in crashes involving light passenger vehicles. They found that in 95 percent of the crashes studied, a driver-related factor was the "critical reason for the critical pre-crash event."

According to studies by the Insurance Institute for Highway Safety, the crash rate for 16–19-year-old drivers is four times higher than the crash rate for older drivers. The difference is attributed to both the immaturity of teen drivers (e.g., higher rates of risky driving such as speeding) and lack of experience (e.g., less capability in unfamiliar situations).

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.

For example, Ford Driving Skills for Life (FDSFL), Ford's driver education program, demonstrates our commitment to help new drivers to improve their motoring skills. In the U.S., FDSFL focuses on teen drivers; in our Asia Pacific and Africa markets, the program is aimed at first-time drivers of all ages.

Summer Schaive and Allison Brockel from Riverton High School show off their "Teens Against Distracted Driving" shirts at a Ford Driving Skills for Life event that was part of Operation Teen Safe Driving

In 2012 in the U.S., FDSFL plans to visit 30 high schools in five states with a transporter featuring specially equipped vehicles and professional instructors. The 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. FDSFL reached 35,000 teen drivers on the high school tour in 2011, and the same number is expected to participate this year. In addition, FDSFL continues to provide interactive web-based training called "The Academy" on www.drivingskillsforlife.com, and free materials upon request for students, educators, parents and community organizations.

In Ford's global markets, FDSFL is in 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. FDSFL programs are tailored in each of these markets to reflect the local driving environment and road conditions. So far, 50,000 people have participated in the program across Asia and Africa, with another 12,000 expected in 2012.

Every year, Ford partners with the Illinois Department of Transportation, secretary of state and

Related Links

Ford Websites

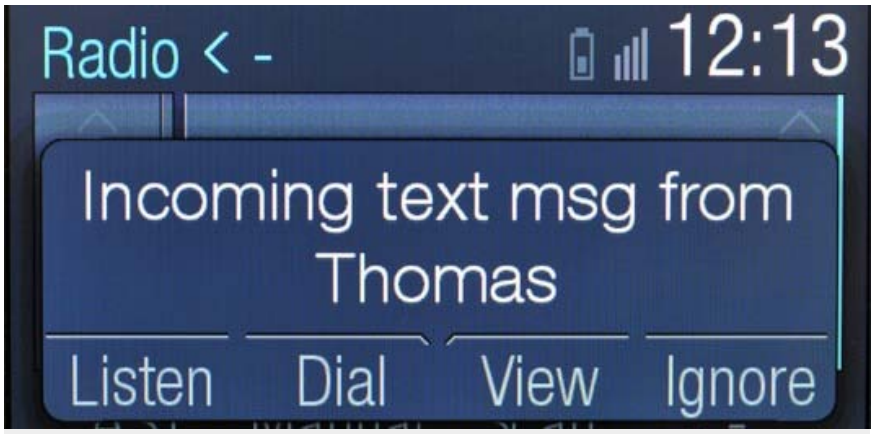
- Ford Driving Skills for Life
- Ford SYNC®

External Websites

- Operation Teen Safe Driving

state police to run a seven-month statewide program – modeled on Ford Driving Skills for Life – designed to reduce teen crashes and fatalities. Called Operation Teen Safe Driving, this campaign gets high school students directly involved by challenging them to develop and implement a teen safe driving community awareness campaign using FDSFL resources. The program involves 883 schools in 102 Illinois counties, and has the support of the governor, the secretary of state and the Chicago Board of Education. During the 2010–2011 program year, the program reached 3.2 million Illinois residents. The results have been remarkable: Illinois has seen a 45 percent reduction in teen fatalities since the program was launched in 2007.

Another way Ford has been working to encourage safer driving is to focus on the issue of driver distraction. For example, Ford SYNC® – while primarily a convenience feature – provides a way for drivers to use cell phones and MP3 players through voice commands alone, while keeping their eyes on the road and their hands on the wheel. Ford's SYNC system even addresses concerns regarding text messaging: When a text message arrives, SYNC does not display that message but instead gives the driver the option of ignoring it or reading it aloud through text-to-speech technology. It then provides a list of canned replies for the driver to select rather than key-in or compose manually. SYNC also locks out certain features (such as adding or editing a phone book contact) while driving.



The SYNC in-car connectivity system, which can read aloud incoming messages through a text-to-speech feature

In addition, the MyFord Touch® driver connect technology – launched in 2010 – replaces many of a vehicle's traditional buttons, knobs and gauges, and is designed to increase focus on driving while providing access to information, entertainment and connectivity features. The system includes a state-of-the-art voice recognition system with more than 10,000 available commands and color LCD displays, along with two five-way controllers on the steering wheel. While MyFord Touch has been continuously improved with each successive vehicle introduction since 2010, Ford launched the first major software upgrade of the system with the 2013 Ford Taurus and Flex. The upgrade includes better voice recognition and enhancements to the touch screen interface, with faster response time, simpler graphics and bolder text that is easier to use. These features encourage drivers to maximize the time their eyes are on the road and their hands are on the steering wheel. The upgraded system will roll out to all new 2013 models that offer MyFord Touch, and the improved software will be offered to more than 300,000 current owners.

The 2013 F-Series Super Duty with MyFord Touch

Finally, 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 and the audio volume. 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.

The Ford MyKey

Early in 2012 on the Ford Taurus and Explorer, Ford upgraded MyKey with a world-first technology that allows parents to limit a vehicle's top speed at any of four different settings: 65, 70, 75 or 80 mph. The upgrade, which will quickly be offered across a variety of Ford and Lincoln models, also invokes SYNC's Do Not Disturb feature, which sends incoming phone calls and text messages to the synced phone's mailbox, and it allows parents to block explicit radio programming while their teens are driving. For the 2012 model year, MyKey is available on nearly all Ford Motor Company retail vehicles in North America, and its availability is expanding to other regions.

Home > Vehicle Safety and Driver Assist Technologies > Encouraging Safer Driving

Safety and Driver Assist Technologies

Ford Motor Company continues to invest in new technologies to address real-world needs and customer wants. Our advanced research strives to understand the many variables that can influence a safety need and develop solutions that advance our commitment to provide safe and efficient transportation. (See more in the NCAP case study.)

In this section we discuss three categories of technologies and provide a few examples of Ford's offerings in each. The categories include:

- Accident Avoidance and Driver Assist Technologies
- Occupant Protection Technologies
- Post-Crash/Injury Mitigation Technologies

Related Links

This Report

- Case Study: Public Domain Ratings

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.

Curve Control, for example, which launched on the 2011 Ford Explorer, 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. Curve Control will roll out in the majority of Ford products by 2015.

Ford's Lane Keeping System 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 is on course. 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 driver vigilance level falls below a certain level (i.e., if the driver gets tired), visual and audible warnings are given. Lane Keeping Alert is designed to warn the driver, via a vibration in the steering wheel and a warning chime, when the front-view camera detects that an unintentional lane departure is happening. Lane Keeping Aid goes a step further. It applies a steering torque in the direction the driver needs to steer to keep the vehicle in the current lane. If the front-view camera detects that a lane departure is still likely to occur, the system vibrates the steering wheel to help the driver recognize that additional action is needed.

Ford's innovative Lane Keeping System

Lane Keeping System can be activated and deactivated manually via a switch on the turn indicator stalk or tuned to allow the driver to retain full steering control of the vehicle. 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. Lane Keeping Alert and Driver Alert were first available in Europe on the Ford Mondeo, S-MAX and Galaxy. The updated Lane Keeping System was introduced in Europe on the new Focus; it will be offered in North America on the 2013 Lincoln MKS, MKT and MKZ and the 2013 Ford Explorer and Fusion.

Ford's Collision Warning with Brake Support technology activates a visual and audible warning when the system detects a high risk of collision with the vehicle in front. In addition, the

Related Links

Vehicle Websites

- Ford Edge
- Ford Escape
- Ford Expedition
- Ford Explorer
- Ford E-Series
- Ford Flex
- Ford Fusion
- Ford Super Duty®
- Ford Taurus
- Ford F-150
- Lincoln MKS
- Lincoln MKT
- Lincoln MKX
- Lincoln MKZ
- Lincoln Navigator

Ford.co.uk

- Ford Focus
- Ford Galaxy
- Ford Mondeo
- Ford S-MAX

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. Range and speed information are sensed with long-range radar mounted on the front of the vehicle. Collision Warning with Brake Support can be activated or deactivated as the driver wishes. If the sensor becomes blocked by snow, ice or mud, the driver will receive a notice of reduced or suspended functionality. This technology is available in North America on the Ford Taurus, Edge and Explorer and the Lincoln MKS, MKX and MKT, and in Europe on the Ford Mondeo, S-MAX, Galaxy and Focus. The technology will also be available on the new 2013 Ford Fusion in North America.

Visual warnings from Ford’s Collision Warning with Brake Support technology

Finally, Ford’s industry-leading innovation known as AdvanceTrac® with Roll Stability Control® (RSC) continues to give drivers more driving confidence. RSC actively measures and helps control both yaw and roll movements. It uses two gyroscopic sensors to detect when a driver corners too fast or swerves sharply to avoid an obstacle. It then applies pressure to select brake(s) to help the driver maintain control, thus potentially reducing the risk of a rollover event.

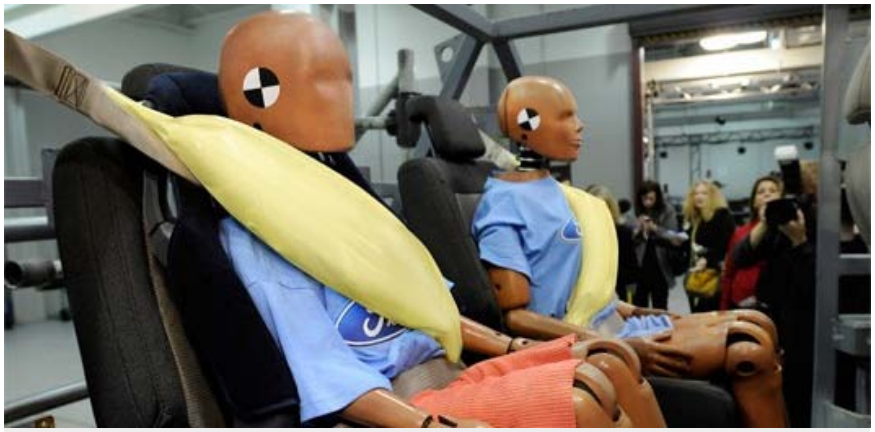
Roll Stability Control is standard equipment on the Ford Flex, Explorer, Expedition, Edge, Escape and F-150, as well as E-Series wagons and vans and the 2011 SuperDuty with single rear-wheel configurations. It is also standard equipment on the Lincoln Navigator, MKX and MKT.

As of the 2012 calendar year, 100 percent of Ford vehicles (under 10,000 lbs. gross vehicle weight) in North America come standard with either RSC or our standard electronic stability control system.

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 on and development of technologies that further enhance occupant protection in a wide variety of crash circumstances.

Safety belts remain the most important vehicle safety technology available. For the 2011 model year, Ford brought to market the world's first automotive inflatable safety belts – a brand-new technology that has won several prestigious awards. Specifically, it won Gold in the 2011 Edison Award's Applied Technology category, *Popular Mechanics'* "Breakthrough Award," *Popular Science's* "Best of What's New" award and the Automobile Journalists Association of Canada's "Best New Technology" award. The inflatable safety belts combine the attributes of traditional safety belt and air bag technologies to help reduce the risk of head, neck and chest injuries for rear-seat passengers.



Inflatable safety belt technology

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.

Ford introduced rear-seat inflatable safety belts on the 2011 Ford Explorer in North America; their availability was expanded to the Ford Flex and Lincoln MKT in early 2012, and will be expanded to the Lincoln MKZ in mid 2012. Plans are also in place to implement rear-seat inflatable belts in other markets.

As part of our continuing effort to enhance the safety and fuel efficiency of our vehicles, Ford is using more 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 balancing overall vehicle weight – even as we add more features, equipment and safety devices. As an example, the body structure of the new 2012 Ford Focus is constructed of 55 percent high-strength materials.

Related Links

Vehicle Websites

- Ford Explorer
- Ford Flex
- Ford Focus
- Lincoln MKS
- Lincoln MKT
- Lincoln MKZ

Ford Websites

- Inflatable Safety Belts

Post-Crash/Injury Mitigation 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.

In the U.S., Ford SYNC® is an award-winning, in-car connectivity system introduced on certain 2007 model year vehicles. Beginning with the 2009 model year, SYNC-equipped vehicles come with an occupant communications capability called SYNC 911 Assist, Ford's in-car, non-subscription call-for-help system. In the event of a severe crash, the ability to directly contact the local 911 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 911 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. The key advantage of SYNC 911 Assist is speed, as calls are placed directly to local 911 operators and do not have to be routed through a call center (as in competitors' versions), which can delay the time it takes to get help on the way. SYNC 911 Assist 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 November 2011, Ford participated in discussions with the U.S. National Highway Traffic Safety Administration, the Centers for Disease Control, other automobile manufacturers and government agencies on future directions for advanced automatic crash notification systems. Ford presented information about the next generation of SYNC 911 Assist, which will include the ability to communicate additional information to 911 operators such as the impact velocity of the vehicle, which is highly correlated to the probability of serious injury.

In Europe, beginning in 2012 with the new B-MAX, Ford will offer SYNC with Emergency Assistance, a system similar to SYNC 911 Assist. Ford worked with the European Emergency Number Association (EENA) to develop Emergency Assistance and gained valuable input into the system's design. The EENA aims to ensure a consistently high level of response to 112 emergency calls across Europe. Emergency Assistance alerts local emergency services operators after an accident, in the correct language for the region. It will be available in more than 30 countries across Europe and beyond.

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 pre-tensioner activation, to aid in rescue. The system is designed to alert passersby and emergency services to the vehicle's location.

Related Links

Ford Websites

- SYNC® 911 Assist

Ford.co.uk

- Ford B-MAX

External Websites

- European Emergency Number Association
- National Highway Traffic Safety Administration

VEHICLE SAFETY AND DRIVER ASSIST TECHNOLOGIES

- How We Manage Vehicle Safety
- Encouraging Safer Driving
- Safety and Driver Assist Technologies
- Collaborative Efforts
- Data
- Case Studies
- Voice: Dr. Saeed Barbat

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 two other major examples: The U.S. Council for Automotive Research and our university partnerships.

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).

A number of years ago, the OSRP initiated the development of WorldSID, a male side-impact dummy that is recognized as the most advanced crash-test dummy ever created. The U.S. National Highway Traffic Safety Administration concluded that the biofidelity of WorldSID is better than that of the dummy in the current side-impact regulation. And, WorldSID is the first side-impact dummy with the potential to be commonly used in side-impact regulations around the world.

In 2010, the OSRP designed tools and procedures for evaluating testing devices to measure pedestrian lower-leg impact; these devices could become the standard in future vehicle-to-pedestrian impact testing. In 2011, the OSRP released information aimed at helping researchers and suppliers verify and validate "out-of-position" occupant-protection results in crash simulations.

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. Recently, this working group completed a study relating to the testing of advanced batteries used for applications in electric passenger vehicles. The study included examining vehicle crash data for frontal, frontal offset, side and rear impacts. The CSWG documented the findings in a Society of Automotive Engineers (SAE) technical paper that will be presented at the 2012 SAE World Congress.

University Partnerships

Ford increasingly 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 exploratory, long-term research and toward highly collaborative projects focused on innovations with more near- and mid-term implementation potential.

In 2010, Ford awarded 13 new URP grants to 12 universities around the globe. Recipient schools included, for example, Wayne State University in Detroit, Michigan; Stanford University in Palo Alto, California; RWTH Aachen University in Aachen, Germany; and Tsinghua University in Beijing, China. These Ford URP projects add to an active research portfolio that now comprises 30 studies in partnership with 26 universities globally. More URP proposals from various universities globally and covering a wide spectrum of engineering disciplines are to be awarded in 2012.

In addition to the URP projects, Ford has major research alliances with the Massachusetts Institute of Technology (MIT), the University of Michigan and Northwestern University.

Safety is a central thrust in many of these collaborative university programs. The following are some examples of current projects:

- Projects within the Ford–MIT alliance are yielding progress in areas of vehicle autonomy and

Related Links

This Report

- Case Study: Connected Vehicles

External Websites

- U.S. Council for Automotive Research

active safety, including computer vision, lane keeping, vehicle controls, obstacle detection and avoidance, and accurately assessing the driver's interaction with the vehicle. One project aims to assess the role of accident avoidance technologies, features and functions in reducing driving-related stresses and enhancing driver wellness.

- At Auburn University, Ford has an ongoing project to conduct "sensor fusion" – that is, to coordinate between Global Positioning System sensors and the motion sensors in a vehicle's stability control systems, to predict when a driver is about to lose control. The ultimate goal is to use satellites to feed data to a vehicle's electronic stability control system, allowing it to adjust and potentially prevent a loss-of-control accident.
- At the University of Michigan, safety work includes a portfolio of projects on 360° sensing and developing more robust and capable active vehicle control and enhanced collision avoidance systems, utilizing both onboard sensors and offboard information sources.
- A project at the State University of New York's Downstate Medical Center should yield an improved understanding of human tolerance to pelvis injury.
- Collaborative work is ongoing with Purdue University investigating enhanced vehicle dynamics and stability control.
- As part of its accident research projects in Germany, the U.K. and Australia, Ford works closely with internationally acknowledged safety experts from the Universities of Hannover, Loughborough, Dresden, Birmingham and Monash.

Collaborative university work catalyzes innovation at Ford by providing access to leading researchers at the cutting edge of vehicle dynamics and stability control, accident avoidance and driver assist safety technology, to name just a few. Ford will continue to integrate these collaborative innovations, driving continuous improvement in real-world safety and sustainability for all Ford Motor Company products.

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VEHICLE SAFETY AND DRIVER ASSIST TECHNOLOGIES

- How We Manage Vehicle Safety
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- Voice: Dr. Saeed Barbat

Data

DATA ON THIS PAGE

View all data on this page as charts | tables

A. Percent of Nameplates Achieving 3-star or Better in Rollover NCAP

Data are for the model year noted.

	2011	2012
Ford	98	95
Toyota	100	100
GM	100	100

Third party rated (NHTSA)

Notes to Data

The National Highway Traffic Safety Administration (NHTSA) has significantly changed its New Car Assessment Program (NCAP), such that the results for 2011 and 2012 model year vehicles cannot be accurately compared to previous model years. For example, NHTSA has added a “rigid pole impact test” to assess side-impact safety (in addition to an existing side-impact test); implemented the use of a smaller dummy in the passenger seat in frontal and side impact tests; and made significant changes to the injury criteria. For detailed information on the new NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

Related Links

In This Report:

- Vehicle Safety and Driver Assist Technologies
- How We Manage Vehicle Safety

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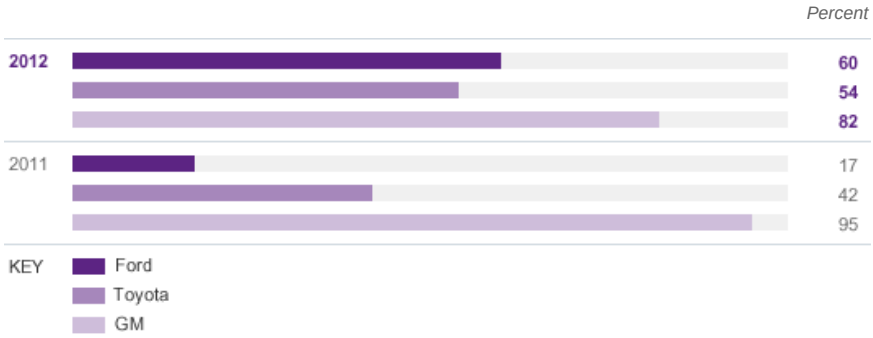
B. Percent of Nameplates Achieving 4-star/4-star Frontal NCAP or Better

Data are for the model year noted.



	2011	2012
Ford	17	60
Toyota	42	54
GM	95	82

Third party rated (NHTSA)

Notes to Data

The National Highway Traffic Safety Administration (NHTSA) has significantly changed its New Car Assessment Program (NCAP), such that the results for 2011 and 2012 model year vehicles cannot be accurately compared to previous model years. For example, NHTSA has added a “rigid pole impact test” to assess side-impact safety (in addition to an existing side-impact test); implemented the use of a smaller dummy in the passenger seat in frontal and side impact tests; and made significant changes to the injury criteria. For detailed information on the new NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

The data for the 2011MY NHTSA NCAP percentages were misstated in our last report. The corrected data are included in this graph.

Related Links

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C. Percent of Nameplates Achieving 5-star/5-star Frontal NCAP

Data are for the model year noted.

	2011	2012
Ford	0	0
Toyota	0	0
GM	11	25

Third party rated (NHTSA)

Notes to Data

The National Highway Traffic Safety Administration (NHTSA) has significantly changed its New Car Assessment Program (NCAP), such that the results for 2011 and 2012 model year vehicles cannot be accurately compared to previous model years. For example, NHTSA has added a “rigid pole impact test” to assess side-impact safety (in addition to an existing side-impact test); implemented the use of a smaller dummy in the passenger seat in frontal and side impact tests; and made significant changes to the injury criteria. For detailed information on the new NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

The data for the 2011MY NHTSA NCAP percentages were misstated in our last report. The corrected data are included in this graph.

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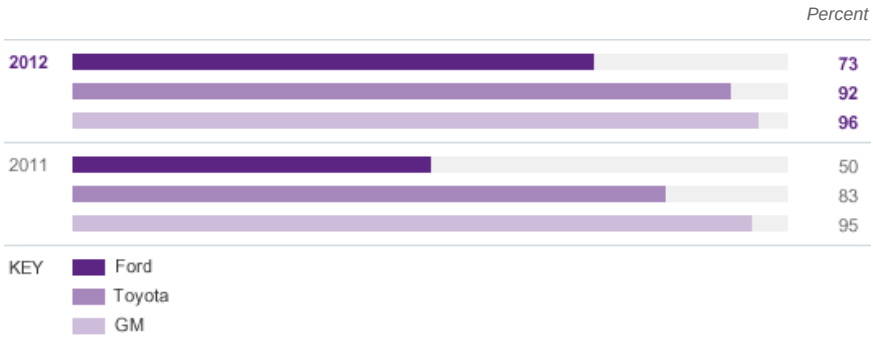
D. Percent of Nameplates Achieving 4-star/4-star or Better in LINCAP

Data are for the model year noted.



	2011	2012
Ford	50	73
Toyota	83	92
GM	95	96

Third party rated (NHTSA)

Notes to Data

The National Highway Traffic Safety Administration (NHTSA) has significantly changed its New Car Assessment Program (NCAP), such that the results for 2011 and 2012 model year vehicles cannot be accurately compared to previous model years. For example, NHTSA has added a “rigid pole impact test” to assess side-impact safety (in addition to an existing side-impact test); implemented the use of a smaller dummy in the passenger seat in frontal and side impact tests; and made significant changes to the injury criteria. For detailed information on the new NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

The data for the 2011MY NHTSA LINCAP percentages were misstated in our last report. The corrected data are included in this graph.

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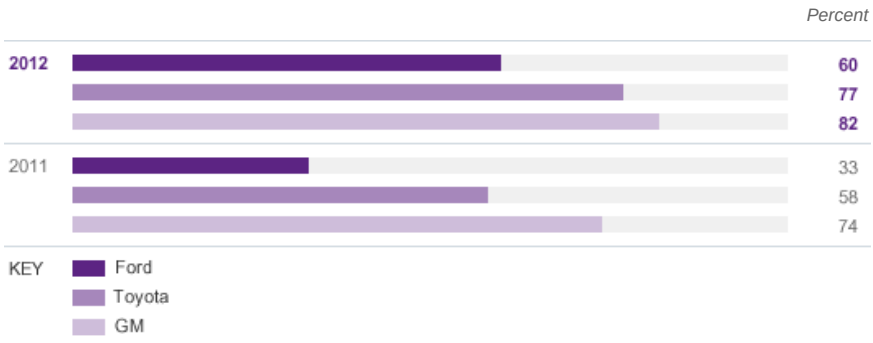
E. Percent of Nameplates Achieving 5-star/5-star or Better LINCAP

Data are for the model year noted.



	2011	2012
Ford	33	60
Toyota	58	77
GM	74	82

Third party rated (NHTSA)

Notes to Data

The National Highway Traffic Safety Administration (NHTSA) has significantly changed its New Car Assessment Program (NCAP), such that the results for 2011 and 2012 model year vehicles cannot be accurately compared to previous model years. For example, NHTSA has added a “rigid pole impact test” to assess side-impact safety (in addition to an existing side-impact test); implemented the use of a smaller dummy in the passenger seat in frontal and side impact tests; and made significant changes to the injury criteria. For detailed information on the new NCAP system, see www.safercar.gov, and in particular http://www.safercar.gov/staticfiles/toolkit/pdfs/faq.pdf (pdf, 213kb).

The data for the 2011MY NHTSA LINCAP percentages were misstated in our last report. The corrected data are included in this graph.

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F. IIHS Frontal Offset – Percent of Nameplates Achieving "Good" Rating

Data are for the model year noted.

	2011	2012
Ford	90	90
Toyota	95	100
GM	89	100

Third party rated (IIHS)

Related Links

In This Report:

- Vehicle Safety and Driver Assist Technologies
- How We Manage Vehicle Safety

External Websites:

- IIHS

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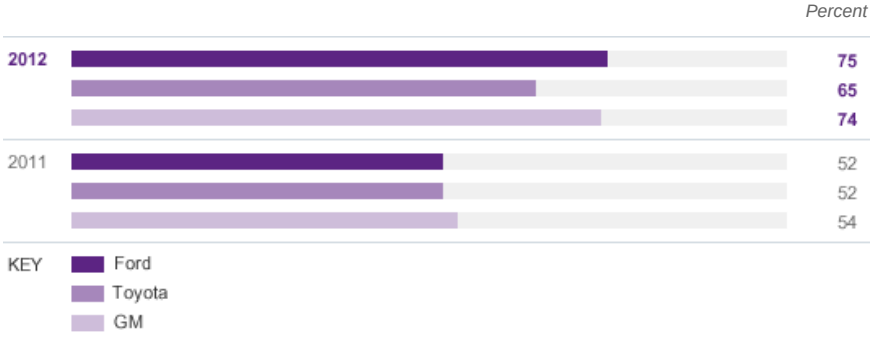
G. Percent of Nameplates Achieving IIHS Top Safety Pick by Manufacturer

Data are for the model year noted.



	2011	2012
Ford	52	75
Toyota	52	65
GM	54	74

Third party rated (IIHS)

Related Links

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- How We Manage Vehicle Safety

External Websites:

- IIHS

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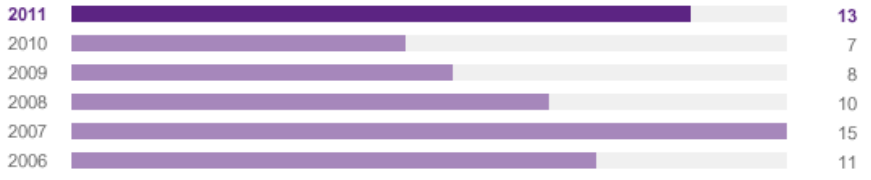
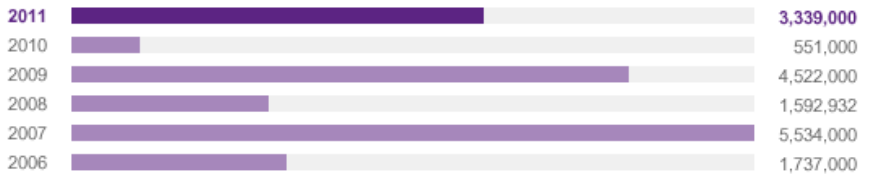
H. U.S. Safety Recalls

Number of safety recalls



Number of units



	2006	2007	2008	2009	2010	2011
Number of safety recalls	11	15	10	8	7	13
Number of units	1,737,000	5,534,000	1,592,932	4,522,000	551,000	3,339,000

Reported to regulatory authorities (NHTSA)

Notes to Data

In 2011, three recalls involved the high volume F-Series vehicle line, accounting for 2.706 million of the total vehicles affected. One other recall, involving older Windstar minivans, accounted for 425,000 of the total vehicles recalled in 2011. Note also, last year we reported that Ford issued 7 U.S. safety recalls in 2011. That was incorrect and the actual number of U.S. safety recalls in 2011 was 9. The number of units recalled was correctly reported.

Related Links

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- 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: 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. If vehicles approaching from opposite directions were communicating with each other, they could warn the drivers of each other, potentially avoiding head-on collisions.

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.

These types of systems could have real safety benefits, potentially helping in a significant fraction of police-reported vehicle-to-vehicle crashes involving unimpaired drivers, according to a U.S. National Highway Traffic Safety Administration (NHTSA) report.

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 prove out other technologies.

Ford Technologies

Driver assist technologies introduced by Ford in recent years are beginning to show what is possible in the realm of connected vehicles. Among the first of these technologies was Adaptive Cruise Control (ACC), which helps drivers maintain a pre-set distance from the vehicle in front of them. With ACC, a radar module is mounted at the front of the vehicle and used to measure 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 available on a wide range of Ford and Lincoln models.

Other key technologies that build on the functionality of forward-looking radar and cameras include Lane Keeping System and Collision Warning with Brake Support, which are discussed on the Accident Avoidance and Driver Assist Technologies page.

Related Links

This Report

- Accident Avoidance and Driver Assist Technologies

External Websites

- DRIVE C2X
- EuroFOT
- interactIVe
- National Highway Traffic Safety Administration

Ford's Lane Keeping System

We are now rapidly expanding our commitment to connected vehicles that can wirelessly talk to each other. In 2011, in fact, we doubled our investment in connected vehicles, forming a new 20-member task force of scientists and engineers to explore the technology's broader possibilities and become the first automaker to build prototype vehicles for demonstrations across the U.S. We have also initiated a series of research and advanced projects to begin the rollout of connected vehicle technologies into our product lineup.

In the U.S., NHTSA is expected to decide in 2013 whether to initiate a rulemaking process for vehicle-to-vehicle technologies that could require these systems in new vehicles starting in some future model year. Ford's goal is not to just wait for governmental action in this area, but to accelerate the vehicle connectivity landscape to be a leader in smart, safe and eco-friendly customer solutions.

Collaborative Research

To help achieve this, we take part in collaborative active-safety research with other automotive companies. In Europe, for example, the "Safe Intelligent Mobility – Test Field Germany" (known as "sim^{TD}" 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 sim^{TD}, 120 vehicles are outfitted with V2V and V2I communications systems, and roadside units are set up in select locations around the test area. Both are also linked up to traffic control centers. During the test, participating drivers may, for example, receive information about a traffic jam or road accident, so they can choose an alternate route. More than 100 drivers are actively participating and collecting data by completing specific driving tasks. Ford is providing test vehicles for the project, as well as leading the development of the Electronic Emergency Brake Light system, which warns the driver of a heavily braking vehicle ahead. The sim^{TD} project is taking place near Frankfurt, Germany, and will run through 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 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 will be conducted in seven test sites across Europe.

Both sim^{TD} 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.

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 autonomous braking and steering in critical situations, with the aim of avoiding collisions or at least mitigating impact severity in accidents.

In 2011 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.

Finally, it's important to note that much of our work in the area of accident avoidance and connected vehicles builds on research conducted by the Crash Avoidance Metrics Partnership (CAMP), which was launched in 1995 by Ford, General Motors and the Vehicle Infrastructure Integration Consortium (VIIC). The purpose of CAMP and VIIC has been to conduct precompetitive accident avoidance research with other vehicle manufacturers, suppliers and the U.S. government.

VIIC, a consortium of nine vehicle manufacturers (including Ford, BMW, Chrysler, GM, Honda, Daimler, Nissan, Toyota and VW-Audi), worked with the U.S. Department of Transportation (DOT) to address the key policy issue for V2X technology for both safety and mobility applications. And within CAMP, the Vehicle Safety Communications Two (VSC-2) Consortium, which included Ford, GM, Toyota, Daimler and Honda, worked with the DOT on projects to develop safety applications that utilize vehicle communications. CAMP VSC-2 successfully completed projects that demonstrated the basic feasibility of wireless vehicle-to-vehicle technology and evaluated several applications.

CAMP has now formed a VSC-3 Consortium with Ford, GM, Honda, Hyundai-Kia, Mercedes, Nissan, Toyota and VW-Audi to continue work on V2V communications for safety applications. This consortium is being funded by the DOT to complete all of the precompetitive work necessary for a deployment decision on vehicle safety communications in 2013. The consortium conducted driver clinics of V2V safety systems around the U.S. in 2011. In 2012, Ford will participate in a model deployment of V2V systems in Ann Arbor, Michigan, and will supply eight fully integrated vehicles for a year-long test. The model deployment will be the world's largest test ever of connected vehicles and will include passenger vehicles, commercial vehicles, transit vehicles and aftermarket connected-vehicle devices, along with equipped infrastructure.

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. Some of the changes include the addition of new assessment items (such as different-size dummies in different seating positions), 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 the 2010 calendar year (2011 model year), three major public domain ratings systems were significantly revised: the New Car Assessment Program (NCAP) implemented by the U.S. National Highway Traffic Safety Administration (NHTSA); the Top Safety Pick program run by the Insurance Institute for Highway Safety (IIHS) in the U.S.; and the EuroNCAP system sponsored by seven European governments as well as motoring and consumer organizations. In addition, new NCAP-type systems are currently 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 South and Central America. In 2012, they are planning to launch a new ASEAN NCAP in Malaysia.

NHTSA's NCAP program includes a 35 mph (56 km/h) full frontal impact, a side barrier impact and a static stability rating. In the 2011 model year program, NHTSA updated its program by adding a rigid pole impact test to its side-impact evaluation; implementing the use of a smaller dummy in the passenger seat in frontal impact tests; and significantly changing its injury criteria. In addition, NHTSA now 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.

The IIHS evaluations include a 40 mph (64 km/h) deformable barrier frontal offset (40 percent overlap) crash, a side crash test with a higher barrier simulating an SUV, a rollover test, plus evaluations of head restraints in a rear-impact simulation performed on a sled fixture. In 2011 a new roof strength test was added. To earn a Top Safety Pick from the IIHS, a vehicle must receive a "good" rating for the new roof strength test, in addition to "good" ratings in the front, side and head restraint assessments. Beginning in the 2013 program, the IIHS will add 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" level in this new small offset test will earn an IIHS Top Safety Pick–Plus award. This designation will allow vehicles that are currently Top Safety Picks to keep that award for a time while IIHS phases in the new test mode. The phase-in 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 EuroNCAP 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, EuroNCAP also gives each vehicle an overall star rating representing a combination of individual assessments. In addition to publishing the main vehicle ratings, EuroNCAP has added an Advanced Rewards program to recognize certain driver assistance and accident avoidance technologies that are not currently rated under their protocols. EuroNCAP has also announced significant changes to its rating system between 2013 and 2015. These changes are far-reaching and include a stronger focus on accident avoidance and driver

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

assist features, new and revised crash tests and dummies, and changes to the assessments for pedestrian and child safety.

The emerging programs being developed by Global NCAP are basing their testing and assessment methods on existing protocols – typically those from EuroNCAP.

In addition, revisions to the China and Australasia 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. Australasia NCAP has published a rolling "road map" detailing changes they plan to introduce by 2016. These include whiplash and roof-strength assessments and increased requirements for accident avoidance and driver assist technologies.

As a result of the numerous and significant changes to the major public domain evaluation programs, it has become more difficult to compare vehicle rating results to previous model years. For example, many vehicles that achieved the highest rating of 5-star/5-star under the former NHTSA NCAP frontal crash evaluation now have lower ratings under the evaluation criteria implemented with the 2011 model year. Thus, even though Ford vehicles are safer than ever, our vehicle ratings in this evaluation are not comparable to previous years. (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.

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VEHICLE SAFETY AND DRIVER ASSIST TECHNOLOGIES

- How We Manage Vehicle Safety
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- Voice: Dr. Saeed Barbat

Dr. Saeed Barbat

Executive Technical Leader for Safety
Ford Research and Advanced Engineering

I have been at Ford for 20 years, and over that time I've been involved in developing a host of technologies, tools and safety test methods that have made significant contributions to automotive safety. I concentrate on enhancing "passive-safety" technologies – such as vehicle safety structures, vehicle interiors and trim, airbags and safety belts – which are aimed at helping to protect occupants in the event of a crash. ("Active-safety" technologies, by contrast, are those that seek to prevent crashes.)

A decade or so ago, for example, we began to think more about how to mitigate the problems that occur when light-duty trucks and SUVs collide with small passenger cars. As one response, we developed the BlockerBeam™ in 1999, an industry-first technology for SUVs and light trucks that helps absorb crash energy in collisions and reduce or inhibit potential "over-ride" by lowering the point of impact, thereby providing better compatibility with smaller vehicles. We've also focused on the safety of our own small vehicles. The newly redesigned Ford Fiesta, for example, is made with high-strength steels and includes advanced airbag technologies. It has performed exceptionally well in third-party crash tests. We continue to focus on the safety of smaller cars as we respond to increasing consumer demand for lighter, more fuel-efficient vehicles.

One of our more recent passive-safety advancements was the world's first rear-seat inflatable safety belt, which debuted on the 2011 Ford Explorer and has won numerous awards.

We have a comprehensive, science-based system at Ford for developing and executing new safety-related technologies. This system takes into account real-world accident data and societal trends, so we can focus on the kinds of enhancements that will make a difference in real-world safety.

And, real-world safety needs and safety regulations differ by global region. As a global company, we have to take these differences into account and respond to them appropriately. In India and China, for example, many vehicle-related fatalities involve pedestrians and cyclists. So regulations and countermeasures in those regions take into account those modes of transport. In China, we offer the Ford Mondeo and Edge equipped with safety technologies to help achieve the five-star requirements of the China New Car Assessment Program. Also, the Ford Fiesta earns top crash-test ratings in multiple global regions, including China, Europe and the U.S.

We're using industry-leading tools to help develop our safety features. For example, we employ an adult digital human body model (developed by Ford) as a research tool to help us better understand the extent of tissue injuries that can occur during a crash. (By contrast, crash-test dummies measure the force of impact, but not potential injuries to internal organs.) We are also developing a child-size human body model to better understand the impacts of crashes on young passengers. These tools will also help in the development of more human-like crash dummies, with more sophisticated instrumentation.

Looking ahead, we'll continue research on rear-seat restraint systems for children and adults. Forthcoming research will also look at elderly protection, driver wellness, lithium-ion batteries, and even better lightweight technologies, such as parts made from carbon fiber.

Related Links

This Report

- Case Study: Connected Vehicles
- Occupant Protection Technologies

When I think about the roadways of the future, I imagine a world of autonomous vehicles in which some accidents can be avoided altogether. Already, we're seeing the regular introduction of new accident avoidance and driver assist technologies – such as Ford's own Lane Departure Warning, Blind Spot Information System and Active Park Assist – which are moving us in that direction. These types of technologies will only increase in the years to come, and then autonomous driving may become reality.

Our vision is continuous safety improvement in our products worldwide. To further enhance real-world safety and to reduce fatalities, we also focus on integrated safety – in other words, find more ways to integrate passive and active safety technologies to allow greater flexibility in occupant crash protection under a variety of crash conditions, through restraint and structure "adaptivity." We're already doing this in some cases; for example, Ford's Collision Warning with Brake Support technology uses sensors to determine if a crash is imminent, and then "pretensions" the brakes so they can be deployed more quickly. So, an area for future work is to determine how we can increasingly put active sensors to work in combination with passive-safety systems.

Supply Chain

Ford's suppliers are critical allies in helping our Company to achieve success in the marketplace and meet our sustainability goals. We promote long-term relationships with our suppliers and seek alignment with them on sustainability-related issues such as greenhouse gas emissions management and human rights.

The basis of our work with suppliers is the Ford Code of Human Rights, Basic Working Conditions and Corporate Responsibility. This Code was formally adopted in 2003 and applies to our own operations. We also seek to do business with organizations that conduct their businesses to standards that are consistent with this Code, and we encourage our $75 billion supply chain[2] to adopt and enforce similar codes. Ford's Code of Human Rights, Working Conditions and Corporate Responsibility 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 engagement with suppliers on sustainability issues:

- Building Capability at Individual Supplier Facilities: We work with suppliers to encourage the management of sustainability issues. We conduct supplier training supported by assessments and remediation at individual factories.
- Engaging with Strategic Suppliers: Ford and our strategic production suppliers work together at the corporate level to align and enhance approaches to a range of sustainability issues.
- Collaborating with Peers in the Automotive Industry: To achieve truly lasting change, we are leading work with our counterparts in the automotive industry, through the Automotive Industry Action Group (AIAG), to develop common approaches to a full range of sustainability issues.

Accomplishments

More than

1,750

Ford suppliers trained on human rights and environmental sustainability issues to date

$6.14 billion

worth of goods and services purchased by Ford from approximately 400 minority- or women-owned suppliers in 2011

Conflict Minerals

We have engaged internal teams and external networks to ensure appropriate due diligence for conflict-free sourcing.

In 2011, our human rights and environmental responsibility accomplishments in the supply chain included the following:

- Together with other automakers through the AIAG, we trained 387 supplier companies in India, Mexico, Turkey and Brazil. Of these, 111 were Ford suppliers. The industry-wide total across five countries now exceeds 1,500 suppliers trained. To date, the global total for Ford suppliers trained through both industry-wide training and Ford-specific training sessions now exceeds 1,750.
- We surveyed 128 suppliers representing nearly 60 percent of our annual purchases regarding greenhouse gas emissions, and we achieved an 86 percent overall response rate. More than 50 percent of respondents said they publicly report their emissions.
- Ford has driven industry action at the AIAG to address the need for common guidance and tools in the automotive industry and beyond for responsible sourcing from conflict-affected and high-risk regions.

Ford feels strongly that cooperation within industry, as well as with multiple stakeholders, will be required to effectively address the human rights and environmental impacts of mining and other raw material production processes. Due to the depth and breadth of the automotive supply chain, supplier engagement is critical and must be pursued by individual automakers and collectively as a global industry. In 2011, we have actively engaged suppliers through communications, training, events and workgroups.

This section provides background on our relationships with our suppliers and details our supply chain work to support human rights, promote environmental sustainability and explore human rights and environmental issues related to raw materials. We also detail our efforts to promote diversity among our suppliers.

1. $65 billion is Ford's annual purchase amount as of year-end 2010.
2. $75 billion is Ford's annual purchase amount as of year-end 2011.

Home > Supply Chain

Creating a Sustainable Supply Chain: Strong Relationships, Shared Commitment, and Capacity Building

ON THIS PAGE

Related Links

This Report

- Setting Expectations for Our Suppliers
- Supply Chain Profile

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 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.

Ford and its suppliers must work jointly to deliver great products, have a strong business and make a better future. In today's economic environment, achieving lower costs, improving quality and meeting sustainability goals require an unprecedented level of cooperation with suppliers and strong supplier relationships.

Our efforts to manage supply chain sustainability issues are based on building strong relationships with suppliers, developing a shared commitment to sustainability throughout our supply chain, and helping our suppliers build the capacity needed to manage sustainability issues internally and throughout their supply chain.

Building Strong Supplier Relationships

Building strong relationships with suppliers is central to our ability to create a sustainable supply chain. Without strong supplier relationships, we lessen our ability to encourage and influence the sustainability goals and management processes of our suppliers. We believe that strong relationships with our suppliers must be based on open communication, clear expectations and consistent requirements and processes. We work to maintain strong relationships with our suppliers by:

- Deploying a single, global product-creation process that combines aggressive execution of product plans with minimal variances
- Enhancing process stability, commonality and reusability
- Improving communication by providing real-time performance data to the supply base
- Providing suppliers with greater access to senior Ford managers in small-group settings
- Establishing organizational stability models in manufacturing, product development and purchasing
- Improving order fulfillment
- Engaging the supply base in discussions about process stability, incoming quality and corporate responsibility, and involving suppliers in coalitions to create awareness of industry issues

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Building Shared Commitment and Capacity to Manage Sustainability Throughout Our Supply Chain

It is equally 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. It also helps to ensure efficiency and quality throughout the supply chain. Shared commitment 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. We are also committed to providing suppliers with a range of support and assistance to develop their capacity to manage sustainability issues, based on our experience in this area. We have developed in-depth resource guides and coordinated presentations by subject matter experts to give suppliers information and background on human rights and greenhouse gas emissions estimation. We have provided tools such as worksheets for emissions tracking and reporting and code of conduct development. We are also sharing the training materials we have developed, 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.

Many of Ford's Tier 1 suppliers are major multinational companies that already have the capacity to implement and manage sustainability initiatives for their own operations and their own supply chains. We encourage all of our suppliers to develop their own systems for managing sustainability throughout their supply chain. Ford's ability to assess and influence the sustainability performance of our supply chain decreases the further removed suppliers are from us in our supply chain. For example, we have less ability to influence and assess our Tier 1 supplier's third- and fourth-tier suppliers. As a result, we work hard to align our Tier 1 suppliers to our sustainability goals and rely on them to help us maintain a clear and consistent message as far up our supply chain as possible. Our Aligned Business Framework program, described below, is the primary way we work with Tier 1 suppliers to help them develop the capacity to manage their own supply chain sustainability issues.

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Creating a Sustainable Supply Chain through Our Aligned Business Framework

In 2005, we introduced an Aligned Business Framework (ABF) with our strategic suppliers to increase mutual profitability, improve quality and drive innovation, and to help us encourage shared commitment to sustainability goals.

We sign bilateral agreements with our ABF suppliers that comprehensively and formally spell out business commitments. One element of the ABF agreement is the commitment by suppliers to manage and assure proper working conditions and responsible environmental management in their facilities and in their supply chain. (ABF suppliers must also adhere to our Global Terms and Conditions.) This commitment is important for several reasons. Beyond the simple fact that it is the right thing to do, there are specific business benefits to Ford and suppliers in reducing the risk of operational or reputational issues that could affect production. The commitment also provides an opportunity for joint action by Ford and its suppliers to ensure responsible behavior throughout the automotive 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 already have or develop a code of conduct aligned with our Code of Basic Working Conditions, Human Rights and Corporate Responsibility.

Training and Compliance Process

We provide training as needed to our suppliers and ask them to conduct their own internal trainings to ensure understanding of 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 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, thus ensuring that suppliers meet our expectations. We are making good progress in this developmental work with our ABF suppliers. Twenty-four percent of our strategic suppliers have met all three Ford milestones – that is, they have codes of conduct in place that are aligned with international standards and supported by robust management systems governing their own operations and their supply chain. The intent is for our ABF suppliers to wholly own responsibility for sustainability expectations and performance in their supply chain. As of 2011, ABF suppliers still participate in our factory-level Working Conditions Program if requested by Ford, but over time, we expect the need for their participation to decline.

Through our work with ABF suppliers to date, we have found key success factors that have enabled companies to make notable progress, 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) facilitation by Ford of discussions and implementation support through individual or regional in-person meetings. In general, companies that have been able to make progress in aligning with these ABF expectations have been those that may already have aligned values, but had not necessarily institutionalized those values through comprehensive policies and programs. Many of these companies approach responsible working conditions and environmental management in a systemic manner with implementation and supporting management systems in mind.

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 workgroups at the AIAG, and by the United Nations Global Compact, have been useful to our ABF suppliers in their development of sustainable supply chain systems.

During the first quarter of 2012, we held our annual production ABF supplier sustainability meeting in Southeast Michigan. The meeting included sessions on the value of collaboration in pursuing supply chain sustainability, updates on the Ford and AIAG supply chain greenhouse gas management initiatives, and an overview of emerging expectations regarding regulatory requirements and industry activity related to conflict minerals and supply chain transparency.

Ford is making strides in improving its working relationships with suppliers on a global basis. We are particularly excited about our sustainability work with our ABF suppliers, as it leverages our efforts to manage human rights and environmental responsibility issues in our supply chain in a more collaborative, in-depth, integrated and aligned manner. In our view, it will help embed ownership for social and environmental issues throughout our value chain, and lead to the development of more robust sustainable management systems across the automotive supply chain.

Ford's ABF Suppliers

As of June 2012, the ABF network included 102 companies, including 76 production and 26 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
- JCI
- Johnson Matthey

- Automotive Lighting
- BASF
- Benteler Automobiltechnik GmbH
- Bing Group+
- BorgWarner Inc.
- Bosch
- Brembo
- Brose
- Bruhl
- Central Glass
- Clarion
- Continental
- Cooper Standard
- Dakkota+
- Dana
- Delphi
- Denso Corporation
- Diamond Electric Mfg.
- Dicastal Wheel
- Diversified Machine Inc
- Dupont
- Emcon Technologies
- Engelhard
- Faurecia
- FCC Adams LLC
- Federal Mogul Corporation
- Flex-N-Gate+
- Foster
- Getrag AWS
- Getrag GFT
- GKN plc
- Grupo Antolin Wayne+
- Hankook
- Hayes Lemmerz International
- Hella
- Inalfa Roof Systems
- Inergy Automotive Systems
- International Automotive Components (IAC) Group
- Key Safety Systems, Inc.
- Kiekert
- Kolbenschmidt Pierburg AG
- Lear
- Linamar
- Magna
- MANN & HUMMEL Group
- Martinrea International Inc.
- Michelin
- Neapco
- Nemak
- Panasonic
- Pirelli
- Piston Automotive+
- PPG
- Prime Wheel+
- Rieter Holding AG
- Ronal GmbH
- Samvardhana Motherson Reflectec
- Sanyo
- Saturn Electronics & Engineering+
- Siemens
- Sonavox
- Superalloy
- Superior Industries
- Takata Holdings, Inc.
- Tenneco
- Thai Summit
- ThyssenKrupp
- Tokico
- Toyoda Gosei
- Trelleborg AB
- TRW
- Umicore
- Visteon
- Webasto
- Yazaki
- Zeledyne
- ZF

ABF Non-Production Suppliers

- Active Aero
- Aristeo
- Blue Hive
- Cisco
- Cross Country Automotive Services
- Devon Industrial Group+
- Evigna+
- EWI Worldwide
- EWIE Co., Inc.+
- Federal Express
- Global Parts and Maintenance+
- Gonzalez Production Systems+
- Imagination
- Jack Morton Worldwide
- Kajima Overseas Asia
- Kuka Flexible Production Systems
- MAG Industrial Automation Systems
- Microsoft
- MSX International
- Penske Logistics
- Percepta
- Roush
- Schneider Electric
- Synovate
- Team Detroit
- The Dürr Group
- Uniworld Group+

- Walbridge Aldinger
- Zubi Advertising+

+ indicates Minority- or Women-owned Business Enterprise Supplier

Corporate Responsibility Recognition of Achievement

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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Setting Expectations for Our Suppliers

Every supplier doing business with Ford is subject to Ford's Global Terms and Conditions. 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. We have provided a standard for these areas – the same as we use in our own facilities (Ford's Code of Human Rights, Basic Working Conditions, and Corporate Responsibility) – that supersedes local law if our standard 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 Terms and Conditions are accompanied by Supplier Human Rights and Environmental Guides to assist suppliers in the application of expectations. For example, the supplier guide that covers human rights and working conditions amplifies the expectations set out in the Terms and Conditions, providing context on Ford's expectations for the automotive supply chain. Among other resources, it provides specific guidance and recommendations for self-assessments and alerts suppliers to the factory-level training. In April 2012, we reissued both of these Guides with extensive edits such that clear guidance is provided to all suppliers on due diligence for conflict-free sourcing, business ethics, anti-bribery actions, environmental specifications for engineering and working conditions expectations.

Related Links

This Report

- Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility

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

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 at the automotive industry level 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, which we chair. This committee currently focuses on five main issues: global working conditions, conflict minerals, greenhouse gases, chemicals management and reporting, and health care value. Ford staff chair three of these work groups: chemicals management and reporting, working conditions, and conflict minerals. Ford has also 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 on Supply Chain Management

The work of the companies at the AIAG continues on several fronts:

- Exploring an industry response to raw materials sourcing and transparency challenges
- Providing common guidance and tools for responsible procurement
- Continuing to expand the factory-level supplier training program for a responsible supply chain
- Increasing supplier ownership of corporate responsibility issues through an expansion of engagement opportunities
- Developing additional 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 cross-sectoral initiatives. Broader participation will be needed to achieve the vision of an industry-wide approach to promoting supply chain sustainability.

Related Links

External Websites

- Automotive Industry Action Group

Human Rights in the Supply Chain: Ford's Global Working Conditions Program

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 the suppliers' responsibility, and we would like governments to play the lead role in enforcing compliance with laws. However, as customers, we also 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 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 promoted cross-industry collaboration beginning 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. More information about the corporate responsibility accomplishments and ongoing work of the industry through the AIAG can be found at www.aiag.org.

See the Expanding Human Rights Impact on Supply Chain graphic to see how we are working toward our vision using a three-pronged approach aimed at individual supplier facilities, supplier corporate management and OEM corporate management.

Related Links

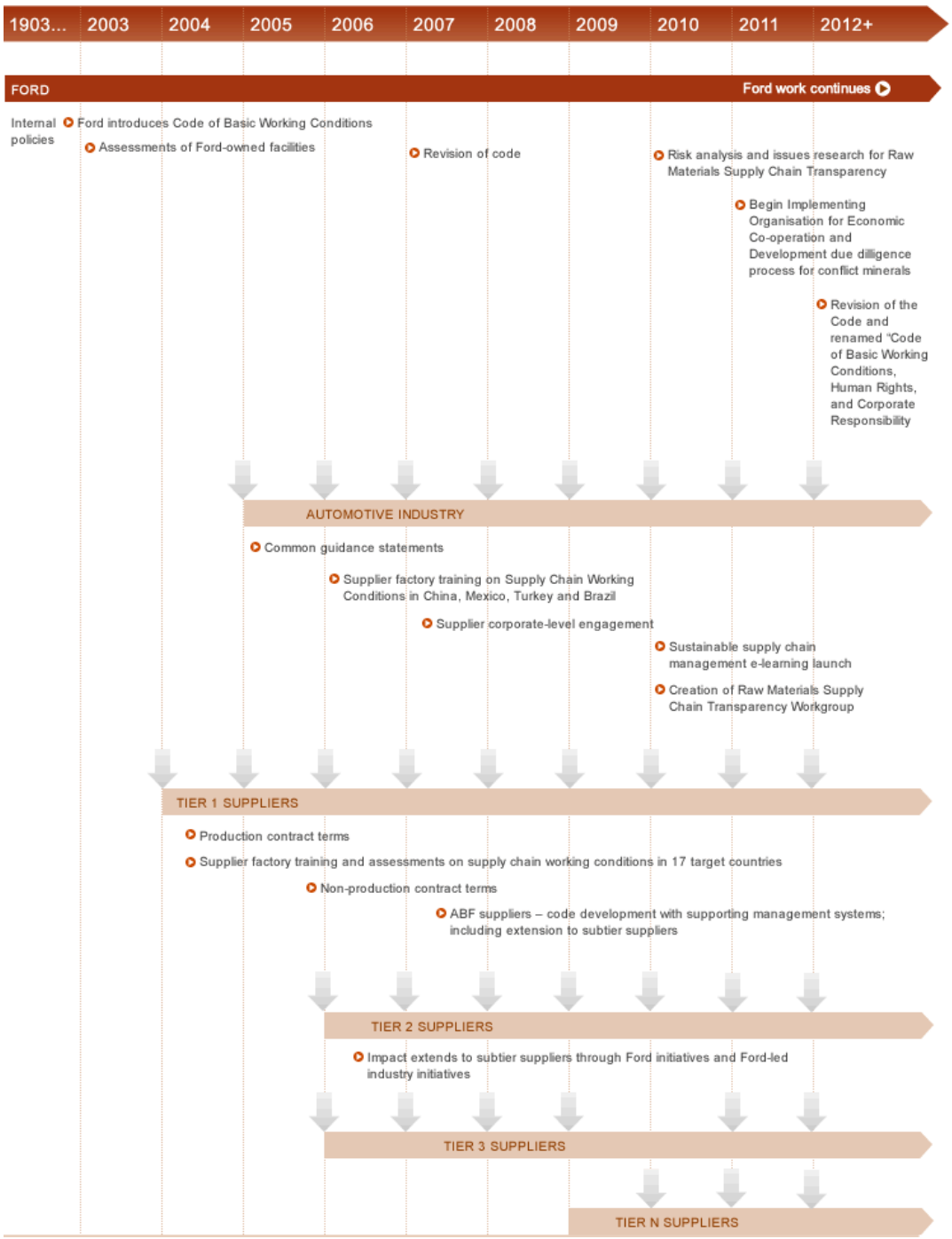
This Report

- Assessing Suppliers
- Expanding Human Rights Impact on Supply Chain
- Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility

External Websites

- Automotive Industry Action Group

Expanding Human Rights Impact on 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 this work by developing a training curriculum and approach that we used with Ford suppliers in 17 priority countries and surrounding areas. (See the Working Conditions Program Focus Countries box below.)

We recognized from the outset 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 we initiated a workgroup within the Automotive Industry Action Group (AIAG), and we recruited other automakers in North America, Asia and Europe to participate. Materials developed within Ford to promote responsible working conditions have been offered to the group as a platform for use and development. We now co-sponsor supplier factory-level trainings whenever possible and supplement those with Ford-specific workshops as needed.

2005	2006	2007	2008	2009	2010	2011+
Initial discussion	China factory training launch	Development and stakeholder engagement Mexico factory training launch	Development and stakeholder engagement Corporate engagement launch	Development of e-learning Development for geographic expansion	E-learning for supply chain managers Turkey and Brazil training launches	Geographic expansion of training program to India and Thailand Expanded training content in all existing launch countries 1st annual corporate responsibility conference for auto industry Creation of raw material supply chain transparency workgroup

In 2005, Ford, General Motors, Chrysler, Honda North America and Toyota North America began collaborative work through the AIAG to explore a cooperative industry approach to promoting decent working conditions in the supply chain. We continue to seek the participation of all global OEMs. Nissan and Daimler have since joined the AIAG and have begun participation in a number of established and emergent workgroups. We have engaged suppliers across a variety of different commodities. Their participation has been important to inform the activities pursued by the automakers at the AIAG, as has engagement with government (both U.S. and local governments in the countries in which training programs are provided) and nongovernmental agencies.

Initiative participants have created a set of guidance statements to establish a shared industry voice on key working conditions issues. The statements cover the core elements of individual companies' codes and policies, joint codes created by other industries and key international standards. The guidance statements historically covered child labor, forced labor, freedom of association, harassment and discrimination, health and safety, wages and benefits, and working hours. These statements have served as a baseline agreed upon by all the participating OEMs and are used as a platform for training. In 2010, we reached agreement with the other automakers to expand the guidance statements and training curriculum to cover business ethics and environmental responsibility. These expanded trainings – entitled Supply Chain Responsibility – are

being implemented in 2012 in China, Mexico, Brazil, Turkey, Argentina, Russia and Thailand.

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.

At Ford, we continue to focus on the 17 countries and surrounding regions we had previously identified as having higher risks of substandard working conditions. Among those countries, locations are prioritized 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 the list of countries in comparison with our global sourcing footprint. We did not find it necessary to add countries in the most recent review.

The companies at the AIAG discuss and agree on priority locations for the training workshops. Beginning in 2007, the sponsoring OEMs launched joint factory-level training workshops in China and Mexico. All training materials and the overall approach were based on Ford's prior work. The launch of each series of in-country training involves participation by OEM representatives and Tier 1 suppliers as well as local industry associations and government support where possible.

Whether delivered by Ford alone or with other automakers at the AIAG, the training workshops emphasize the interpretation and application of legal standards and international best practices. By interacting with managers from the human resources, health and safety, and legal departments of participating companies, the workshops provide for a two-way learning experience touching on the areas of interest for each company. The sessions utilize a "train-the-trainer" approach, so as to expand the scope and impact of the training.

While the supplier training sessions are customized to align with the unique laws, customs, cultures and needs of each location, in general they consist of:

- A day-long interactive workshop facilitated by qualified trainers and involving multiple automotive suppliers, in which participants develop and confirm an understanding of customer expectations, local law, best practices and sustainability management systems.
- Verification that the course attendee subsequently delivered training on the information obtained during the classroom training to all supplier personnel at each factory and communicated customer expectations to their direct sub-tier suppliers. Ford collects this verification within four months of course completion.

In 2011 Ford trainings were coordinated through the AIAG. These trainings included both in-person classroom training sessions and e-learning trainings.

2011 Classroom Training

In 2011, the AIAG jointly sponsored with participating OEMs supplier training sessions held in Brazil, India, Mexico and Turkey. A total of 387 suppliers attended these sessions. Of these, 111 were Ford suppliers and may also have been a supplier to other participating automotive manufacturers. This brings the global total for trained Ford suppliers to more than 1,750. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with AIAG and other automakers). The industry total for the AIAG training sessions across five countries (Brazil, China, India, Mexico, and Turkey) now exceeds 1,500 suppliers trained.

Consistent with the format of Ford's original design, the attendees were required to subsequently complete a cascade of the training and expectations to the entire factory population and suppliers. Through this process, the training of suppliers in India alone affected nearly 7,000 workers and more than 800 Tier 2 suppliers.

Suppliers trained in 2011 have now moved on to the process of self-assessing their facilities for compliance with local law and Ford expectations and completing the final stage of the program, which is communication to both workers and their own suppliers on the topic of working conditions expectations. In 2012, we plan to conduct additional supplier training sessions in conjunction with the AIAG in China, Mexico, Brazil, India, Turkey and Thailand.

Where possible, these courses will be open to any interested company, and 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.

E-Learning for Responsible Supply Chain Management

The automakers collaborating at the AIAG have developed an online training program on supply chain working conditions and responsible procurement targeted at purchasing and supply chain management professionals. The web-based training was launched in early 2010 by the five participating OEMs free of charge to their respective suppliers and continues to be available. The

training has also been deployed internally at a number of the sponsoring OEMs for their own global purchasing and supply chain staff.

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

Countries

- Americas and Caribbean: Argentina, Brazil, Colombia, Mexico (and Central America region), and Venezuela
- Asia and Africa: China, India, Korea, Malaysia, the Philippines, South Africa, Taiwan, Thailand and Vietnam
- Europe: Romania, Russia and Turkey

Assessing Suppliers

Since 2003, we have conducted more than 830 third-party audits of existing and prospective Tier 1 suppliers in 20 countries. The audits provide feedback to Ford and suppliers about how well they are meeting legal requirements and Ford's expectations. They also provide insight into the effectiveness of our training programs. 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 2011, we conducted audits across the 17 target countries. The findings from the 2011 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 2011 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. We continue to engage with our suppliers to develop and implement appropriate corrective action plans. 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 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.

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 2012, we will continue to conduct supplier assessments across the target countries as necessary. We constantly monitor approaches developed by other organizations and industries in 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.

Related Links

This Report

- Supply Chain Data

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 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 the 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. (See, for example, the known supply chain stages associated with conflict minerals.) This makes tracing the source of raw materials very challenging. We have analyzed several select raw materials from a strategic perspective to identify sustainability risks and opportunities related to extraction, use and end-of-life treatment. 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' 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 recycling 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.

In the last six years, 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 issues in raw material extraction.

Communication is a key aspect of due diligence for responsible sourcing. We are continuing to fine tune all aspects of our communication in this area. Historically, the information that we have shared with stakeholders has been voluntary. We have primarily shared this information through direct communication 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

Related Links

This Report

- Conflict Minerals
- Conflict Minerals: Known Supply Chain Stages
- Forced Labor and Human Trafficking in Supply Chains
- Sustainable Materials

External Websites

- Automotive Industry Action Group

(conflict minerals). Our 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 on these issues 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 two 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)

Conflict Minerals

ON THIS PAGE

Related Links

This Report

- Creating a Sustainable Supply Chain through Our Aligned Business Framework
- Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility
- Materials Management

External Websites

- AIAG Conflict Minerals Work Group
- Conflict Free Smelter Program
- Public-Private Alliance for Responsible Minerals Trade

In the U.S., a new law passed by Congress and signed by President Obama in 2010 – the Dodd-Frank Wall Street Reform and Consumer Protection Act – included a provision relating to conflict minerals. The provision requires many manufacturers to report to the Securities and Exchange Commission (SEC) annually on whether their products contain metals derived from conflict minerals, and if those metals are necessary to the functionality and production of their products. The sourcing region subject to full reporting includes the Democratic Republic of Congo (DRC) and the nine surrounding countries. According to the federal legislation, columbite-tantalite, cassiterite, wolframite and gold ores – which are refined into tantalum, tin, tungsten and gold, respectively – are considered to be conflict minerals.

The term *conflict minerals* generally refers to those minerals originating from the DRC and neighboring countries that may have directly or indirectly contributed to the financing of armed groups. Such armed groups may be responsible for violence – often toward women and children – and human rights violations in the DRC. Armed groups may directly manage a given mine or tax the mine and/or the transport routes for the minerals. The minerals then typically change hands six to 10 times before they are incorporated into end products. (See the known supply chain stages associated with conflict minerals.) The metals ultimately derived from conflict minerals may be used in a variety of automotive applications, including onboard electronics, metal alloys, lubricity coatings, hot-dip coatings and trim components.

Ford is concerned with the potential connection between the automotive industry and conflict in the DRC region and is working with multiple stakeholders, including the automotive industry, to address these supply chain concerns. Initial research and engagement have demonstrated that the underlying causes of conflict in this region are complex. A multilateral approach to solutions will be required, and we believe that companies in the downstream supply chain for these minerals have a role to play. We intend to require suppliers to use only metals that have been procured through a validated supply chain, so as to ensure that they have not, at any point, financed conflict. The processes to support validation are in development by local governments, industry groups, international organizations and NGOs, with support from governments outside of Central Africa. While these processes are being developed and implemented, Ford is taking action to educate ourselves and our suppliers, initiate automotive industry activity and begin the necessary due diligence.

Ford's Conflict Minerals Due Diligence Process

Ford has found the guidance provided by the Organisation for Economic Co-operation and Development (OECD) to be particularly useful in designing due diligence processes for the Company. This framework, which Ford helped to develop through multi-stakeholder dialogue, provides practical guidance to companies throughout the supply chain on a set of actions that can be taken to ensure responsible due diligence. We are currently working through the OECD's five-

step process while also participating directly in the pilot implementation phase of the framework with the OECD.

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OECD Five Step Process

Step 1: Establish strong corporate management systems

Step 2: Identify and assess risk in the supply chain

Step 3: Design and implement a strategy to respond to identified risks

Step 4: Third-Party audit of Smelters/Refiners' due diligence practices

Step 5: Report annually on supply chain due diligence

Ford's Actions to Date

Step 1: Assigned accountability and cross-functional team; revised policy and supplier guides to address conflict mineral issues

Step 2: Require supplier material content reporting and assign prioritization of suppliers based on declared content

Step 3: Balanced strategy of Ford and industry action to ensure robust sourcing policies, practices, and reporting

Step 4: Participation in the Conflict Free Sourcing Program through AIAG

Step 5: Public Disclosure in Ford Sustainability Report, anticipated formal SEC report for 2013 FY

Multi-Stakeholder Collaboration

OECD: Ford provided input to the creation of the OECD Due Diligence Framework and participates directly in the pilot implementation phase with the OCED as well as indirectly through AIAG

Public Private Alliance (PPA): Ford sits on 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 chairs the Conflict Minerals Workgroup at the AIAG which pursues common solutions for the automotive industry

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 the Supply Chain Sustainability function within Global Purchasing and is supported by the Materials Management, Corporate Sustainability, Government Affairs, Public Affairs and Legal teams. A clear target has been established for 2012 supplier due diligence reporting, which covers the majority of the identified material use in parts provided to Ford. The Purchasing organization is responsible for working with suppliers as well as tracking progress,

reporting and achieving the target.

In 2012 we revised Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility. Since 2004, our contract terms with suppliers have expressly encouraged our suppliers to adopt and enforce a similar code of practice and to have their subcontractors do so. We have also provided very clear guidance on supply chain due diligence and sourcing from conflict-affected and high-risk areas in our Supplier Social Responsibility Web-Guide, which is incorporated into our Standard Terms and Conditions.

In addition to encouraging our suppliers to adopt and enforce a code of practice similar to Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility, we also include explicit human rights terms in all of our contracts with suppliers. We engage with our suppliers on the topics of policy and management systems through our strategic supplier framework (the Aligned Business Framework). Our ongoing work with these suppliers includes the development or enhancement of supply chain sustainability management. It is important that we fully align with our suppliers on the approach to responsible sourcing of raw materials so as to avoid, where possible, unintended consequences, such as absolute bans on sourcing from the 10 countries listed in the U.S. legislation.

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Identifying and Assessing Risk in the Supply Chain

Starting in 2011, we have been asking our global production supply base to identify the use of tantalum, tin, tungsten, gold and their derivatives and report that use by material weight into an existing automotive industry database (the International Materials Database System or IMDS, which we use to track the material content of our vehicles). Though the database currently tracks material content to monitor for the presence of certain regulated substances, it does not indicate where materials originated. The results from 2011 have been used to assess risk in the supply base for the use of the materials and to prioritize follow-up with suppliers for further information. The expectation for 2012 is that suppliers will continue to track and improve material content reporting for conflict minerals while also identifying smelters used. A red flag system is applied based on materials reporting (or lack thereof), and the system will evolve as the scope of information collected from suppliers grows.

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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 from all parties involved in validation pilot projects in Central Africa and along the supply chain routes that may ultimately lead to our vehicles. Therefore, our strategy is purposely dynamic, to allow for continued development and improvement. Given the scope and complexity of the issue, it is also a balanced strategy that relies on both Ford and collective industry action to maximize impact. A key source of insight for us on trends and practices is the multi-stakeholder forum provided by the OECD for the pilot implementation phase of the due diligence framework.

Upon initial engagement with our global supply chain, it has become clear that there is a need for information, education, guidance and tools. We are filling this need in several ways:

1. Ford is pursuing two-way communication with suppliers in face-to-face meetings, direct dialogue and surveys. We anticipate our communication with suppliers to be part of an iterative information-gathering process in which we collect information, evaluate the validity of that information and improve upon it with each cycle of reporting. This will contribute to a robust and complete picture of Ford's efforts to ensure responsible mineral sourcing throughout our supply chain of 1,400+ production suppliers.
2. Ford is leading the Conflict Minerals Workgroup at the AIAG. In addition to providing common guidance from our executives and an informational webinar to the automotive population on the subject, the Workgroup has hosted in-person events intended to provide information, guidance and dialogue on responsible sourcing and conflict minerals.
3. As a leading member of the AIAG, Ford has advocated for and helped to establish formal cooperation with electronics and telecommunications industry groups so that the various sectors can commonize tools for suppliers. These tools include a reporting template as well as software and web-based tools that will enable robust reporting.
4. Ford sits on the Governance Committee of the Public-Private Alliance for Responsible Minerals Trade (PPA), a new, joint initiative between governments, companies and civil society that seeks to support supply chain solutions to conflict minerals challenges in the DRC

and the Great Lakes Region (GLR) of Central Africa. The PPA is being launched as a joint effort with U.S. State Department, the U.S. Agency for International Development, nongovernmental organizations and companies/industry organizations. We hope that our participation in this Alliance will contribute to scalable, responsible, self-sustaining minerals trade in the DRC and GLR.

This suite of activities will appropriately address the risks identified and anticipated.

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Smelter Verification

To fully understand the possible presence of conflict minerals in products and processes, it is critical to identify upstream and downstream portions of the supply chain from the central “pinch point” – the smelter or processor. The OECD conflict minerals due diligence framework recommends that downstream companies such as Ford be responsible for identifying the smelters used in the supply chain and ensuring that those smelters are appropriately validated as sourcing minerals that have not financially supported conflict. Ford is actively participating in and supporting the Conflict Free Smelter Program as a representative of the AIAG Workgroup. It is our intention to require suppliers to use only metals that have been procured through a validated supply chain, so as to ensure that they have not, at any point, financed conflict.

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Annual Reporting

We will continue to refine and improve our processes for implementing the necessary due diligence on 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 due diligence process is reporting annually on our due diligence. We already report on our efforts in this Sustainability Report. In the future, we will also provide more specific data on our progress regarding material and smelter identification in formal SEC reporting.

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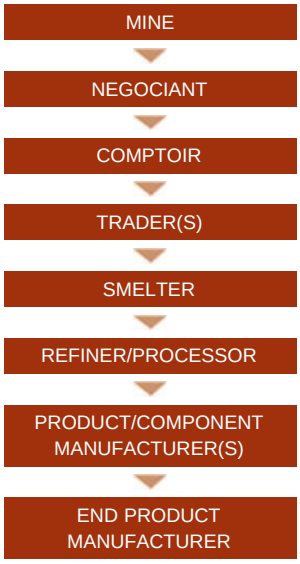
Conflict Minerals: Known Supply Chain Stages



In addition, illegal channels may operate in parallel to this known supply chain, either by leveraging these actors, or by smuggling and other means.

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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 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 the use of 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 Standard Terms and Conditions forbids 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 Standard 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 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 AIAG.
  - Ford and five other automakers at the AIAG have funded and created training for buyers

Related Links

This Report

- Assessing Suppliers
- Building Supplier Capacity through Localized Training and Collaboration
- Charcoal and Pig Iron
- Creating a Sustainable Supply Chain
- Ford's Code of Human Rights, Basic Working Conditions and Corporate Responsibility

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 is made available to all companies for free on the AIAG website.

- Ford regularly conducts 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 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.

Related Links

This Report

- Expanding Human Rights Impacts on the Supply Chain
- Human Rights in the Supply Chain

External Websites

- Automotive Industry Action Group

Pig Iron Producers

Supply Chain Environmental Management

Ford has worked with our suppliers for decades to improve the sustainability of their products and processes – and to gain their support in improving our own sustainability performance.

We have committed to providing suppliers with a range of support and assistance based on our experiences in this area. Ford was the first automaker to require its suppliers to certify their environmental management systems to the globally recognized standard ISO 14001. 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.

Related Links

This Report

- Building Supplier Capacity through Localized Training and Collaboration
- Climate Change
- Greening Our Operations
- Greening Our Products
- Supplier Greenhouse Gas Emissions

External Websites

- ISO 14001

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.

The formal contractual supply agreements that we execute with our suppliers 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 information on our use of recycled materials please 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 like 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

Each Tier 1 manufacturing site providing parts to Ford is required to have ISO 14001 certification. In addition, we integrated environmental management content and expectations into the supplier training programs conducted from 2011 forward. We believe this will help build supplier capability to manage these issues effectively. This content expansion further aligns our training activity with our Code of Human Rights, Basic Working Conditions and Corporate Responsibility and other supplier expectations and guidelines.

Engagement with Suppliers' Corporate Management

As part of the 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 annual 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). Through the AIAG, we helped to establish common industry guidance and a reporting format for greenhouse gas (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 Scope 3 greenhouse gas 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 Greenhouse Gas Emissions.

During 2011, Ford was an active participant in and sponsor of AIAG events such as The Road to Corporate Responsibility: An Automotive Conference, and the Greenhouse Gas and Energy Symposium. 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, 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 are continuing our work to better understand the risks and opportunities of greenhouse gas (GHG) regulation and climate change for our suppliers and, by extension, for our Company.

In 2010, we launched a pilot program with a select group of our suppliers to better understand the collection and reporting of greenhouse gas emissions data in our supply chain. In 2011, we significantly expanded the program to include a wider range of suppliers and commodities. 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. We have a comprehensive commitment and strategy to reduce GHG emissions from our products and operations, detailed in the Climate Change section, 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 in more detail in this section, 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 progress over time.

Scope 3 Greenhouse Gas Accounting and Reporting

Ford was a “road tester” of the Scope 3 Greenhouse Gas Accounting and Reporting Standard developed by the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD). Ford had also been an original participant in the review and development of the internationally accepted Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, which addresses Scope 1 (direct) and Scope 2 (indirect) emissions.

The new Scope 3 (Corporate Value Chain) Standard provides a step-by-step methodology for companies to quantify and report their Scope 3-related GHG emissions; it is intended to be used in conjunction with the GHG Protocol Corporate Accounting and Reporting Standard. It provides a standardized method to inventory the emissions associated with corporate value chains, taking into account impacts both upstream and downstream of a company’s operations.

The Scope 3 Standard was developed through a global, collaborative, multi-stakeholder process, with participation from more than 1,000 volunteer representatives from industry, government, academia and nongovernmental organizations. The road-testing process was designed to provide real-world feedback to ensure that the standard could be practically implemented by companies and organizations of different sizes and from a variety of sectors and geographic areas around the world. The WRI/WBCSD collected feedback from 60 stakeholders and issued a draft standard in November 2010. Ford was the only automotive company to participate in the road test. The final Scope 3 Standard was published by the WRI/WBCSD in October 2011.

Carbon Disclosure Project’s Supply Chain Program

In 2011, Ford participated in the Supply Chain Program of the Carbon Disclosure Project (CDP) for the second year. Through this effort, we work with selected suppliers to gather qualitative as well as quantitative information about the suppliers’ management of climate risks and emissions. Ford participated to gain experience with the supplier survey and to better understand our suppliers’ capability to measure, manage and report their emissions. Based on responses in 2011, 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.

Ford’s Supply Chain GHG Emissions Survey

As part of Ford’s engagement with suppliers on supply chain GHG emissions, we expanded our survey from 35 suppliers in 2010 to 128 in 2011. The 128 participating suppliers account for nearly 60 percent of our $65 billion in annual purchases[1]. In 2011, we included logistics and information technology suppliers in addition to vehicle parts suppliers. Suppliers were chosen to participate in

Related Links

This Report

- Climate Change

the GHG survey based on a variety of criteria, which included 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

In 2011, Ford surveyed suppliers using both the CDP Supply Chain Program questionnaire and the AIAG GHG survey, which was developed with input from Ford, other OEMs and Tier 1 suppliers and service providers. Ford used both survey questionnaire formats to capitalize on the differing strengths of each form 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 2011, we achieved an overall response rate of 86 percent, exceeding our internal objectives for this round of voluntary surveys. This response rate also significantly exceeds the average supplier response rate of 44 percent for all companies participating in the CDP Supply Chain Program. We believe that this high response rate is due in part to the active support and training Ford provided to suppliers throughout the process such as webinars, guidance documents and one-on-one assistance.

Overall, we continued to find that, for the most part, our suppliers are engaged in the issue of climate change and working to reduce their GHG emissions. However, there was still wide variability in suppliers' readiness to measure and report on GHG emissions.

Some Key Findings from Our 2011 Supplier GHG Survey

Of the suppliers responding...

A large majority of suppliers have developed management and governance structures to address climate change.

Over **90%** have a person or committee that is directly responsible for managing climate change issues within their company, and more than 85 percent of those were board level or senior managers.

80% have integrated climate change management into their overall business strategy.

A large majority of suppliers have active greenhouse gas emissions-reduction programs.

Over **60%** have set greenhouse gas emissions-reduction targets, and more than 80 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.

Over **50%** 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.

Nearly **80%** answering this question responded that use of their goods and/or services directly enables GHG emissions to be avoided by a third party.

About **50%** have a strategy for engaging their own supply chain on GHG emissions issues.

In 2012, we will again survey the same 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.

1. $65 billion is Ford's annual purchase amount as of year-end 2010.

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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.

Related Links

This Report

- Conflict Minerals
- Sustainable Materials
- Sustainable Raw Materials

External Websites

- REACH

More and more countries are adopting regulations governing the use of materials, including 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. 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. South Korea and Japan will also soon adopt REACH-like regulations to manage their chemicals. 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 drafting a “green chemistry” law, scheduled to be finalized in 2012, which will require manufacturers of selected products sold in California to identify safer alternatives to a potential range of 3,000 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 must replace them 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. 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.

The recent focus on conflict minerals and 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. These issues are discussed in the section on sustainable raw materials.

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 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. It is also a tool Ford is beginning to leverage to identify risks associated with conflict minerals and other raw materials.

To further help our suppliers manage their materials and substance data, Ford developed and launched 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.

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 and Japan, and REACH in the EU.

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 North American Automotive Industry Action Group'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.

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Logistics

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Related Links

This Report

- Quantifying Our Environmental Impacts
- Supplier Greenhouse Gas Emissions

Ford's physical logistics operations provide 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 account for a relatively small percentage of total vehicle 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

Ford MP&L applies a global approach to addressing the environmental aspects of our logistics operations. In 2008 we established an international team to coordinate our reporting activities and to share best practices. We manage activity via subject matter experts in our four operating regions (Europe, North America, Asia Pacific and Africa, and South America), and in 2010 we created a central "green logistics" intranet site to assist in standardizing our procedures and communicating best practices. Our major focus has been on greenhouse gas (GHG) emissions, with two key work streams – GHG emissions reporting and GHG emissions reduction. The fact that freight emissions and fuel usage are so closely tied means that our focus on emissions reduction encourages actions that help us achieve other environmental goals as well, such as improving air quality and reducing traffic flows.

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Freight 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 in our European operations in conjunction with our European lead logistics provider, DHL. Since then we have greatly expanded our reporting on both the types of transportation used and the regions covered. 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, and we are tracking non-CO_2 GHGs including N_2O and methane. We are also collecting GHG emissions data and reporting internally for all our regions. We continually review the latest available industry information to improve the quality of our reporting. For example, for 2012 we began using newly published CO_2 data from the Clean Carrier Working Group for our ocean freight emission calculations.

Tracking transport emissions data 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 role in supporting the development of internationally recognized reporting standards, and we seek to ensure that our approach to freight GHG is aligned with global best practice. 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 covers freight CO_2 reporting. In Europe, we have been a member of the U.K. Department for Transport’s Low Carbon Transport Supply Chain Steering Group and helped formulate their Guidance on Measuring and Reporting Greenhouse Gas Emissions, published in December 2010. We are also taking a lead in promoting the subject of freight carbon reporting among the automotive industry and have delivered well-received presentations to various trade associations, including the Automotive Industry Action Group in North America and the Society of Motor Manufacturers and Traders in the U.K. In Asia, we participated in the inaugural Green Freight China seminar in Beijing, run jointly by Clean Air Initiative-Asia and the Chinese government.

We are now reaching out to engage our logistics providers in addressing CO_2 issues. Sixteen of our major North American and European logistics service providers contributed to our submission for the 2011 Carbon Disclosure Project Supply Chain Survey.

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 (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, 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 are identified that 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 specially designed 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 in to 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 and Africa 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 a considerable saving in emissions.

We are now working globally to share best practices between regions and to 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

For 2012, we are continuing to expand our CO_2 reporting and reduction initiatives. Within Material Planning and Logistics, 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 2011, Ford purchased $5.08 billion in goods and services from approximately 250 minority-owned suppliers and $1.06 million in goods and services from more than 150 women-owned businesses. Our 2011 results were an improvement over 2010, exceeding our sourcing goals for both minority- and women-owned suppliers.

Ford's minority- and women-owned suppliers are also playing an important role in the Company's revitalized and expanding portfolio of high-quality, safe, fuel-efficient products equipped with smart technologies. These opportunities have provided minority- and women-owned suppliers with new business valued at more than $661 million, during a period when purchasing budgets and the supply base were being downsized. Examples include the following:

- Abel Services, a women-owned construction supplier based in Louisville, Kentucky, was sourced significant business in 2011. As a result of being the primary construction contractor for the Ford Escape program at the Louisville Assembly Plant, Abel's business increased by 161 percent compared to 2010. Also, Abel Services is the Construction Commodity Manager (CCM) for both Louisville and Kentucky Truck plants.
- Dura Automotive Systems, based in Auburn Hills, Michigan, is owned by Lynn Tilton's Patriarch Partners investment company. Dura, which makes a variety of control systems, engineered assemblies and other products, supplies the award-winning heated power rear sliding window for the F-150 pickup.
- Global Parts & Maintenance, a Hispanic business enterprise owned by Rudy Ureste and based in Westland, Michigan, provided consolidation and leveraging services for all of Ford's U.S.-based plant floor computer hardware.
- Piston Automotive Group, an African-American-owned business owned by Vinnie Johnson and based in Michigan, has successfully diversified their product offerings and is now a strategic Ford supplier in both the production and nonproduction areas. Piston has teamed up with NetApp and is now the sole provider of Network Attached Storage at Ford.

Our record of minority supplier development has earned Ford a seat at the "Billion Dollar Roundtable," an exclusive group of 17 companies that purchase a minimum of $1 billion annually from diverse suppliers. In addition, the United States Hispanic Chamber of Commerce named Ford to its Million Dollar Club for our work with Hispanic-owned businesses.

In October 2011, Ford was named "Corporation of the Year" by the Michigan Minority Supplier Development Council (MMSDC). This was the second year in a row Ford received the award, which recognizes an automaker's commitment to developing and growing a diverse supply base. Ford was 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.

Related Links

This Report

- Diversity and Inclusion

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 2011, more than 400 of our largest Tier 1 suppliers purchased $1.66 billion from minority- and women-owned enterprises in support of Ford business.

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Data

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A. Working Conditions Assessment Status for Supply Chain

Working Conditions Assessments (as of 12/31/11)	Americas	Asia Pacific and Africa	Europe	Global Total
Average violations per assessment	11.7	11.1	11.8	11.4
Assessments completed to date	276	480	78	834
Follow-up assessments completed to date (third party and/or internal)	311	480	86	877

Working Conditions Training (as of 12/31/11)	Americas	Asia Pacific and Africa	Europe	Global Total
Training sessions completed to date	61	48	13	122
Total number of attending companies	728	772	266	1,766
Total number of trained managers	1,350	803	261	2,414

	Global Total
Training cascade to management, individuals trained	20,544
Training cascade to workforce, individuals trained	372,998
Communication to suppliers, number of sub-tier companies	76,617

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In This Report:

- Human Rights in the Supply Chain: Ford's Global Working Conditions Program

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Voices

IN THIS SECTION

Voice: Bennett Freeman

Senior Vice President, Sustainability Research and Policy, Calvert Investments

Someone other than myself once said that the acid test of corporate responsibility is how a company manages labor and environmental issues not just in its own operations, but across its supply chain.

Voice: Christine Bader

Nonresident Senior Fellow, The Kenan Institute for Ethics at Duke University

Think of your Top 10 list of the biggest problems the world faces today. I would venture a guess that we would all include variations on the economy and income inequality; climate change and pollution; health and health care; and perhaps something to do with civil rights.

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Bennett Freeman

Senior Vice President
Sustainability Research and Policy
Calvert Investments

Someone other than myself once said that the acid test of corporate responsibility is how a company manages labor and environmental issues not just in its own operations, but across its supply chain. I believe that Ford has met that acid test by demonstrating greater transparency on supply chain labor and human rights in particular.

The demand for supply chain transparency is irreversible, and the corporate social responsibility (CSR) agenda has moved well beyond philanthropy and community. We first began to see interest in supply chain issues in the mid 1990s, in the context of sweatshop labor campaigns against footwear and apparel companies. That focus widened quickly to other sectors, including the auto industry and consumer electronics, and we continue to see reverberations today.

I would credit Ford with recognizing relatively early the significance of labor concerns in the supply chain, and I believe Ford has been willing to discuss and address these issues longer than most of its industry peers.

In the summer of 2011, Calvert determined that Ford had met all criteria for inclusion in our Signature Strategies Funds, the first U.S. automaker to do so. To be included, companies must demonstrate robust environmental, social and governance performance. We were impressed with Ford's strong workplace policies and programs for its own operations and those of its suppliers, and with the leadership Ford has shown in addressing conflict minerals in its supply chain.

Our analysts also liked the fact that Ford's Code of Basic Working Conditions endorses both the U.N. Declaration of Human Rights and the ILO Tripartite Declaration of Principles. In other industries, it's been like pulling teeth to gain acknowledgment of the ILO. We also were pleased with Ford's working conditions plant assessments, its identification of high-risk countries, and its willingness to help with capacity building with strategic suppliers.

More and more, companies are recognizing that just as management of supply chain issues, such as quality and delivery, is important to business, so, too, is sound management of supply chain labor and human rights. Companies face not just operational risks, but brand reputation risks, too. My own view is that when it comes to CSR, it often takes a combination of external pressures and internal recognitions to create positive change.

There has long been a gap between so-called "mainstream" and "socially responsible" investing, but that gap has narrowed significantly, particularly around issues of executive compensation, corporate governance and climate change.

A number of pension funds in the U.S. and Europe have stepped up their scrutiny of these matters, and some of the major Wall Street asset managers now have their own Environmental, Social and Governance (ESG) performance indices. Although we haven't seen a whole lot of mainstream interest in supply chain labor issues, I think that will come next.

Calvert and others in the Socially Responsible Investing (SRI) community welcome the growing focus and commitment among mainstream investors to take these issues seriously. I do want to

Related Links

This Report

- Ford's Code of Basic Working Conditions

External Websites

- ILO Tripartite Declaration of Principles
- United Nations Declaration of Human Rights

note that although Calvert is a leader in the so-called SRI space, we see ourselves as mainstream. After all, we have half a million shareholder accounts in the U.S. and invest in some of the world's largest multinationals. In other words, the sharp distinction between SRI and mainstream investing is blurring, and I think that's a positive for everyone.

Even the companies that are most committed to supply chain sustainability will still have gaps and will still make mistakes. The challenge is to embrace and demonstrate a commitment to continuous improvement, and to understand that there are no final victories. You can't take a snapshot and say, "By god, we've cracked the code." Working conditions constantly change across industries, particularly as new technologies emerge.

The reality of supply chain issues in the 21st century means that problems will occur and recur, so commitment, adaptation and innovation must be the constant watchwords of any corporation.

SUPPLY CHAIN

- Creating a Sustainable Supply Chain
- Industry Collaboration
- Human Rights in the Supply Chain
- Sustainable Raw Materials
- Supply Chain Environmental Management
- Supplier Diversity Development
- Data
- Voices
  - Voice: Bennett Freeman
  - Voice: Christine Bader

Christine Bader

Nonresident Senior Fellow
The Kenan Institute for Ethics at Duke University

Think of your Top 10 list of the biggest problems the world faces today. Each of us would have different issues and priorities. But I would venture a guess that we would all include variations on the economy and income inequality; climate change and pollution; health and health care; and perhaps something to do with civil rights, such as discrimination on the basis of race or sexual orientation.

We can come up with examples of how companies are addressing every one of the problems we identified – and also exacerbating them. And I'll bet we could come up with examples of how the same company is doing both at the same time.

Economic development, led by the private sector, has lifted millions if not billions of people out of poverty. Business has delivered critical goods and services around the world, positively impacting human rights. But it's also clear that companies can negatively impact human rights: from stifling freedom of expression by squelching dissent and engaging in censorship; to limiting freedom of mobility by holding workers' identity papers; to the whole range of labor abuses.

As a global society, we need to focus on how we can eradicate the negative impacts and enhance the positive ones. We can't tolerate people getting hurt in the normal course of business. And – bonus – there's a bottom line imperative. Better treatment of workers leads to higher productivity and lower employee turnover. I'm not just talking about providing flextime and daycare, but allowing bathroom breaks and not beating people. It's hard to believe that we need to fight for this in the 21st century, but sadly it's true.

This is not about distracting companies from their core business, as critics like to argue. It's about better aligning the needs of business with the needs of society. The modern international human rights framework, the Universal Declaration of Human Rights, was created in 1948 by states for states, because governments at that time were all-powerful, and companies were not as large as they are today. While it can be awkward to graft this human rights framework onto business, it provides an excellent starting point.

Taken at its most basic level, companies should not hurt people. Most companies have figured that one out. What companies need to be doing more of is conducting due diligence, including in their supply chains. Investors are increasingly recognizing that "ESG" – environmental, social and governance – problems indicate broader management problems.

Apart from what companies themselves can and must do, we need nongovernmental organizations to collaborate with business. Advocacy is important, but companies can't and shouldn't be expected to be human rights and development experts. NGOs can play a critical role in representing the interests of the communities that companies are affecting.

And while the influence of big business in government is rightly scrutinized, companies should be consulted in the drafting of regulations. Companies often have more staff and experience on the ground than governments, and can share what seems feasible and what might actually solve the problems that legislation is meant to address.

Related Links

External Websites

- United Nations Declaration of Human Rights

The wonderful thing about the explosion of corporate responsibility over the last 20 years is that more and more companies are engaged in conversations about their role in society. The downside, however, is that the whole notion of corporate responsibility has gotten diluted with philanthropy, and with recycling programs, and with sending employees out in matching T-shirts to go paint a wall. These things are all great, but what I'm interested in, and what we all should be concerned about, is the impact a company's core business has on human beings.

We need to learn from what we have already accomplished so we're not reinventing the wheel, and we must better align what we're already doing across companies and industries. I visited a factory in Thailand where, to comply with safety codes from various customers, the manager had three fire extinguishers at different heights on the wall, and three different colored strips of tape pointing toward the exits. What a waste of time and resources.

Despite all that needs to be done, I'm optimistic about improving business practices around the world. Consumers are waking up to where their stuff comes from; investors and regulators are demanding that companies take responsibility for their supply chains; the next generation of business leaders doesn't want to work for the next Enron, Lehman or Madoff. Even in developing countries, there is a growing recognition of the business imperative to respect human rights.

To hear more from Christine Bader, view her TEDx talk "Manifesto for the Corporate Idealist"

People

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.)

Approximately

166,000

Ford employees globally[1]

More than

55,100 hours

of time contributed by employees to over 244 volunteer projects touching 1.5 million lives during Ford's sixth-annual Global Week of Caring

Investing in Communities

See some of the community-related projects we are working on around the globe.

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.

Charitable Contributions

In 2011 we contributed a total of nearly $30 million to charitable organizations.

Connecting with Customers

We continued our innovative use of social media to connect with customers.

1. As of April 2012.

PEOPLE

- Workplace
  - Employees
  - Workplace Health and Safety
- Dealers
- Communities
- Customers
- Data
- Case Studies
- Voice: Felicia Fields

Workplace

Over the last year, we made progress in a number of areas related to our employees. For example, we:

- Pledged to add 12,000 hourly jobs in the U.S. by 2015.
- Reached nine new collective bargaining agreements globally, including one with the UAW.
- Announced hourly employee profit-sharing and salaried employee bonuses for the 2011 performance period.
- Continued to win recognition for our diversity efforts.
- Marked the first 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.

Home > People > Workplace

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 as one team during difficult times. For several years in our Sustainability Reports, we talked about the reductions in our salaried and hourly workforce, which were necessary as part of our multi-year effort to return our North American operations to profitability. Today, we're hiring again in North America.

Employees at Michigan Assembly Plant celebrate the launch of the 2012 Ford Focus

In the fall of 2011, as part of a new agreement with the UAW, we pledged to add 12,000 hourly jobs in the U.S. by 2015 – 5,750 more than the 7,000 jobs (6,250 of which were hourly) we previously pledged to add by year-end 2012. We're also adding 3,000 new jobs in our Asia Pacific and Africa region to help keep pace with product demand in that region. And, as a result of the Company's strong performance, we are in a position to provide competitive compensation and benefits. For example, we announced in January 2012 that the new profit-sharing formula in our UAW contract will generate $6,200 per eligible employee on a full-year basis. At year-end 2011, we had about 41,600 hourly employees in the U.S. Salaried employees 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. Our employees are the ones who are helping us do just that. A skilled and motivated workforce is the essence of Ford, today and in the future. The Company is focused on developing a skilled and motivated team, while providing a safe, respectful and inclusive environment.

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.

As of April 2012, we employed approximately 166,000 individuals. 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. For more information about our collective bargaining agreements, please refer to our Form 10-K (pdf, 1Mb).

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.

Related Links

This Report

- Diversity and Inclusion
- Employee Engagement
- Employee Satisfaction
- Leadership Development
- Workplace Health and Safety

Corporate.ford.com

Ford 2011 Form 10-K (pdf, 1Mb)

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 Michigan or China, 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 focus 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.

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 workplace satisfaction. 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 2011, 75 percent of our salaried employees participated in the survey, which includes a total of 53 items, eight of which make up what we call the Employee Satisfaction Index (ESI). Sixty-nine percent of respondents gave favorable ratings on the ESI in 2011, up one percentage point from 2010 levels. We continue to be above external benchmarks on this index.

The area showing the greatest improvement was training and development. Other areas showing improvement included employee satisfaction with supervision and employee adoption of the ONE Ford behaviors. In addition, employee satisfaction with actions that are taken to improve quality improved from its already-high level.

As part of our efforts to increase satisfaction, we are constantly improving our strategies for fostering open dialogue with employees. We have been enhancing our internal communication efforts to build trust and increase transparency. For example, we hold regular interactive webcasts with all employees, during which employees can submit questions directly to top executives. We also have a web-based forum for submitting and discussing innovative ideas.

In 2010, we created another index to measure what employees value about being part of Ford. The new Global Skilled & Motivated Team Index provides insight into employee experiences in areas such as leadership quality, working together, employee development and work/life flexibility. This index, which can be considered a measure of our employment value proposition, was one of the areas of greatest improvement from 2010 to 2011.

For more information on the Pulse survey, see the Data section of this report.

Related Links

This Report

- Employee Data – Pulse Survey

PEOPLE

- Workplace
  - Employees
    - Supporting ONE Ford
    - Employee Satisfaction
    - Employee Engagement
    - Leadership Development
    - Diversity and Inclusion
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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 forums, from "town hall" meetings to intranet surveys and chats, from joint labor/management committees to diversity councils. For example, we work closely with our employees' unions to develop agreements and governance plans through a collective bargaining process. Policies and procedures involving information, consultation and negotiations with employees over changes in our operations (e.g., reorganizations, plant shutdowns, employee transfers and reductions) are negotiated with the appropriate union. 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 weekly webcasts, quarterly town hall meetings, manager-to-employee business cascades, surveys and informal communications, and we survey our salaried employees annually using the Global Pulse survey.

Our employees are also our global customers, and they can be strong ambassadors for our products. In Dearborn, information sessions called "Drive Events" are held to give employees the opportunity to 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.

Recently, we also have been using employees to help us with beta testing. In late 2011, for example, about 1,000 Ford employees began testing a software upgrade to MyFord Touch™. Employees are a terrific source of real-world feedback for us, and they're typically eager to help. The upgraded system will launch with 2013 models of the new Ford Escape, Taurus and Flex, and will be applied to existing vehicles equipped with MyFord Touch, including the Ford Explorer, Edge and Focus.

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.

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.

Related Links

This Report

- Communities
- Employee Data – Pulse Survey

Leadership Development

Employee development is critical if we're going to continue to execute 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 continue to invest in our employees, strengthen their technical and leadership skills and recognize them for delivering results that cultivate success. Even during our most difficult times, we kept a focus on learning and leadership development.

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, 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. Employees work with their managers to help them identify strengths and areas for improvement.

We provide a comprehensive range of learning and development resources that align with ONE Ford. These include web-based and classroom training, special projects, task forces, mentoring and coaching, all of which aim 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 "commonize" 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 offer global leadership development programs, including the Global Leadership Summit, which is aimed at executives and general managers, and the Global Executive Leadership Program, which is geared toward directors and senior managers. 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.

Easing Toward Retirement

In 2011, we began to pilot a phased retirement program that gives those nearing retirement age a chance to work part-time for six months. Through this program, the employees get a chance to prepare for life after retirement. The Company, meanwhile, is able to retain the knowledge of retiring workers by providing a lengthy transition period with the employees who will take over the responsibilities of retiring workers. We see this as a way to support those who are leaving our Company after what are often decades-long careers while also developing those who will continue to work at Ford.

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.

We are a global business, with many talented people working together. The more we embrace our differences within Ford, the better we can deliver what our customers want and the more successful Ford will be. 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. Diversity – including diversity of thought, experience, perspective, race, gender, faith and more – is embraced at every level of our organization. Our diversity makes us a better and a stronger company, by bringing in fresh ideas, perspectives, experiences and life responsibilities, and by fostering a truly collaborative workplace.

We have received more than 200 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 2011 Pulse survey, 82 percent of our workers globally believe Ford's management is committed to diversity.

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.

Related Links

This Report

- Diversity and Inclusion Awards
- Engagement and Community Data

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 using five strategic areas of focus:

- Leading the way – The executive leadership team, led by our CEO, champions diversity and inclusion at Ford. 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. They also “adopted” a local inner-city park for spring clean-up every year.
- Fostering a respectful and inclusive environment – Ford’s commitment to inclusion is incorporated in 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 2011, our CEO and other senior executives honored 34 teams and individuals in a global ceremony, with participation from Argentina, Brazil, Canada, China, Germany, India, Mexico, South Africa, 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 has 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 use “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 extremely 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, as well as several global Policies and Directives, directly address the issue of respect and inclusion. These include our:

- 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 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 or 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. 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 recognized by DiversityInc as a Top Company for Diversity since that award's inception. Specific diversity awards given in 2011/12 include the following:

- America's Top Organizations for Multicultural Business Opportunities – DiversityBusiness.com
- Best Diversity Company – *Diversity/Careers in Engineering and Information Technology*
- 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
- Diversity Elite 60 – *Hispanic Business*
- Diversity Leader – *Profiles in Diversity Journal*
- Employer Support of the Guard & Reserve Pro-Patria Award – Michigan Committee for ESGR, U.S. Dept. of Defense
- Freedom Award – Secretary of Defense Employee Support, U.S. Department of Defense
- 50 Best Places to Work – Glassdoor.com
- 40 Best Companies for Diversity – *Black Enterprise*
- Most Admired Employer for Minorities in Research Science – *U.S. Black Engineer & Information Technology*
- Top Five Best Companies to Work For in Argentina – *Apertura Magazine*
- Best Companies to Work for in Mexico – *Expansión*
- Bliss Leap Award – CareerBliss.com
- Top 10 Best Companies for Supplier Diversity – *DiversityInc*
- Top 25 Best Employers in India – Hewitt Associates
- Top 25 Supplier Diversity Company – *Hispanic Business*
- Top 50 Companies for Diversity – *DiversityInc*
- Top 50 Companies for Engineers – *U.S. Black Engineer & Information Technology*
- Top 50 Employers – *Minority Engineer*
- Top 50 Employers – *Workforce Diversity for Engineering & IT Professionals*
- Top 100 Employers – *Diversity Employer*
- Top 100 Employers – Stonewall (a U.K.-based lesbian, gay and bisexual advocacy group)
- Top Supporter of Historically Black Colleges and Universities – *U.S. Black Engineer & Information Technology*
- Top 100 Supplier Diversity Programs for African Americans – *Black EOE Journal*
- Top 100 Supplier Diversity Programs for Women – *Black EOE Journal*
- Top Company for Diversity & Inclusion – *UPTOWN Professional*
- World's Most Attractive Employers – *Universum*

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.

In 1999, Ford began a Safety Leadership Initiative aimed at making our workplaces safer. In the 12 years since, we have seen dramatic results, with overall injury rates dropping to a tenth of their previous levels. We are competitive within our industry; however, we want to be the best. The practices established in this initiative are so fully a part of how we run our business that we've dropped the term "Initiative" and now simply call it "Health and Safety Leadership."

The "health" part of health and safety is also an increasing focus for Ford. This is driven by growing recognition of the impact that health issues like heart disease, diabetes and obesity can have on the well-being of our employees, as well as 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.

Our top executives and managers remain committed to ensuring that our people remain safe and healthy while working as part of our ONE Ford team. Management compensation has been more heavily weighted to safety results, including serious injury performance.

We recently updated our health and safety management systems with a new Safety Operating System (SOS) that is part of our overall manufacturing strategy, the Ford Production System. The SOS 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.

For more about our workplace safety systems, see the corresponding pages on Safety Governance; Accountability; Safe Conditions; and Relationship Management

"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

- Accountability
- Health and Safety Governance
- Manufacturing
- Relationship Management
- Safe Conditions

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.

Our new Safety Operating System (SOS), a pillar of both our global manufacturing strategy and our ONE Ford values, supports the strategic plan for global manufacturing and provides a template for safety improvement. While the tasks within the SOS are not new, the system now provides a more detailed approach to ensure we address health and safety risks. The SOS assists our plants in identifying all the tasks required by our safety standards and how they should be managed.

We also conduct unannounced audits, as well as audits of special high-risk areas. Facility staff perform SOS self-assessments and more frequent internal audits to verify key processes. Any significant incidents are reported weekly on a global basis so plant managers at other facilities can learn from each incident and take preventive action.

Under the SOS, new safety processes identify and assign roles for individuals. Those assigned an “O” are the “owners” of the element; those assigned an “R” are “responsible” for doing the task; and those assigned an “A” are “accountable” for ensuring the task is done. We have also implemented cross-plant verification assessments, where the element “owners” from one plant visit another plant to verify self-assessments and help to identify gaps. This has proven to be a positive learning experience for both parties.

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.

Safety Culture Survey

We also conduct a safety culture survey, which was recently integrated into our overall annual Pulse survey of employees, to assess employee perceptions of our health and safety effectiveness. 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 2011 Pulse survey show that the vast majority of Ford salaried employees – 86 percent – are satisfied with the Company’s safety culture.

Accountability

We establish accountability for health and safety performance through our business planning 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 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.

We aim to improve the culture of workplace safety so employees feel they can point out violations made by their coworkers in an effort to improve safety for everyone.

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. For results, see the Workplace Safety data.

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.

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.

Health as a Strategic Advantage

As the Company continues its global expansion, we understand that our workforce is our most valuable asset. The continued good health of our workforce and their families remains a priority for the Company. We remain committed to ongoing evaluation and improvement of programs that promote good health, well-being, longevity and productivity of our workforce. 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 continues to be a concern for the Company. To mitigate our health care-related costs, 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.

We are 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 healthcare initiatives that aim to improve or change the dynamic of the healthcare marketplace.
- Developing new programs to improve the health of employees and family members who are affected by chronic diseases.

Globally, we remain committed to a comprehensive health strategy to ensure that our efforts are tailored to meet local health priorities and that our people receive quality health care when they need it. Our global health strategy highlights elements of health and wellness programs around the world including health screenings, educational programs and promotional campaigns. The identification and modification of personal health risk factors is a core element of our strategy. We continue to leverage our global strengths by improving the way we share and coordinate our health promotion programs. We use global health metrics 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 obligations.

Our 2011 Safety Record

The year 2011 marked the first since 1918 in which we did not have an employee work-related fatality. Tragically, however, we did experience two contractor fatalities – one in Brazil and another in Russia. Our primary objective remains zero fatalities on Ford property.

Overall, our safety record deteriorated slightly compared to 2010. A major safety indicator – the lost-time case rate – went down slightly, going from 0.54 to 0.57. We experienced 143 serious injuries among our direct employees, compared to 111 the previous year. In most of the cases, the causes were related to slip, trip and fall events or performing work not according to our standards. These numbers unfortunately rose by 28 percent from 2010.

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 2011, we had 130 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 organization awareness of potential risks and a willingness to share with others so the same events do not happen elsewhere.

We are attributing part of the increase in injuries to improved reporting. We have been encouraging all employees to alert management to every injury, 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.

We also attribute the rise in injuries to greater activity within our manufacturing operations. As we have rebounded from the economic downturn, our plants are operating at greater capacity 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.

Currently, we do not have a common data-gathering system for work-related injuries around the globe. We recently began the process of upgrading our information technology to create a common system for tracking injuries. 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 working to develop a common global approach to the wearing 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 safety features result in fewer injuries.

Improving our safety record is not only good for our employees, it's good for our business.

For more information, see the Workplace Safety data page of this report.

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Dealers

Our dealers are a critical part of our success and important economic contributors to the communities in which they work. They represent the face of Ford in communities across the U.S. and provide employment, tax support, community leadership and customer service. Ford and Lincoln dealers in the U.S. alone employed 158,000 individuals at the end of 2011, with an annual payroll of approximately $6 billion. Worldwide, we had 11,790 Ford and Lincoln dealerships as of year-end 2011.

In 2011, we continued to right-size our dealer network to current and expected U.S. demand, particularly in some of our largest metropolitan areas. In these ongoing efforts to address overcapacity, we have been working collaboratively with our Ford and Lincoln dealers to consolidate and restructure.

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 2010, as lower incentives, newer vehicles and consumer desire for in-car entertainment features boosted the purchase price for new vehicles.

Engaging with Dealers

Dealer relations are a key priority for us. The 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. In 2011, we separated the Ford and Lincoln National Dealer Councils to better focus on the unique priorities of each brand. In an annual process, dealers 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 advisory panels, and the topics they address, are as follows:

- Customer Viewpoint Advisory Panel – customer satisfaction rating system, Viewpoint survey
- Product Committee – current and future product cycle plan, including lineup, design, styling and color/trim
- Order Complexity Task Force – reduction of vehicle ordering complexity, order guide simplification
- Marketing Dealer Advisory Board – vehicle packaging strategy, advertising, incentive programs
- Training Advisory Board – dealership employee training and recognition
- Parts and Service Manager Advisory Committee – fixed operations programs, including employee recognition/retention
- Commercial Truck Advisory Board – sales, marketing and product programs
- Service Marketing Advisory Committee – service marketing strategy and advertising
- Consumer Experience Committee – approaches for enhancing the overall consumer experience and network profitability

The feedback gathered through these interactions has helped us develop programs, change policies and enhance processes to improve customer handling and other significant elements of the dealers' businesses.

Related Links

This Report

- Electrification: A Closer Look
- Green Buildings

In addition to the feedback provided through the Dealer Councils and Advisory Panels, dealer satisfaction is measured in various ways, including the biannual survey of the National Automobile Dealers Association (NADA) and day-to-day interaction with our dealers. Approximately 67 percent of our dealers provided feedback through the summer 2011 NADA survey process. We showed notable improvement in many areas in this survey, 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.

Working with Dealers

Ford takes a proactive, collaborative approach to working with our dealers to appropriately size our dealer network to match our sales, market share and dealer sales objectives. Ford's dealer network revitalization plan focuses our efforts on the 130 largest metropolitan market areas, which represent more than half of Ford's retail sales. Customer convenience factors such as driving distance, location and the appearance of the facility are taken into consideration as part of our analysis. Ford is not mandating dealer consolidations or facility actions. Instead, we and our dealers are working together to continue finding solutions that make Ford and the dealers competitive and best positioned to meet customers' expectations.

In the U.S. at year-end 2005, we had 4,396 Ford, Lincoln and Mercury dealers, with 2,242 of those dealers in our largest 130 markets. As of year-end 2011, we had 3,339 Ford and Lincoln dealers (a reduction from 3,424 at the end of 2010). We will continue to work collaboratively with our dealers to reduce our dealer network to match our sales, market share and dealer sales objectives.

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 2011, Ford had 174 minority-owned dealerships, which represents 5.2 percent of our 3,339 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

In 2010, we launched a voluntary sustainability initiative for our dealers to reduce their carbon footprints and increase their energy efficiency. The goal of the "Go Green" Dealer Sustainability Program is simple: to collaborate with dealers to implement cost-effective ways to improve the energy efficiency of their facilities. We partnered with the Rocky Mountain Institute, a leading energy-efficiency organization, to pilot new technologies and architectural design principles.

In 2011, we established our initial Ford Electric Vehicle (EV) national dealer program to support the launch of the 2013 Focus EV. Having launched a successful "Go Green" Dealer Sustainability Program, we decided it was a natural fit to bring the two programs together. As part of the EV certification, then, every Ford EV dealer will undergo an energy assessment to identify opportunities to reduce their overall carbon footprint and lower their energy expenses.

With more than 150 dealers (located in 17 different states) enrolled in the first phase of the EV program, Ford established an Energy Team to manage the energy assessments. Ford partnered with KEMA, a global leader in energy consulting, to complete the actual assessments. The completed assessments identified an average dealer annual cost savings opportunity of more than $30,000 per year, or 30 percent of their energy costs, with an average dealer payback period estimated at 3.4 years.

Going forward, Ford will continue to have a Go Green Assessment be a significant component of our EV dealer network expansion. In addition, we will continue to work with our dealers to encourage the consideration of green solutions during facility renovations.

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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 were 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 88 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.

The 2012 Salute To Dealers Honorees

Our 2012 awards recognized these dealer principals for their unparalleled generosity and commitment to their communities:

- John F. Bergstrom, Bergstrom Ford Lincoln of the Fox Valley, Bergstrom Ford of Oshkosh, Neenah, Wisconsin, and Oshkosh, Wisconsin: John Bergstrom has devoted much of his life and career to improving the lives of others. He feels fortunate for his success and believes that with this comes a responsibility to make things better for others – especially those in need. One example is when Bergstrom led the effort to raise funds to purchase a twin-jet helicopter to quickly and safely transfer critically injured victims to the regional hospital trauma center. When Wisconsin needed a new dental school to serve the residents of the state, he led the charge to raise the money, and he oversaw the design and construction of the now nationally recognized Marquette University Dental School. He also led efforts to raise the necessary funds to build a new performing arts center facility to meet the needs of area schools and the community.
- Alton E. Blakley, Jr., Alton Blakley Ford Lincoln, Somerset, Kentucky: Alton Blakley, Jr. is a tireless advocate for improving the quality of life for those less fortunate and giving them an opportunity to succeed. His personal commitment of time and resources was instrumental in the construction of a new technical training facility at Somerset Community College, affording career opportunities where none existed before. When fire destroyed the local YMCA, Blakley led the campaign to rebuild the facility, including a new aquatic center that provides important treatment for residents who require physical therapy to help in their recovery. Blakley is also personally involved in raising awareness for women touched by breast cancer. His work with these causes and countless other charitable endeavors typifies his focus on, and passion for, giving back to the community.

- John Hynansky, Winner Automotive, Winner Imports Ukraine, Winner Ford Dover, Kyiv Region, Ukraine, and Dover, Delaware: John Hynansky's humanitarian efforts center on the development and improvement of children's lives in Ukraine. He sponsors local volunteer initiatives to support children's hospitals and orphanages, giving them much-needed clothing, furniture and ongoing financial resources critical to their well-being. Hynansky devotes his personal time and leadership to working with Hope & Homes for Children, an international charity whose mission is to ensure that all children have the chance to live with a loving family in a secure home environment. Whether it's working with the Rotary Club to finance medical incubators for premature babies, or relocating children to temporary summer camp programs during an unexpected health crisis, Hynansky has been instrumental in supporting the youth in his homeland.
- Gus Machado, Gus Machado Ford, Gus Machado Ford of Kendall, Hialeah, Florida, and Miami, Florida: Gus Machado is dedicated to countless social causes in greater Miami. His Gus Machado Family Foundation provides critical resources to improve health and education in the community and is closely aligned with the American Cancer Society and important initiatives that raise awareness and fight the disease. The Foundation spearheads a "Relay for Life" event that includes thousands of cancer survivors banding together to raise money for cancer prevention in the Hispanic community. He also generously supports R.O.C.K. (Reaching Out to Cancer Kids), which provides summer camps and college scholarships to teenagers stricken with the disease. Machado also runs annual "Back to School Community Fairs," in which hundreds of school-bound children are provided with essentials such as health immunizations and backpacks full of school supplies.
- Oscar E. Villanueva Sued and Fernando E. Villanueva Sued, Grupo Viamar, Santo Domingo, Dominican Republic: Oscar and Fernando Villanueva have a deep-rooted personal commitment to their Dominican Republic community and to those with special needs. Their "Love Me as I Am" Foundation reaches out to individuals living with Down syndrome and autism. The Foundation has touched the lives and hearts of those who are challenged by these afflictions, and made an immeasurable impact in the community through large-scale fundraising and awareness initiatives and events. One such event was a Foundation-spearheaded charity softball game held during the "Global Week of Caring" campaign. The teams were composed of current and past professional baseball stars, local and international celebrities, and the team that won the gold medal at the Special Olympics in Athens, Greece. The event drew more than 11,000 people, including national media, and raised record funds for the Dominican Associations of Down syndrome and autism.
- Qingping Sun, Shanxi Dachang Automobile Group Co., Ltd., Taiyuan, Shanxi, China: Qingping Sun's passion for giving is a true model for others in her community. Her primary focus is on helping the many underprivileged children and families in the area, especially in education. She donated significant funds to build a new primary school in Dachang's poor mountainous area and continues to provide much-needed supplies and equipment. She is a major contributor to local disaster rescue and relief efforts, including the recent Sichuan earthquake crisis. Qingping is also personally involved with supporting a local nursing home. When the home almost closed due to a financial crisis, she came to the rescue by donating operating funds to save the facility. She continues to help with monthly donations of rice, flour, oil and other essentials to keep the home well stocked for the hundreds of residents.

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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 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. This includes helping feed hungry people, providing mentors in classrooms and teaching teenagers to drive more safely.

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.

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 and other companies are also expanding sourcing 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.)

Investing in Communities

See some of the community-related projects we are working on around the globe.

Related Links

This Report

- Governance
- Supply Chain
- Water

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 human rights efforts. 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. 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
- Our Blueprint for Mobility

Investing in Communities

World | North America | Central and South America | Europe | Asia Pacific Africa

World

North America

Select a project location

Alberta Arizona California Colorado Florida Georgia Illinois Kentucky Maryland Mexico Michigan Nebraska New York Ohio Ontario Pennsylvania Quebec South Carolina Tennessee Texas Virginia Washington

Alberta

Edmonton Food Bank

The Edmonton Business Centre employees collected food and volunteered at the Food

Bank sorting food and creating hampers for distribution to low-income people.

Arizona

Stop Hunger Now

Mesa

Ford volunteers from the National Recovery Center in Mesa, Arizona joined employees from the Phoenix Ford Sales Division to participate in a “Stop Hunger Now” event in a Ford Accelerated Action Day. For the second time in 2011, Ford volunteers packaged 21,000 high-protein, dehydrated meals for use around the globe.

California

St. Mary’s Interfaith Dining Room

Stockton

This FMCC group in the San Francisco region prepared and served lunch to 800 poor and homeless people in the Oakland region.

St. Anthony’s Food Bank

San Francisco

Sorted and organized food for distribution.

Colorado

Project C.U.R.E.

Denver

Volunteers unloaded trucks, and sorted and packaged donated medical supplies for distribution to high-need areas around the world.

Florida

2nd Harvest Food Bank

Orlando

Volunteers sorted and organized food for distribution.

Georgia

Community Food Bank

Atlanta

More than two dozen Ford volunteers helped sort food at the Atlanta Community Food Bank in Georgia. This was the second time Ford volunteers had worked at the center in 2011, and each time the Atlanta Region Dealers Operation Goodwill also provided $2,500 in grants to the food bank. Ford also contributed a new Ford Transit Connect Mobile Food Pantry that is used to pick up food donations around town. The shift supervisor at the food bank indicated that on a normal shift, 40 people working can usually sort 7,000 lbs.

Illinois

Feed My Starving Children

Aurora

Ford volunteers went to work at Feed My Starving Children (FMSC) in Aurora, Illinois. FMSC sends high-nutrition meals to malnourished children around the world. Ford volunteers packed 23,112 meals – enough to feed 64 kids for one year. The Ford volunteers were from Marketing, Sales and Service, and Ford Credit in the Chicagoland area.

Kentucky

Dare to Care Hunger Walk

Louisville

Ford volunteers sponsored a water stop at the 5k Dare to Care Hunger Walk/Run and employees entered the event. Every participant ran past a Ford display, including a 2012 Explorer and a 2012 Focus. The event easily topped 2010's $110,000 raised and there were 2,500 participants.

Maryland

SOME (So Others Might Eat)

Washington, D.C.

Ford volunteers prepared and served lunch to 800 poor and homeless individuals and families. For over 40 years SOME has served meals, and provided clothing, job training, and medical/dental/mental health services.

Mexico

Ford school #49 in Tlalnepantla

Santa Fe

Ford of Mexico employees visited a school in a poor community and painted the entire building. A local Ford distributor donated the paint and equipment.

Madre Teresa de Calcutta Homeless Shelter & Casa Dalla

Santa Fe

Ford of Mexico employees, from both Ford and Ford Credit, collected food, books, clothing and board games. Employees delivered the items to a Ford School and to programs serving orphans and poor single mothers.

Daunis

Santa Fe

Daunis, an organization dedicated to providing vocational training to Down syndrome individuals, came to Ford of Mexico headquarters and sold tamales to employees. The proceeds will fund the work of the organization.

Casa Hogar los Olivos (orphanage)

Employees from the Hermosillo Stamping & Assembly Plant visited the nursing home and cleaned the installations, buildings and gardens; painted the walls, and repaired damaged areas. They also donated an electrical transformer to the institution.

Employees and their families

Chihuahua

The city and state of Chihuahua have high criminality and obesity rates, and Ford Chihuahua Engine Plant volunteers wanted to do something about these problems. They organized Safety & Healthy Living presentations, and introduced recreational areas including a new bicycle path that is available to everyone. A Personal Safety presentation was delivered by experts in the field.

Casa Hogar La Esperanza

The Cuautitlan Plant supported this foster home for 40 orphans and many area elderly who receive meals there each day. Food was donated by employees and the CSAP Medical Service gave free medical assistance to the surrounding community.

Green Peace

Santa Fe

Green Peace installed an ecological expo in the main lobby to educate the employees about how each person can help improve the environment.

Hospital Infantil de Mexico Federico Gomez

Mexico City & Santa Fe

This community, ravaged by Hurricane Alex, received thousands of pounds of food collected by the Ford office personnel in Santa Fe.

Michigan

Advanced Technology Academy

Dearborn

Ford volunteers helped students show off some of their creative flair at the Advanced Technology Academy in Dearborn, Michigan. Ford employees helped paint a community-themed mural inspired by the students. The activity was one of many Ford Volunteer Corps efforts on a Ford Accelerated Action Day focused on children and families.

Penrickton Center for Blind Children

Taylor

A MODEL team of Ford volunteers recently spent the day at Penrickton Center for Blind Children in Taylor, Michigan. The Ford volunteers adapted toys for use by the children, assembled shelving and prepared meals.

Grandmont-Rosedale Project

Detroit

Ford volunteers painted, cleaned and completed minor repairs in rescue homes at the Grandmont-Rosedale Development Corp. in Detroit.

Methodist Children's Home

Redford Township

MODEL teams of Ford volunteers painted residential cottages at the Methodist Children's Home Society in Redford Township, Michigan.

Starfish Family Services

Inkster

It looks like child's play, and it is, but that is what makes it so important. Ford volunteers recently spent a day at Starfish Family Services playing with the 3–5 year olds, and helping them develop their motor skills and coordination with a variety of fun activities.

Junior Achievement

Detroit

Ford volunteers can do many things. They paint, build, plant, clean, renovate – and even educate. At Junior Achievement in Detroit, a Ford MODEL team of employee volunteers helped teach 100 middle school students about money. The students and Ford volunteers did budget exercises and learned lessons that will be useful for a lifetime.

Working for Children and Families in the Local Community

Detroit

More than 300 Ford volunteers went to work for children and families in their local communities on a Ford Accelerated Action Day. MODEL teams of employee volunteers worked in shelters, schools and food banks.

COTS

Detroit

Ford volunteers spruced up the Coalition for Temporary Shelter in Detroit. They painted family lounges, installed shelving and put up window treatments.

City Mission

Detroit

Ford volunteers built a rain runoff and capture system to water the community vegetable garden at City Mission in Detroit. The garden provides fresh produce for people in need in the area.

Community Living Centers

Southfield

Ford volunteers created a rain collection system and vegetable garden at Community Living Centers in Southfield, Michigan.

Detroit Zoo

Royal Oak

Ford volunteers took a trip to the Detroit Zoo for some digging and planting, and to create a rain garden. Ford Group Vice President Sue Cischke (recently retired) – the Company's top environmental and safety officer – stopped by the site to talk with volunteers and see how the work was progressing.

Edsel & Eleanor Ford Estate

Grosse Pointe

A MODEL team of Ford employee volunteers planted trees, removed invasive species and cleaned up the shoreline around the Edsel and Eleanor Ford Estate in Grosse Pointe Shores, Michigan.

Environmental Interpretive Center – UM Dearborn

Dearborn

Ford volunteers created a foot trail and helped with mushroom log cultivation at the Environmental Interpretive Center at University of Michigan-Dearborn.

Ford GreenIT Green Days Recycling Event

Dearborn

Spring cleaning got a high tech makeover as Ford employees cleared out their attics and basements for the annual Green Days e-waste recycling event. Ford employees brought in old computers, printers, cell phones and other electronic equipment to keep it out of landfills. Electronic devices often contain copper, silver and even gold that can be reclaimed and reused. The plastic and glass in monitors or TVs can be recycled. There also can be toxic materials involved, such as lead, mercury, nickel or cadmium that could harm the environment if it ends up in landfills.

Ford GreenIT partnered with the Ford Volunteer Corps to expand the reach of the Better World Ford Accelerated Action Day. Ford employees filled 55 skids with electronics weighing thousands of pounds.

Formula SAE at MIS

Brooklyn

Ford volunteers waved flags, helped drivers and supported competitors in various ways at the Formula SAE event at Michigan International Speedway. College students studying engineering from around the world designed and built a car to FSAE specifications. They were then evaluated against other drivers in a competition. The competition was divided into two parts – a business side with a design and cost report, and a performance side where the teams demonstrate their functional competitiveness. Events included Skid-Pad, Acceleration, Endurance, Autocross, and Fuel Economy.

Penrickton Center for Blind Children

Taylor

Grosse Ile Learning Garden

Grosse Ile

Veteran's Haven

Wayne

Ford employee volunteers planted flowers and landscaped the grounds. They also created a border around the Butterfly Garden.

Matthaei Botanical Gardens

Ann Arbor

Ford volunteers helped improve the Habitats Trail through the children's garden.

Arbor Hospice

Ann Arbor

Ford volunteers edged walkways, deadheaded plants, cleaned the fish pond, divided plants, removed spiderwort and other invasive plants, and weeded. Well done team!

Food Gatherers

Ann Arbor

Volunteers sorted and organized food for distribution.

Advanced Technology Academy

Dearborn

Volunteers assembled and installed three pieces of durable, metal playground equipment purchased with a MODEL teams mini-grant.

Gleaners Community Food Bank

Dearborn

MP&L employees at West Park Center collected 1.25 tons (3,500 total items) of non-perishables and delivered the bounty to Gleaners, including 2,500 boxes of cereal and baby food, and $100 that will provide 300 meals.

Capuchin Soup Kitchen

Detroit

Renovated the food storage area and the

Ford volunteers help build the Grosse Ile Learning Garden with the Grosse Ile Nature and Land Conservancy.

ReCycle Ann Arbor

Ann Arbor

Hundreds of pounds of discarded, useful items were organized and catalogued by Ford volunteers.

St. Vincent de Paul

Clinton Township

Volunteers worked in the Food Pantry and other areas as needed.

Ford's Eyeglass Collection for One Sight

Dearborn

Employees picked up 900 pairs of eye glasses donated by employees in 12 SE MI Ford buildings. They will be refurbished and distributed by One Sight to adults and children around the globe.

Henry Ford Estate

Dearborn

Ford volunteers worked hard at completing end of the summer garden bed clean-up chores at this historic Ford family location.

Focus: HOPE

Detroit

Assisted with various painting and repair

Ford volunteers helped pack and distribute food to veterans and their families.

Matthaei Botanical Gardens

Ann Arbor

Volunteers created a beautiful new entranceway garden area to welcome visitors to the gardens and built a shade structure.

Habitat for Humanity Macomb County

Clinton Township

Volunteers installed the cabinets, flooring, countertops and trim to three newly built homes.

Henry Ford Estate

Dearborn

Volunteers restored the beautiful rock garden and other outdoor spaces at this historic Ford site, trimmed shrubs and cleaned up garden beds.

Vista Maria

Dearborn Heights

New patios were built outside of two residential cottages, home to poor, abused and neglected girls and young women.

Grandmont Rosedale Development Corp

Detroit

rooms where donated clothing is sorted, stored and distributed.

projects.

Repaired and restored several homes and the outdoor spaces in a neighborhood famous for its historic houses.

Habitat for Humanity Detroit

Detroit

Worked on adding landscaping to the yards of newly built homes.

Habitat Blitz Build

Detroit

Twenty-nine projects were staffed by Company volunteers to build a Ford-funded house.

Legal Aid & Defender Association

Detroit

Ford OGC volunteers conducted an Expungement Clinic and certified individuals for food stamps and other benefits at a special Food Stamp Clinic. They were assisted by other Ford Spanish-speaking volunteers available to translate as needed.

Mosaic Youth Theatre

Detroit

Ford volunteers made critical improvements, funded by a MODEL teams mini-grant, to the building's interior and exterior.

Parade Company

Detroit

Volunteers worked on floats and costumes for the Thanksgiving Day Parade.

Ruth Ellis Center

Detroit

The shelter's back porch and fire escape were repaired and the landscaping was improved.

St. Leo's Soup Kitchen

Detroit

Volunteers prepared and served lunch.

Salvation Army – Grandale Corps

Detroit

The kitchen, dining rooms and hallways were painted and renovated.

World Medical Relief

Detroit

Volunteers assembled hygiene kits that will be sent to needy people around the world.

The Guidance Center

Flat Rock

Removed old playground enclosures and installed new fencing, and spread child-safe rubber mulch.

Veterans Gala

Grosse Ile

Ford volunteers set up the facility for the second annual event honoring area veterans and their families.

Focus: HOPE

Inkster

Volunteers delivered food boxes to homebound citizens.

Starfish Family Services

Inkster

New shelving in the pantry and room dividers in the counseling area were constructed, funded by a MODEL teams mini-grant.

JDRF

Livonia

Volunteers staffed raffle sales tables in Ford buildings to gather support for the Company JDRF initiative.

Community Housing Network

Madison Heights

Volunteers rehabilitated outdoor spaces, planting flowers, trees and shrubs.

Boy Scouts D Bar A Ranch

Metamora

Volunteers assisted camp rangers in the care of the 1,700-acre Scout Ranch. Fences were repaired, the totem pole was painted, plus landscaping, painting, carpentry, and many other chores were completed.

Habitat for Humanity Monroe County

Monroe

Volunteers built a flooring system for a new home – a firm foundation for one lucky family.

Maybury Farm

Northville

Volunteers helped with autumn farm chores at Maybury Farm.

Northville Community Foundation

Northville

A large wooden Ford-brand tractor and trailer playstructure was built on the

Friends of the Rouge

Novi

Volunteers restored 1,000 feet of lake shore overrun with invasive plant species and planted 1,000 new native plants.

Forgotten Harvest

Oak Park

A large group of volunteers sorted produce and packaged a variety of food items for distribution to needy families in the area.

grounds at Maybury Farm. Materials were purchased with a MODEL teams mini-grant.

First Step
Plymouth

Volunteers constructed an outdoor equipment and storage shed at this domestic violence shelter for women and children.

Gleaners Community Food Bank
Pontiac

Volunteers sorted and organized donated goods at the Oakland County warehouse.

HAVEN
Pontiac

Volunteers helped renovate areas of the domestic violence shelter for women and children.

Lutheran Social Services Danish Village
Rochester Hills

Ford volunteers built a bocce ball court for residents 21–101 years old, giving the multi-generational residents a new activity to share. Materials were purchased with a MODEL teams grant.

Detroit Zoo
Royal Oak

End of summer garden bed clean-up chores.

American Red Cross Ford Blood Drive
South East Michigan

514 employees donated blood across the region.

Event Photographer
South East Michigan

Ford volunteers, talented in the art of photography, visited most of the S.E. Michigan September 14 project sites and captured the hard-working Ford volunteers in action.

Penrickton Center for Blind Children
Taylor

A new privacy fence was built to shield the playing children from a busy road. Funds were received via a MODEL teams mini-grant.

The Nature Conservancy
Tecumseh

Volunteers worked in the fen eradicating nasty buckthorn, an invasive species.

St. Vincent de Paul
Utica

Employee volunteers sorted and organized donated goods.

Community Housing Network
Waterford

Volunteers rehabilitated outdoor spaces, planting flowers, trees and shrubs.

St. Vincent de Paul
Waterford

A team of employees sorted and organized donated goods.

Veteran's Haven
Wayne

Employees sorted and organized donated goods and helped with their distribution to needy area veterans and their families.

Friends of Highland Recreation Services
White Lake

The gatehouse and entryway fencing was repaired and restored at this historic Ford family property.

Angels' Place
West Bloomfield

Garden beds were eliminated or downsized to simplify and reduce regular maintenance needs. Mulch was spread in the remaining beds, low areas were filled, and shrubs and small trees were trimmed.

Local School Children
Ypsilanti

School supplies were collected in the Rawsonville Plant for two weeks. The project was timed so employees could easily purchase extra items while school shopping for their own children.

Habitat for Humanity Huron Valley
Ypsilanti

Applied the interior and exterior finishing touches on a newly constructed single family home.

Nebraska

Open Door Mission
Omaha

Ford volunteers prepared sack lunches and staffed the SOS store.

New York

God's Love We Deliver

New Jersey

New Jersey volunteers delivered food.

Ohio

University Settlement

Cleveland

Salaried employees from the Cleveland Manufacturing Site volunteered at University Settlement, which provides programs supporting children, family and senior services. Ford volunteers cleaned out a home in the Transitional Housing Program and made it ready for the next family in need.

Salvation Army

Lima

A group of volunteers from Lima Engine Plant worked together to help the Salvation Army of Lima, Ohio. Employees painted playground equipment, doors and railings, hung shelves, and spread mulch in play areas.

Susan G. Komen Cancer Awareness

Cincinnati

Employees participated in this annual event.

University Settlement

Cleveland

Salaried employees from the Cleveland Manufacturing Site volunteered at University Settlement, which provides a myriad of programs supporting children, family and senior services including: the Magic Johnson computer lab; a food pantry – the Hunger Center; a state-licensed daycare; drug prevention and after-school tutoring. Volunteers cleaned out a Transitional Housing Program home and made it ready for the next family in need.

Second Harvest Food Bank

Lorain County

Fourteen employees from the Ohio Assembly Plant volunteered at the food bank warehouse, repacking food for the needy.

Salvation Army

Lima

Employee volunteers improved the center's playground by painting equipment and spreading mulch in the play spaces.

One Way Farm

Fairfield

Employee volunteers transferred day lilies from another farm to One Way Farm, for a public flower sale to raise funds for providing housing for children; volunteers also performed various jobs to improve the farm.

Ontario

United Way & Kerr Street Ministries

The Oakville project, Fill Focus for Families, collected food, school supplies, and other essential items for needy families in their community.

Pennsylvania

Greater Pittsburg Community Food Bank

Pittsburgh

Volunteers inspected, sorted and repacked donated and purchased groceries for distribution to food bank clients.

Quebec

Camp Boaco Salaberry-de-Valleyfield

At this camp for low-income families, employees from Ford du Canada Limitée Sales, Marketing, Parts & Service, Fleets and Customer Service departments scrubbed and polished the Daycare and Chapel buildings, painted a gazebo, cooked delicious and healthful food, washed windows, cleaned up garden beds and hiking trails, and spread yards of mulch. Families are referred by social service organizations and all enjoy the relaxing country setting.

South Carolina

Meals on Wheels

Greenville

Volunteers delivered meals to homebound citizens.

United Way – South Carolina

Greenville

Teams from the Greenville Business Center assembled themed baskets, which were auctioned off by GBC employees with proceeds going to United Way.

Susan G. Komen Race for the Cure

Greenville

Employees participated in this annual upstate event.

JDRF Walk

Greenville

Junior Achievement

Greenville

The Blood Connection

Greenville

The Greenville Business Center partnered, for the first time, with the Charlotte Region (serviced by the Colorado Springs Business Center) and Fairway Ford of Greenville for the walk and other fundraising events.

Volunteers taught a one-hour class for six weeks, designed to inspire elementary and middle school children, teach them to value free enterprise, business and economics, and use the knowledge to improve the quality of their lives.

The quarterly blood drive at the Business Center will help the 1.2 million people serviced by The Blood Connection.

Tennessee

Oasis Center

Nashville

Ford volunteers from the Nashville Business Center helped assemble bikes, make scarves and put together hygiene kits at the Oasis Center. The Oasis Center offers safety and support to the area's most vulnerable and disconnected young people, and helps them turn their lives in a positive direction.

Hands on Nashville and Shriner's Hospital

Nashville

The Memphis Region team helped set up the annual Music City Festival and BBQ benefit that helps Hands on Nashville and Shriner's Hospitals. They assembled and set up beverage pods, set up tables and stanchions for the attendees, and helped the BBQ participants in any way needed. Ford has a great relationship with Hands on Nashville, having worked with the organization during the Nashville flood cleanup in 2010.

Habitat – Nashville

Nashville

Provided landscaping and finish work, including installing door knobs, towel racks and closet shelving on Habitat home. Volunteers also punched out interiors, completed landscaping and cleaned up house.

Texas

San Antonio Food Bank

San Antonio

Volunteers inspected, sorted and repacked donated and purchased groceries for distribution to food bank clients.

North Texas Food Bank

Dallas

Ford ISC volunteers selected this area organization to assist.

Virginia

Salvation Army Carloads of Care

Leesburg

Ford employees in Maryland and Virginia joined forces to provide life skills classes to shelter residents. Topics included safety, personal finance, and building credit.

Washington

King County Parks

Redmond

Ford volunteers beautified the base of the iconic windmill, a special area of the Clise Mansion in Marymoor, one of the King County Parks in Redmond, Washington – a suburb of Seattle. The ground was prepped, weeded and scores of flowers and trees were planted by Ford volunteers.

Central and South America

Select a project location

Argentina Aruba Brazil Cayman Islands Costa Rica Dominican Republic El Salvador Guatemala Honduras Panama Puerto Rico Trinidad and Tobago

Argentina

Entre Rios Primary School and Benavidez Community Kitchen

Buenos Aires

Ford employees at the Pacheco Plant collected clothing and food and delivered it to the 150 school children and to the community kitchen on the weekend.

Junior Achievement of Argentina

Buenos Aires

Twelve Pacheco Plant LL6+ employees volunteered for a shadowing program with the JA Foundation designed to help students in their last year of secondary school. Students shared a work day with management-level employees who demonstrated potential career opportunities.

Food Bank of Buenos Aires

Buenos Aires

Pacheco Plant employees conducted a food collection drive and an aerobic walk activity to promote the sport and healthy habits. The Food Bank provides food to 500 organizations and helps 79,000 people in and around Buenos Aires.

Several schools in rural areas

Buenos Aires

Ford Argentina has an ongoing Clothing Collection Drive for gently used clothing. Four Pacheco Plant inter-area teams helped classify the items and package them

Hemotherapy Institute of Buenos Aires

Buenos Aires

A successful blood collection drive was held with Pacheco Plant employees, which will

Food Bank Foundation

Buenos Aires

Pacheco Plant employees sorted and organized donated goods.

for delivery.

help 120 individuals.

Habitat for Humanity of Argentina

Buenos Aires

Four brigades of 10 people each from the Pacheco Plant worked for three days to build houses for three low-income families.

Aruba

Casa Cuna Progreso, Pos Chiquito

Oranjestad

R.E. Yrausquin & Sons dealership employees painted the interior and exterior of this special place in Oranjestad; a home for babies and children up to 8 years old unable to live at home for a variety of reasons such as poverty and ill health.

Brazil

LITAC – Liga Tatuiana de Assistencia aos Cancerosos

São Paulo

Ford Tatui Proving Ground volunteers donated more than 300 packets of milk powder that will cover the institution's needs for four months.

Lar Donato Flores

São Paulo

The Tatui Comitê de Cidadania taught 141 poor students about the environment and environmental protection, and gave each student a basket of items appropriate to the theme.

Tatui SESI School

São Paulo

Ford volunteers presented lessons and activities on protecting the environment to 80 poor students.

Lar Elbenezer – Santo Andre Orphanage

São Paulo

A special "Smile Day" was organized by Ford Credit Brazil – SBC and branches. The employees took 16 orphans to a recreation center for a day of play, haircuts, a special lunch, toys and dental check-ups including cleanings, and an oral hygiene gift bag.

Reciclando Entity

São Paulo

Taubate HR employees set up displays to help raise awareness and funds for this program that serves poor and homeless people in the community. Crafts and recycled items were exhibited and sold. Taubate HR employees set up displays to help raise awareness and funds for this program that serves poor and homeless people in the community. Crafts and recycled items were exhibited and sold.

Cayman Islands

Cayman Islands Humane Society

Volunteers from Vampt Motors helped care for animals, encouraged donations and helped promote awareness of abandoned animals and the work of the Humane Society.

Costa Rica

Local school computer donation

NASA Nacional Automitriz staff collected 5% of sales and service receipts and used them to purchase eight computers for a local school for underprivileged children.

Dominican Republic

People with Intellectual Disabilities

Santo Domingo

The Grupo Viamar dealership supported a Celebrity Softball game featuring major league stars Alex Rodrihuez, Sammy Sosa, Juan Marichal, and Albert Pujols. The stars will play with young athletes having intellectual disabilities. The producer of the event is Raul Camilo and the songwriter is Frank Ceara.

El Salvador

Voluntarios Construyendo

Staff from the Grupo Gevesa dealership fixed a school for Down syndrome children funded by a percentage of parts and service sales.

Funded the construction of three homes

San Salvador

Gevesa employees donated $1 each week and customers gave voluntary contributions to fund the construction of three homes for poor families, each having five members.

Guatemala

Local lakeshore

The Excel Motors dealership donated $20 of every repair completed, and employees cleaned the shores of a nearby lake and planted 800 trees.

Honduras

Un Techo Para Mi Pais (A Roof for My Country)

A house for a poor, homeless Hondurean family was funded and built by Dimasa employees. The dealership and proceeds from fund raising activities contributed the $3,000 needed.

Pilar Salinas School for the Blind

The Yude Canahuati dealership replaced the school's 65-year-old waste water pipes with new larger capacity pipes to improve drainage, reduce environmental pollution and eliminate a health hazard.

Panama

Hogar Nuestra Senora

Distribuidora David dealership donated 20% of repair receipts to fund the project at a shelter, home to abused and neglected citizens. The facility received a new roof and interior ceilings, fresh paint in the common areas, and garden restoration.

Puerto Rico

Centro Maria de los Angeles

Children and young adults with spina bifida, brain damage, metabolic disorders, physical challenges and other syndromes benefited from donations from the Alcalde Auto Parts dealership. $1 was donated from every purchase and, on the last day of the special Drivers for Hope project, a special treat was given to the children and parents.

Hogar Albergue para Ninos Jesus de Nazaret, Inc.

During a month-long promotion, Mayaguez Ford contributed a portion of parts and service receipts, collected shoes, personal care items and clothing to help the abused children at the residential facility.

Ministeria Ayudando a Los Olvidados

The Autos Vegas Ford Parts & Service department donated $3 from every service pack during the month to help feed homeless people in the community. Twenty employees volunteered at the homeless shelter and served a special meal on October 15.

Muscular Dystrophy Association of Puerto Rico

The Caguas Expressway Motors dealership raised funds to purchase equipment for MD patients, by participating in the "Pulling the Plane" competition with other companies in Puerto Rico.

Sanctuary Canita de la Divina Misericordia

Six hundred dogs sheltered by this sanctuary benefitted from the $4,000 raised by Central Ford during their special Ford Global Week promotions.

Trinidad and Tobago

Sacred Heart Boys Primary School

McEnearney Motors employees painted the primary school, prior to the opening in September for student 5–12 years old. During Global Week a portion of the dealership's revenue was used to purchase school supplies.

Europe

Select a project location

Belgium England Finland Germany Scotland Spain Wales

Belgium

MPI Ter Heide Genk

Genk

Ford Genk volunteers cleaned up and restored trails and footpaths to make them accessible for wheelchairs at this home for developmentally and physically challenged people. They also repaired outside equipment.

England

The Basildon Disabled Sports

Ford Blue Oval Scholarship

Club

Dunton

The Dunton Front End Accessory Drives team rehabilitated the Sports Club for physically challenged individuals. The group rebuilt garden walls, rehabbed the garden, painted the sports hall walls and repaired the sports tables.

London

Ford announced a major new £1 million UK university scholarship program in technical and innovation fields to mark 100 years of Ford's commitment to the UK. The Ford Blue Oval Scholarship Program, will provide 100 student scholarships of £10,000 per student over a three-year period – one for each year of the company's operation in the UK – at leading universities to encourage a new generation of engineers, scientists and innovators.

Luton Christian Fellowship

St. Albans

During a week-long event for underprivileged five- and six-year-olds, two Ford Credit employees from the St. Albans Service Centre organized sports and games for groups of 20 children at one time. Great fun was had by all.

Ravensbourne School

Dunton

Ninety children, 2–19 years old, with a wide range of educational needs including some with severe learning difficulties, have a freshly renovated school thanks to Dunton employees. A team from Powertrain & Program Purchasing repaired and redecorated classrooms and corridors, repaired and refurbished garden furniture, paths and extensive garden areas, and laid matting and wood bark along pathways.

Maldon (Essex) Mind

Maldon

Volunteers trimmed hedges and beautified the gardens for the patients at this leading mental health facility.

Finland

Traffic Safety Week program "Shine in the Traffic"

Helsinki

Ford volunteers organized and presented a safety program for 10 and 12 year olds. They made personal reflectors and tested their visibility in the dark; checked their bicycles and learned how difficult it is for drivers of cars and trucks to see them; and had questions answered by traffic safety police. Ford, Ford dealers, and the Motor Industry Central Organization have distributed 50,000 reflectors throughout Finland, funded by the Henry Ford Trust.

Germany

Mentoring Project

Cologne

Ford Niel, E building west volunteers continued their three-year-long project of helping eight Cologne students, aged 14–16, make career choices and answered

Sieburg, Germany Kindergarten

Cologne

PD employees from Cologne built playground and outdoor exercise equipment to enhance the physical, social and mental development of the students. Existing

SBK Home for the elderly and disabled

Cologne

Volunteers escorted a group of elderly and disabled senior residents, confined to wheelchairs, on a day's outing at the

questions regarding school, and relationships.

outdoor facilities were redesigned to better meet the needs of the children.

regional zoo. The individual attention and care were appreciated by all.

ZAK: Cologne's Children's Circus

Cologne

The Sustainability, Environmental & Safety Engineering group renovated the circus grounds and improved ZAK's facilities for the integrative work with children. Children and young people have the opportunity to move and develop a positive body image and self-confidence at this facility.

Naturgut Ophoven

Cologne

The Manufacturing Planning & Logistics employees rehabilitated areas of this program, teaching children the sustainable use of nature. The group built a wooden walkway over marshes and inspected and repaired the facilities.

Animal Shelter Cologne-Zollstock

Cologne

The Ford team from IT, Community Service Steering Committee painted and repaired the buildings and cages at this facility housing 300 animals – cats, dogs, rodents and reptiles. They also gardened and cut trees and coppice.

Rodenkirchen Municipal Church, Community Center and Kindergarten

Cologne

A Complexity Management team from Cologne cleaned and repaired the Atrium, gardened, trimmed hedges and tidied the playground.

Scotland

Breast Cancer Care

A 51-mile charity cycle ride from Glasgow to Edinburgh with 10 members of the SNIC ONE FORD team covered all functions. £2,500 was raised for Breast Cancer Care, who provides support for breast cancer sufferers and their families.

Spain

Parque Natural de la Albufera La Duna Fosil

Ford Valencia MP&L volunteers eliminated Carpobrotus, an invasive species, on a fossil sand dune and replanted native plants. Carpobrotus was once used to prohibit soil erosion, but now is choking out native growth.

A.A.D.I.S.A. Center for Mentally Handicapped

The Valencia team repaired and painted the walls of the center.

Servicio de Biodiversidad de la Conselleria de Medioambiente

NGO Doctors of the World

Almussafes Cost Accounting Dept volunteers gave help to this organization

Valencia Engine Plant employees inventoried and classified native and endangered plant species.

that provides medical attention to poor people in outlying areas and abroad.

Wales

Macmillan Cancer Support

South Wales

Fifteen Bridgend Engine Plant employees walked 22 miles, with 1,000 other volunteers, along the Gower Peninsula on the south-west coast of Wales, raising funds to support cancer research and services to patients.

Asia Pacific Africa

Select a project location

Burkina Faso Cambodia China Ghana India Jordan Kenya Korea Lao PDR Madagascar Malaysia Nigeria Philippines Saipan Senegal Sierra Leone South Africa Taiwan Tanzania Thailand Zimbabwe

Burkina Faso

National Center of Blood Transfusion; Sector 30 Orphanage; Hospital of Azimmo Ouagadougou; Kinfanguin Village; Fabao Espoir of Ouag; Bangre Weogo Park

Ouagadougou

Volunteers in Ford Africa Motors donated time, funding and much love as they traveled in a procession of Ford vehicles,

accompanied by National TV and other media. They visited environmental protection areas and neighborhoods where poor, elderly, neglected, abused, and homeless people live.

Cambodia

Beautification project – National Road #6

The great Model team of RMA-Cambodia planted over 1,340 tropical trees and native plant species along this main thoroughfare between the airport and downtown Siem reap.

China

Huanglong Hope Primary School

Nanjing

Research & Engineering employees earlier donated a library to the school and now donated and set up a PC room for students and staff. Discarded Ford PCs, laptops, network equipment, cables, tables and power supply relays were donated.

Nanjing Purple Mountain

Nanjing

The Research & Engineering Center staff cleared plastic, paper and miscellaneous trash from this natural area and the major roadway leading visitors to it.

Nanjing Ming'Xin Autism Training School

Nanjing

The R & E Center sponsored an autumn outing and chaperoned the children in the training school. Ford covered all the expenses of the day, including a visit to the Nanjing Aquarium.

Ghana

Koncord Academy

Safety checks

Korle-Bu Teaching Hospital

Mechanical Lloyd Company Ltd dealership staff funded the drilling of a borehole and mounted a surface tank to access potable water for the students and staff at this school for children with mental and physical challenges.

The vehicles of three fleet customers of Mechanical Lloyd Company Ltd dealership – Ghana Customs (40 vehicles), Ecobank (8 vehicles) and Equilease (26) – all received free service and safety check-ups. Every Ford technician participated in this Saturday event at the main office of each customer. A Sales and Customer Service and a Management representative were also at each site.

Ford technicians and staff from the Mechanical Lloyd Company Ltd dealership donated blood to Korle-Bu Hospital in Accra, Ghana's largest teaching hospital.

India

Panchayat Union Primary School

Chennai

FBSC, KCT Tech Park employees cleaned a school for underprivileged children near Saravanampatti, CBE; renovated the gardens by laying 250 white bricks; and donated mats for the comfort of study groups; motivated the students with good human awareness stories; and provided entertainment for all with a few games and fun activities.

Saranalaya Orphanage

Chennai

At the orphanage the IT group provided meals to the residents, provided gently used clothing collected in their building, and organized a general medical check-up for the orphaned children.

Jordan

Hospital equipment purchase

Amman

FME Commercial & Industrial Co. dealership donated $20,000 USD to a local hospital for renovations and the purchase of critical new equipment.

Kenya

Ulu Primary School

One hundred adolescent girls from impoverished backgrounds will benefit from a special drive by CMC Motors Group Ltd that will collect undergarments and basic sanitary supplies for them.

Korea

St. Joseph Village

Seoul

The Parts & Service department of Sunin Motor Co. donated 5% of total parts sales ($9,000 to the aged, disabled, homeless and sick residents. Volunteers cleaned and washed the residence, harvested rice and peppers, and donated firewood.

Lao PDR

Orphanage

At an orphanage 20km from the Lao Ford City dealership, Aftersales department employees donated clothing, teaching aids and gifts, and repaired and renovated the playground, bedrooms and bathrooms for the 60 young residents.

Madagascar

Public primary school in Masinandriana

Masinandriana

The Materauto dealership funded the building of a new canteen, supervised by a building contractor. The dealership and employees then provided cooking utensils and stocked the shelves with nutritious food for the 300 students.

Malaysia

Selangor, Petaling Jaya

Selangor

Sime Darby Auto Connexion employees visited the poor, homeless orphans at the House of Hope in Selangor.

Area homeless and orphans

Selangor

Sime Darby Auto donated 15% of Service Dept receipts to programs serving homeless people and orphans in the nearby communities.

Nigeria

Onigbongbo Primary Health Center

SOS Children's Village, Little Saint Orphanage, Compassionate

The Briscoe Ford dealership employees educated citizens on the menace of malaria and provided mosquito nets to combat the spread of the disease. The group also donated drugs and other sanitary items to the community via the Health Center.

Orphanage, Living Fountain Orphanage

Lagos

Coscharis Motors Marketing department volunteers visited the orphanages and engaged in community development programs.

Philippines

Baranggay

The Ford team promoted a clean and green environment by planting trees, donating trash cans, and educating the community about waste segregation. The community was identified as the beneficiary of FIP employees' social program.

Tala Elementary School and Agos Elementary School

Employees helped provide a better education for Batang AETA by providing school supplies to poor native Filipino students in their community.

Sta. Rosa lake shore clean-up

Employees promoted a green and clean environment by collecting trash near Sta. Rosa Lake.

Mary Mother of Mercy Home

A home for abandoned elderly people received assistance with basic needs: medicine, groceries and other items. This is an ongoing project for this Ford team.

Run for a Cause

A fundraiser was held to help provide medical care for the ill.

Saipan

Walk for Health

CNMI Joeten Motor Company, Inc. dealership employees 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.

Senegal

Municipal FANN Hospital

Dakar

A percentage of L'Africaine de L'Automobile service receipts funded the construction of a proper reception space in the hospital serving HIV-infected children. Volunteers from the Parts & Service department constructed the chamber.

Sierra Leone

School for Blind Children

Ford volunteers spent the day at a school for blind children, bringing in supplies to help the school and students.

South Africa

Le Amogetswe Safe Home

Pretoria

The Human Resources team helped paint and provided general maintenance work at Le Amogetswe Safe Home, a home for abandoned children based in Atteridgeville.

Clean-up Campaign

Pretoria

The Global Week of Caring ended with a company-wide initiative, with employees taking part in projects to improve the environment in and around the Ford Assembly Plant.

Malerato's Hope Centre

Pretoria

Wellness Offices volunteers painted the HIV-AIDS center next to the FMCSA, the kitchen was repaired and painted and new fire extinguishers and first aid kits were donated.

Veeplaas Funduzufe Creche

Port Elizabeth

A project begun in 2010 by the Straundale Engine Plant Wellness team to repair the crèche mobile homes was completed over a two-day blitz build by Wellness team members.

Triomf Primary School

Port Elizabeth

Straundale Engine Plant HR, MP and L team employees provided after-school care for primary school children at a school needing extra help to closely supervise and keep the children safe after hours.

Gift of Givers

Port Elizabeth

A Sudan drought-relief fund was initiated at Straundale Engine Plant, the original goal being R50.00 per employee totaling R200,000. Silverton was then included and a challenge was issued to Ford plants globally. The team hopes to raise R50 million. Gift of Givers is managing the contributions.

Lovuyo School for Disabled

Port Elizabeth

Continuing their six-year involvement with this school, the SEP management team provided much-needed meals to the special needs students. In addition, a jungle gym was installed and special provisions were made to take the 42 students and their caregivers to the Addo Elephant Park.

Lapumilanga Wellness Orphan Centre

A project begun in 2010 to repair the Centre's mobile homes was completed over a 3-day-long build by Wellness team members in Straundale.

Each One Reach One Food Collection Project

Port Elizabeth

Donations of non-perishable groceries were collected by Straundale Engine Plant and distributed to five needy families. The project is to continue with monthly collections and distribution of the food to shack dwellers within Port Elizabeth and Uitenhage areas.

SOS Children's Village

Pretoria

Horizon Care Centre

Pretoria

Little Strivers Play School

Pretoria

Employees from Ford Credit assisted with gardening and general maintenance work at one of the homes housing 10 abandoned children at the SOS Children's Villages in Mamelodi.

Employees treated the mentally and physically disabled children with a special outing to a bird and animal farm, which entertained and delighted the children.

The Product Development team supported the crèche with funding that provided new sliding doors and a crew to repaint the facility walls. Little Strivers is housed at the FMCSA sports club, which is based at the Ford Assembly Plant.

Dunduzela Home for Abandoned Children

Pretoria

Product Development employees added finishing touches to the ablution facilities built in 2010. The next day the children were treated to an outing at the Rietvleidam Nature Reserve and a barbeque at the end of the day.

Circle of Life

Pretoria

FMCSA employees painted the facility and repaired the kitchen, replaced outside taps and fire extinguishers, and distributed food packages to the children with HIV-AIDS, including some orphans.

Tateni Home Care Nursing Services

Pretoria

HIV-affected orphans, adults and vulnerable families were assisted by employees from Marketing & Sales. The dining area for drop-in children was cleaned and painted. Volunteers also visited families and distributed food packages.

Viva SA – Mamelodi

Pretoria

A daycare for underprivileged families, orphans and vulnerable children was repaired and painted by Marketing & Sales volunteers; vegetable garden beds were tended; and some work was done in the workshop that will become a bicycle factory.

Taiwan

Yongan Harbor coast

Nine hundred people on the Ford Lio Ho Motor Company volunteer team conducted a coastal clean-up. The coordinators first promoted awareness of coastal protection with a special program for employees, and then invited all employees and local governmental representatives and the entire community to join the effort.

Tanzania

District of USA River

The entire Arusha community, and USA River District orphans and low-income families were helped by Hughes Motors during their month-long project. A percentage of parts and service receipts funded a community day and a special football match.

Thailand

Wat Chalermlap School

Chonburi Province

Ford Thailand employees renovated the school building, library, play ground and basketball court, donated equipment and hosted lunch and fun activities for the children.

Zimbabwe

Mukuvisi Woodlands Park

Harare

Duly Motors dealership employees repaired leaking ponds for the exotic and endangered birds and fish at this environment and animal conservation site.

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 – even during our darkest days. 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 volunteerism 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 2011, Ford contributed a total of nearly $30 million (slightly above 2010). Of that amount, $19.9 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 2011, some 25,000 Ford employees and retirees in 45 countries and 19 states provided more than 110,000 hours of work on more than 1,200 community service projects – the equivalent of $2.35 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. Ford of Mexico, for example, has been recognized as a Socially Responsible Company for nine consecutive years by the Mexican Philanthropy Center. The award is given to companies that encourage quality of life in the workplace, strong ethics, environmental care in operations and close involvement in the community. Ford and our dealers have supported the School Building Project in Mexico; this organization has built 212 schools in nearly every state in the country.

Related Links

This Report

- Ford Motor Company Fund and Community Services

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. These teams have come up with specific strategies for addressing these community needs, and work will begin in early 2012 to implement the strategies. We expect 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.

In the U.K. in 2011, Ford announced a major new, £1 million university scholarship program in the technical and innovation fields, to mark 100 years of Ford's commitment to the U.K. Called the Ford Blue Oval Scholarship Program, the program will provide 100 student scholarships (one for each year of the Company's operation in the U.K.) of £10,000 per student over a three-year period at leading universities. Through this program, we aim to encourage a new generation of engineers, scientists and innovators.

Ford Motor Company Fund and Community Services

Ford Motor Company Fund and Community Services Vision:

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. Recently, we expanded our "Operation Goodwill" 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, 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.

The following are other examples of some of our most significant or new programs.

- In 2009, we launched the Ford Mobile Food Pantries program to help social service organizations in southeast Michigan collect and distribute food to those in need. In the first year, we provided three Ford Transit Connect vans for food deliveries. We have since expanded the program significantly, having donated 21 vans for food collections and deliveries by the end of 2011. Overall in 2011, Ford contributed $221,000 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.
- For the 11th 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 foodbanks 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 104 refrigerated Ford trucks and vans now reaches into all 50 states. To date, our donated trucks have delivered more than 176 million meals to families across the country, particularly in hard-to-reach, underserved communities.
- In 2011, the Fund continued to support organizations and initiatives that preserve America's culture heritage and diversity, including two Smithsonian traveling exhibits: Freedom's Sisters, an exhibition that honors the legacy of 20 influential African-American women; and American Sabor, an exhibition that focuses on the musical contributions of Latino artists.
- Ford employees and Ford Motor Company Fund and Community Services are major supporters of the United Way in the U.S., giving nearly $8.1 million in 2011 to support numerous community-based social services organizations.
- Ford also 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 Veteran's 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

Related Links

This Report

- Case Study: Ford and Type 1 Diabetes

External Websites

- Fordcares.com
- Ford Driving Skills for Life
- Ford Partnership for Advanced Studies
- Henry Ford Academy
- Jesse Brown Memorial Youth Scholarship program
- March of Dimes
- National Disabled Veterans Winter Sports Clinic
- National Multiple Sclerosis Society
- Project SNAP
- Susan G Komen Race for the Cure

climbing. In 2011, Ford donated funds for Disabled American Veterans (DAV) to purchase nine new vehicles for its headquarters and the DAV Transportation Network, in addition to providing $25,000 to the DAV's youth volunteer scholarship program.

- The Fund supports teen safe driving through its award-winning Ford Driving Skills for Life (FDSFL) program, a safe-driving curriculum that has trained hundreds of thousands of U.S. teenagers through web-based and in-person driving sessions since the program was launched 2003. Developed by Ford, the Governors Highway Safety Association and a panel of safety experts, the free program addresses the no. 1 killer of teens – traffic crashes. FDSFL is the nation's most comprehensive driving skills program, with free professional driver instruction, a web-based curriculum, state grants and free materials. FDSFL launched a national high school tour in 2011, visiting 30 cities in 15 states. 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. FDSFL programs are tailored in each of these markets to reflect the local driving environment and road conditions.
- The Ford Partnership for Advanced Studies uses an academically rigorous and interactive curriculum to provide high school students with 21st-century learning experiences to enhance real-world skills. Since its inception in 2004, more than 150,000 students in 27 states have participated in the program, which relies on collaboration among high schools, community organizations, higher education institutions, government entities and businesses. The program was honored with the National Governors Association's first Public–Private Partnership Award for innovative educational programming, among other awards.
- The Henry Ford Learning Institute is a national nonprofit organization, which supports high schools that are focused on creativity and innovation, integrated with college-preparatory courses in math, science, social studies and language arts. The first such charter school – Henry Ford Academy (HFA) – was opened in 1997 in Dearborn, Michigan. Since then, three other HFA schools have opened in Detroit, Chicago and San Antonio, Texas.
- The Ford Driving Dreams Through Education Program, launched in 2010 in partnership with the League of United Latin American Citizens (LULAC), aims to address the high school dropout rate among Hispanic students. Twenty LULAC councils are receiving support to implement local programs that help students stay in school.
- The Ford College Community Challenge invites more than 30 partner universities and colleges to develop student-led programs that tackle a specific community issue. The five winning projects each use a $50,000 Ford grant to build sustainable communities in an innovative way. Recent projects include the nation's first conversion of a traditional school bus to a hydraulic hybrid vehicle that runs on recycled biofuel.
- Ford "Blue Oval" Scholarships are awarded to individual students through organizations such as the Hispanic College Fund, the American Indian College Fund, the United Negro College Fund, the Jesse Brown Memorial Youth Scholarship Program and the Society for Automotive Engineers Educational Foundation. In 2011, more than 1,000 scholarships were awarded, totaling $1.5 million.
- We are working with Project SNAP to thank members of the military for their service through Operation Grateful Nation. Operation Grateful Nation is a community-wide program taking place in Operation Goodwill cities across the country. The program provides 400 students in each city, along with families of veterans, the opportunity to create artwork and attach a message thanking members of the military for their service and sacrifice. Thousands of pieces of artwork will be collected from coast to coast to create a giant mosaic mural that will be installed in a prominent public location.
- Also in 2011, we launched Ford Community Corps, a new program in Michigan that we hope will be replicable elsewhere. We are working with four university partners – Wayne State University; the University of Detroit, Mercy; the University of Michigan, Dearborn; and Madonna University – to provide funding to match nonprofit needs with university resources. The program works with nonprofits to identify specific projects that students can complete, such as developing a business plan for a dental clinic or evaluating software to track fundraising efforts.

In addition to the above, Ford supports a wide variety of other organizations through direct corporate contributions and sponsorships. Highlights from 2011 include the following:

- For more than 20 years, Ford has been involved in helping find a cure for juvenile diabetes. See the Type 1 diabetes case study for more information.
- Ford has also been a long-time supporter in the fight against breast cancer. For 18 years, Ford has been a National Series Sponsor of the Susan G. Komen Race for the Cure® series and has dedicated more than $115 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 customized apparel that is sold on fordcares.com. This specially designed clothing and accessory line, called "Warriors in Pink," is dedicated to those fighting this disease, and 100 percent of net proceeds go to Susan G. Komen Race for the Cure. Since 2006, we have sold more than $9.2 million of the Warriors in Pink products. 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. 2011 was a significant year for the program, as we had the largest October ever

in apparel sales/donations to the cause due to a partnership with actress Jennifer Aniston and the *Lifetime Network*.

- Ford volunteers raised $520,000 for the March of Dimes. Ford Vice President Jim Tetreault and UAW Vice President Jimmy Settles served as UAW/Ford sponsors for the 2011 March for Babies campaign. The combined efforts of the UAW/Ford teams exceeded the outstanding results from 2010. Over the past seven years, the UAW/Ford team has raised more than $2.4 million.
- Ford and the UAW continued our longstanding partnership with the American Red Cross to host approximately 210 blood drives at various office and plant locations across the country, collecting nearly 8,000 pints of blood in 2011.
- Ford volunteers raised more than $146,633 for the National Multiple Sclerosis Society's Michigan Chapter in 2011.

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 2011.

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.

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.

The Ford Volunteer Corps comprises salaried employees, retirees and dealers across six continents who work to strengthen their communities. Ford Motor Company offers its U.S. salaried employees two workdays per year to volunteer in the community. Employees form "MODEL Teams" and volunteer to help nonprofit organizations. In 2011, more than 25,000 Ford employees and retirees in 45 countries provided more than 110,000 hours of volunteer time for their communities, or the equivalent of $2.35 million in in-kind corporate contributions.

The new, four-year UAW/Ford Collective Bargaining Agreement, finalized in late 2011, calls for the expansion of the Ford Volunteer Corps program, currently limited to Ford salaried and supplemental employees, across the UAW-represented workforce.

In 2011, Ford held five "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 2011, more than 60 community organizations shared $275,000 in mini-grants to support the volunteer projects (e.g., for purchasing the paint and lumber needed to complete a project). In 2011 we added a collection or drive to each action day. For example for our "Children and Families" day we collected diapers and formula, for our "Better World" day we collected electronic waste such as phones and printers, for our "Community Building" day we collected prescription lenses to be sorted and distributed throughout the world with a partner organization, and 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 across the U.S. Using this system, employees can go online to sign up for volunteer projects based on their interests and availability. In prior years, our volunteers would essentially tell the nonprofit organizations when we would provide hands-on assistance, without fully assessing when would be the best time for them. Now, our nonprofit partners can tell us when they need help and what manner of assistance they need. In 2010, the software was upgraded to help us expand our volunteer programs to other regions, strengthen data-collection capabilities and enhance the employee user experience.

In 2011, Ford held its sixth-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 early September, more than 12,100 Ford employees on six continents in 45 countries and 19 states contributed more than 55,100 hours of their time to over 244 volunteer projects touching 1.5 million lives. During this week, participants built homes; picked up trash in nature preserves, in wildlife refuges and on beaches; and fed the hungry, to name just some of the efforts. 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.

Also, as the marketplace becomes more diverse, we aim to better understand and serve our full range of customers. As part of our multicultural efforts, Ford has dedicated efforts to market Ford and Lincoln products to African-American and Hispanic customers. Ford has Spanish advertising programs targeting the U.S. Hispanic market. Ford has 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 one of the first to utilize Google with Spanish search programs.

This section discusses how we engage with customers, understand customer needs and build customer awareness of our products.

PEOPLE

- Workplace
- Dealers
- Communities
- Customers
  - Engaging Customers
  - Understanding Customer Needs
  - Building Customer Awareness
- Data
- Case Studies
- Voice: Felicia Fields

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 developed based on what we find and gather online, to convey what consumers are saying about our Company and our products. These reports are cascaded 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 policy, please see the Governance section of this report.

Related Links

This Report

- 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 will likely affect our consumers, our industry and our Company. We rely on a global network of internal and external experts to ensure that we get a diverse, 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 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 helps us develop vehicles that capture the imaginations, dreams and loyalty of our customers across the globe. Of course, we are keenly aware that economic pressures will push the boundaries of brand loyalties, and we will need to work even harder to define our potential customers and build vehicles they 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. This Global Consumer Trends and Futuring team is part of our ongoing effort to identify trends that will impact the future of consumers' values, attitudes and beliefs. The team collaborates with internal subject-matter experts and external thought leaders to ensure that we have a truly global and diverse view of the world. Ultimately, our goal is to see changes on the horizon and respond to them in a way that gives Ford a sustainable competitive advantage in terms of our product portfolio and business strategies.

The consumer trends we are tracking – and which currently guide our thinking regarding consumers and their future needs, wants and desires – include the following:

- 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.
- Increasing interest in safety and security. Safety and security remain a top priority, as concerns of health, wellness and well-being remain paramount in our day-to-day lives. Consumers are eager for products, services and experiences that provide lasting peace of mind.
- Growing consumer interest in "ethical consumption," or a desire to buy products from companies that reflect one's own environmental and social values.
-

An increasing focus on “careful consumption,” in which consumers have to balance their values, passions and preferences with practical purchases, particularly in mature markets where economic growth is modest.

- Expanding interest in vehicles that help consumers meet their increasing desire for information and connectivity and make the most of their time.
- A changing definition of luxury and shifting status symbols. While bold displays of wealth remain the primary means of showcasing status in emerging markets such as China, India and Brazil, inconspicuous consumption or “discrete chic” is becoming more common in mature markets.

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.

Related Links

This Report
- Policy Letters and Directives

External Websites
- Ford Social

These communication efforts – coupled with delivering products with world-class quality, fuel economy, technology and other features – are paying off. We saw increases in favorable opinion and purchase consideration for our products across the U.S., Canada, India and Thailand.

We track consumers' familiarity with, opinion and consideration of, and shopping and purchase intentions for 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 channels, such as Twitter, Facebook, YouTube and blogs, are increasing in importance and influence, especially with the so-called "millennial generation," i.e., those born from the late 1970s through the late 1990s. With smartphone and tablet use growing – one recent statistic cites iPhones being created at a faster rate than babies being born – the mobile element of social media will continue to drive the adoption and widespread use of social media.

We are using social media in innovative ways to connect with customers and get the word out earlier than ever about our new products. With the Fiesta Movement in 2009, for example, we put the new Ford Fiesta in the hands of 100 consumers and let them drive it and talk about it via social media channels for six months. In 2010, we were the first automaker to skip the auto show and go straight to our fans, revealing the all-new Ford Explorer on Facebook. Also in 2010, Focus Rally: America showcased the all-new Ford Focus in an online interactive reality show. In 2011, we introduced Doug, the wisecracking orange puppet, in a web video series. Doug also had his own Twitter account and Facebook page where he interacted with fans and drove purchase consideration among a nontraditional set of consumers. This year with Escape Routes, we're taking it to the next level as we make the ultimate interactive reality show bigger, better and more exciting, with an integration of original programming on NBC on Saturday nights for six weeks.

Beyond these large campaigns, our efforts with groups of influencers have expanded as well. In June 2011, we invited 100 digital influencers from technology, environmental and lifestyle blogs and shows to join us in Dearborn for a two-day "TED-style" conference called Forward with Ford. At this conference, credible third-party experts and Ford subject-matter experts shared views on issues that are affecting everyone globally. It was a major success, with thousands of pieces of content being produced and Ford being credited as a thought leader for attempting such an event.

We followed up on this in January 2012 by inviting 150 bloggers from 16 countries to Detroit for the North American International Auto Show for the reveal 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. Twitter

remains the best resource for real-time assessment of what people are saying about us and provides us with a valuable platform for listening.

And, we are making it easier for visitors to our Ford websites 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. 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 with others directly through their social networks.

In a similar vein, we hosted a Built Ford Tough Roundup to launch the 2011 F-150. This test-drive campaign gave thousands of potential customers the opportunity to test drive the new Ford F-150 months before it arrived in dealer showrooms. The program allowed people to see how the truck compares to competitor vehicles in an acceleration drive, and to test how the new EcoBoost® engine performed when towing a trailer.

We're taking another step forward in 2012 by introducing a new global brand promise, which is summarized by the phrase "Go Further." Go Further, put simply, represents our culture and what makes Ford different from any other automaker. It promises that we are always going to go further to deliver Great Products, a Strong Business and a Better World for each other and for our customers. While Go Further will be used for marketing and advertising beginning in 2012, 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. Our ONE Ford plan is not changing. Go Further is the spirit we put into delivering that plan every day.

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" campaign. Through this program, participants test-drive a Ford Explorer, Focus or Fiesta or other new Ford vehicle and help raise money for their local high school. 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 sporting and other activities at the designated school. Since the program's inception in 2007, and as of February 2012, more than 2,800 of these events have taken place across the country, raising more than $10 million to support high schools nationwide through Drive One 4 UR School and its program extensions. These events have enabled more than 495,800 participants to test-drive Ford products and have proven especially beneficial in getting non-Ford owners into Ford vehicles, as approximately 69 percent of participants did not currently own a Ford product. Feedback from participants shows that both purchase consideration and favorable opinion of the Ford brand improved after individuals had a chance to get behind the wheel and experience the Ford vehicle lineup firsthand.

We are also working to improve the effectiveness of our auto show presence around the world. Approximately 24 million people attend auto shows in the U.S. alone, so these are important opportunities to engage and share information with potential customers. At all of the major auto shows, we now use a wide range of interactive exhibits that help us better engage visitors and provide the kind of hands-on experiences that keep people at our exhibits longer and influence customer decision making. In fact, our exhibits are now the most interactive of any automaker. At the 2011 North American International Auto Show in Detroit, for example, we had 22 interactive

exhibits, including slot car racing, live games and shows, vehicle simulators, and electric vehicle rides on an elevated track. The exhibits revolve around our core brand attributes of fuel economy, quality, safety and smart technologies. For example, the displays included a hands-on experience with the Fusion Hybrid's SmartGauge™ with EcoGuide technology, as well as interactive touch tables illustrating the environmental benefits of both soy-based seat cushions and EcoBoost engines.

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.

Home > People > Customers > Building Customer Awareness

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.

In 2010, we launched a website to help consumers understand the different electrified vehicle 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 like 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. 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, it 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 Impacts.

In early 2012 we also revealed our collaboration with SHFT.com, announcing an inspiring documentary series featuring innovative leaders who are shaping sustainable businesses and influencing positive change around the world. We joined forces with SHFT.com to inspire people through film, design, art, transportation and culture to make smarter environmental decisions. The project includes developing creative content, such as a short documentary series, as well as live-event programs and film festivals to further spread their shared mission. The first set of films is scheduled for release in spring 2012. This unique series of digital short films highlights 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 new, 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 Climate Change Progress and Performance section.

Related Links

This Report

- Climate Change Progress and Performance
- Electrification: A Closer Look
- Eco-Driving
- Quantifying Our Environmental Impacts

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 Climate Change section.

PEOPLE

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- Case Studies
- Voice: Felicia Fields

Data

IN THIS SECTION

Engagement and Community

- Employee Satisfaction, Pulse Survey
- Overall Dealer Attitude
- Employment by Business Unit
- Total Purchases from Minority-owned Businesses – United States
- Total Purchases from Women-owned Businesses – United States
- U.S. Employment of Minority-group Personnel and Women at Year-end
- Charitable Contributions
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Workplace Safety

- Global Lost-time Case Rate (per 100 Employees)
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DATA

Engagement and Community

DATA ON THIS PAGE

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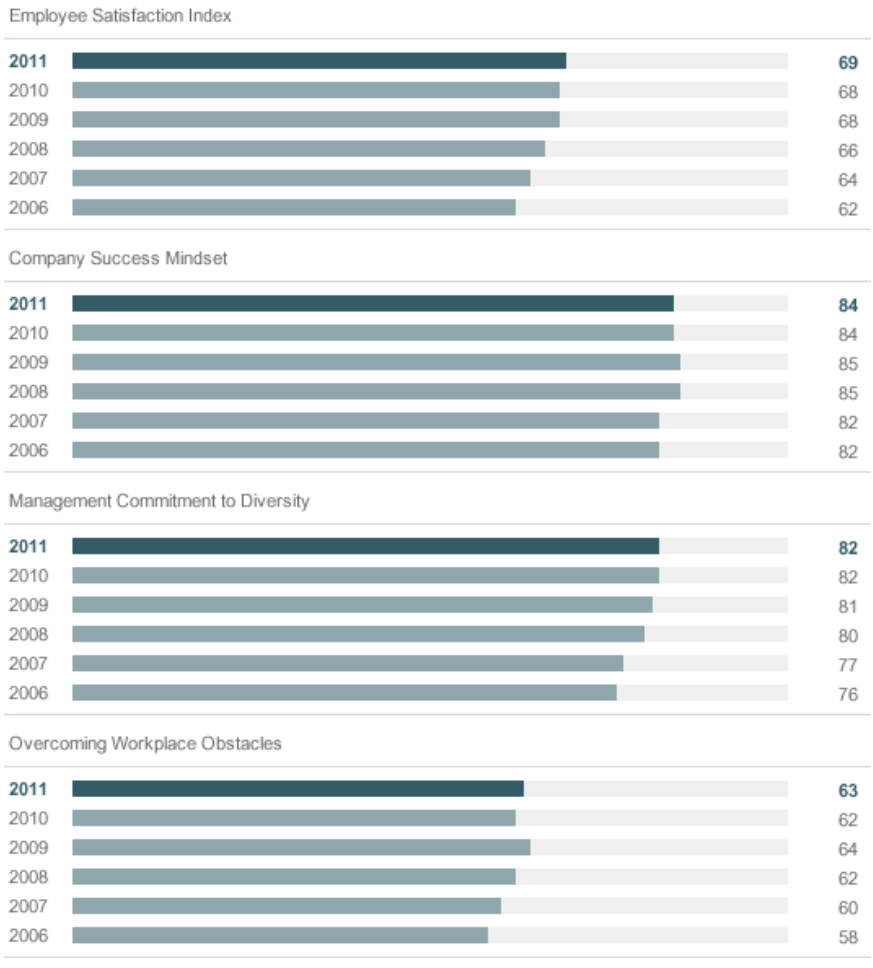
A. Employee Satisfaction, Pulse Survey

Percent satisfied



	2006	2007	2008	2009	2010	2011
Employee Satisfaction Index	62	64	66	68	68	69
Company Success Mindset	82	82	85	85	84	84
Management Commitment to Diversity	76	77	80	81	82	82
Overcoming Workplace Obstacles	58	60	62	64	62	63

Notes to Data

In 2006, the Pulse survey was changed to incorporate new dimensions. While there was no change to the number or content of the existing 55 core questions asked on Pulse, they were realigned into eight revised dimensions. These changes were made because the revised dimensions are better focused on current business priorities and can provide a framework for more focused feedback and action planning. In addition, the revised Employee Satisfaction Index can be benchmarked externally; none of the prior 13 dimensions could be benchmarked outside the Company.

Employee Satisfaction Index continues an 8-year trend of scores equal to or better than prior year. Management Commitment to Diversity continues a 5-year trend of scores equal to or better than prior year.

Related Links

In This Report:

- Employee Satisfaction

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B. Overall Dealer Attitude

Relative ranking on a scale of 1–100 percent

	2006	2007	2008	2009	2010	2011
Ford (winter/summer score)	64/64	64/69	69/68	71/80	83/85	84/82
Lincoln Mercury (winter/summer score)	64/62	64/66	66/64	66/71	71/62	61/64
Industry (winter/summer score)	71/70	70/72	73/72	70/74	75/78	80/81

Notes to Data

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 67 percent of our dealers provided feedback through the Summer 2011 NADA survey process. We showed notable improvement in many areas in this survey, including in our Regional Sales, Service and Parts Personnel rankings.

Related Links

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- Dealers

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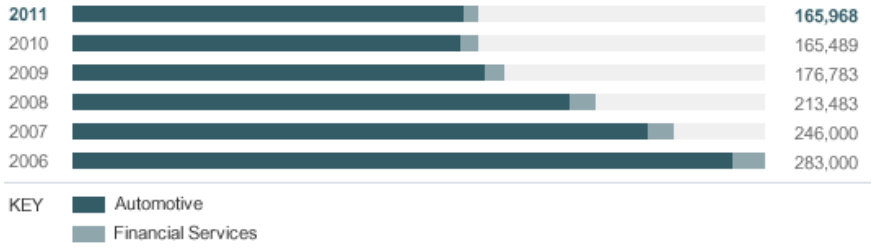
C. Employment by Business Unit

Average number of people employed



	2006	2007	2008	2009	2010	2011
Automotive	270,000	235,000	203,316	168,610	158,470	159,540
Financial Services	13,000	11,000	10,167	8,173	7,019	6,428
Total	283,000	246,000	213,483	176,783	165,489	165,968

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

In This Report:

- Employees

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D. Total Purchases from Minority-owned Businesses – United States

$ billion

2006	2007	2008	2009	2010	2011
3.7	4.2	3.3	2.7	3.8	5.1

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 2011, Ford purchased $5.08 billion in goods and services from approximately 250 minority-owned suppliers and $1.06 million in goods and services from more than 150 women-owned businesses. Our 2011 results were an improvement over 2010, exceeding our sourcing goals for both minority- and women-owned suppliers.

Related Links

In This Report:

- Supplier Diversity Development

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E. Total Purchases from Women-owned Businesses – United States

$ billion

2008	2009	2010	2011
0.763	0.539	0.866	1.06

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 2011, Ford purchased $5.08 billion in goods and services from approximately 250 minority-owned suppliers and $1.06 million in goods and services from more than 150 women-owned businesses. Our 2011 results were an improvement over 2010, exceeding our sourcing goals for both minority- and women-owned suppliers.

Related Links

In This Report:

- Supplier Diversity Development

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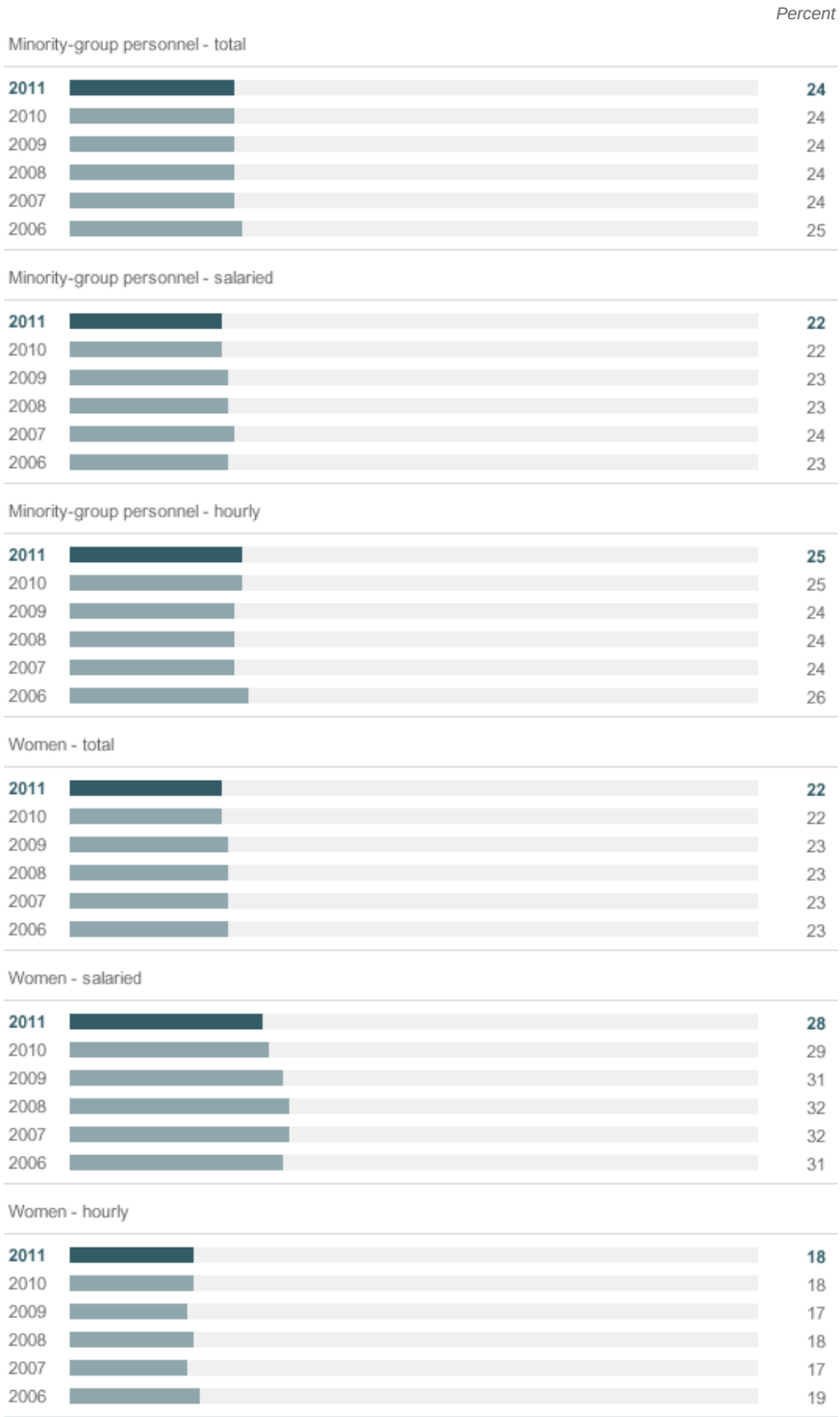
F. U.S. Employment of Minority-group Personnel and Women at Year-end



	2006	2007	2008	2009	2010	2011
Minority-group personnel – total	25	24	24	24	24	24
Minority-group personnel – salaried	23	24	23	23	22	22
Minority-group personnel – hourly	26	24	24	24	25	25
Women – total	23	23	23	23	22	22
Women – salaried	31	32	32	31	29	28
Women – hourly	19	17	18	17	18	18

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

In This Report:

- Diversity and Inclusion

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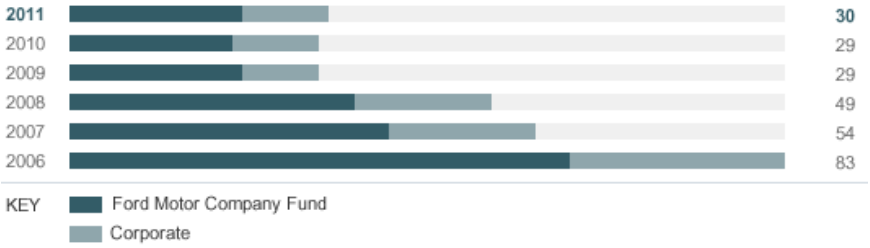
G. Charitable Contributions

$ million



	2006	2007	2008	2009	2010	2011
Ford Motor Company Fund	58	37	33	20	19	20
Corporate	25	17	16	9	10	10
Total	83	54	49	29	29	30

Related Links

In This Report:

- Investing in Communities

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H. Volunteer Corps

Thousand volunteer hours

2006	2007	2008	2009	2010	2011
80	86	100	100	112	110

Notes to Data

The Ford Volunteer Corps was founded in 2005, and 2006 is the first year data are available. However, volunteerism and community service have long been a part of Ford's culture, and these efforts were formalized in 1997 with the creation of the 16-hour Community Service Program.

Related Links

In This Report:

- Ford Volunteer Corps

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DATA

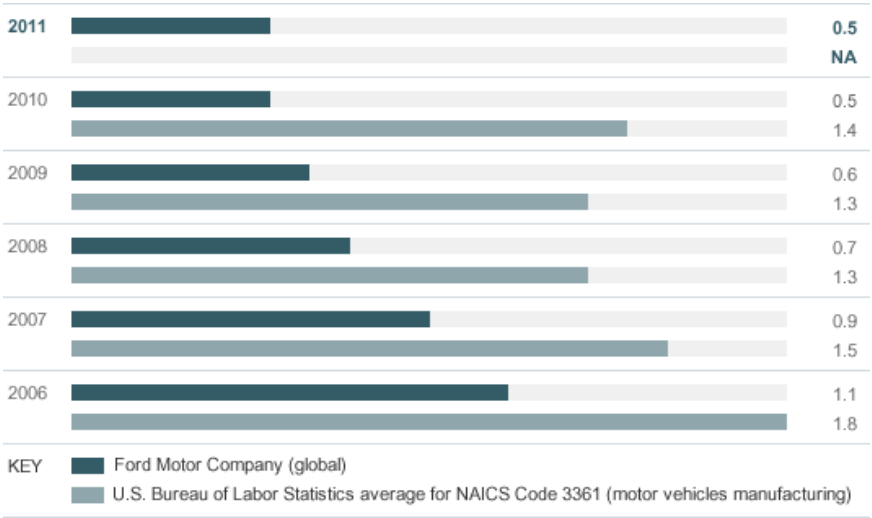
Workplace Safety

DATA ON THIS PAGE

View all data on this page as charts | tables

A. Global Lost-time Case Rate (per 100 Employees)

Cases with one or more days away from work per 200,000 hours



	2006	2007	2008	2009	2010	2011
Ford Motor Company (global)	1.1	0.9	0.7	0.6	0.5	0.5
U.S. Bureau of Labor Statistics average for NAICS Code 3361 (motor vehicles manufacturing)	1.8	1.5	1.3	1.3	1.4	NA

Related Links

In This Report:

- Workplace Health and Safety

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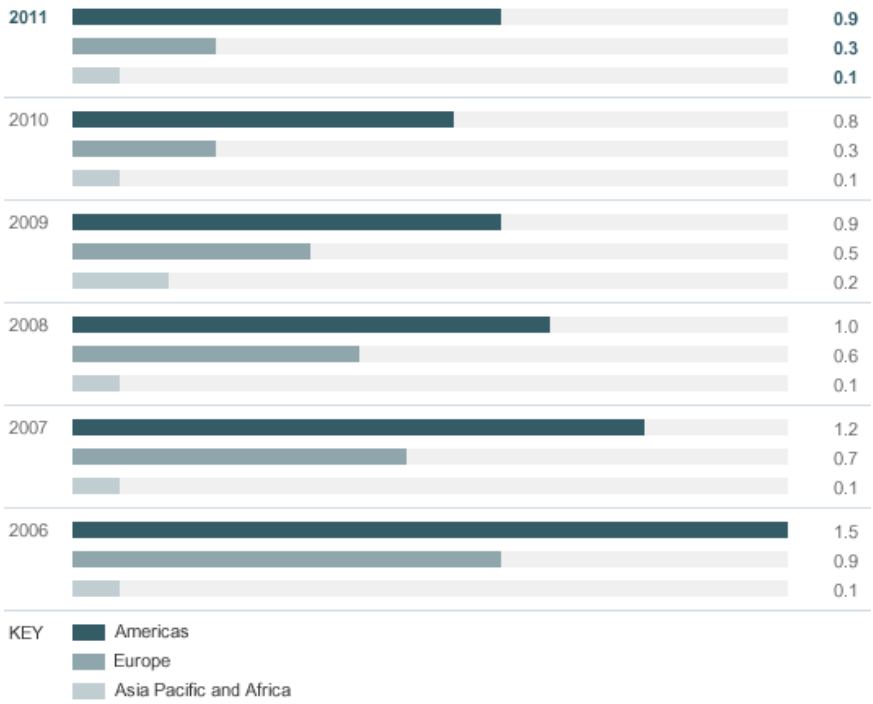
B. Lost-time Case Rate by Region (per 100 Employees)

Cases with one or more days away from work per 200,000 hours



	2006	2007	2008	2009	2010	2011
Americas	1.5	1.2	1.0	0.9	0.8	0.9
Europe	0.9	0.7	0.6	0.5	0.3	0.3
Asia Pacific and Africa	0.1	0.1	0.1	0.2	0.1	0.1

Reported to regulatory authorities

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In This Report:

- Workplace Health and Safety

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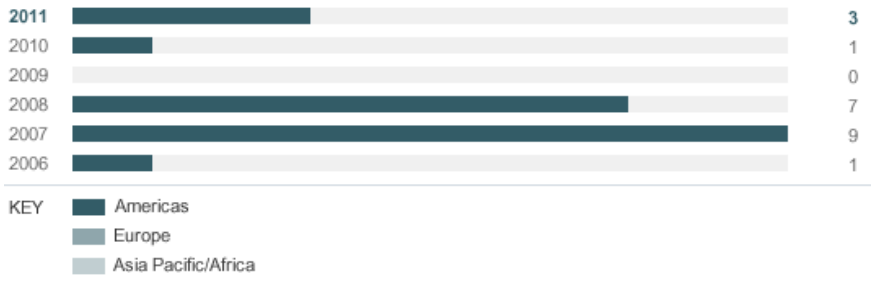
C. Workplace Health and Safety Violations

Number of violations



	2006	2007	2008	2009	2010	2011
Americas	1	9	7	0	1	3
Europe	0	0	0	0	0	0
Asia Pacific and Africa	0	0	0	0	0	0
Total	1	9	7	0	1	3

Related Links

In This Report:

- Workplace Health and Safety

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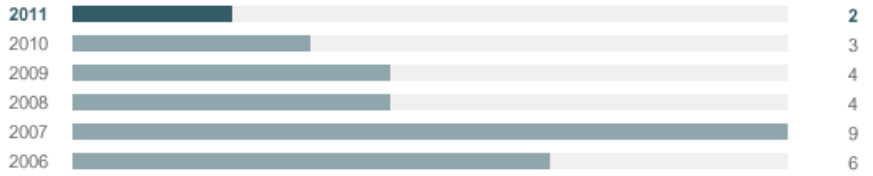
D. Global Fatalities

Number of fatalities



2006	2007	2008	2009	2010	2011
6	9	4	4	3	2

Notes to Data

Global fatalities data include Ford employees and contractors.

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- Workplace Health and Safety

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  - Case Study: Ford and Type 1 Diabetes
- Voice: Felicia Fields

Case Studies

IN THIS SECTION

Case Study: Ford and the Military

Ford has a long history of supporting the military. Today, we continue to support our military, and, in particular, those members of the military whom we also employ. In September 2011, Ford was honored with the Employer Support Freedom Award – the U.S. Department of Defense's highest recognition given to companies for support of employees serving in the National Guard and Reserve.

Case Study: Ford and Type 1 Diabetes

Read about how Ford is helping to improve the lives of all people affected by T1D through our support of JDRF, the leading global organization focused on T1D research.

Home > People > Case Studies

Case Study: Ford and the Military

Ford has a long history of supporting the military – dating back to at least 1922, when Henry Ford organized a caravan of 50 Model Ts to take disabled World War I veterans to a convention in San Francisco. And during World War II, the Company shut down civilian vehicle production to dedicate all of our resources to the Allied war efforts.

Today, we continue to support our military, and, in particular, those members of the military whom we also employ. In September 2011, Ford was honored with the Employer Support Freedom Award – the U.S. Department of Defense's highest recognition given to companies for support of employees serving in the National Guard and Reserve. Ford was one of 15 companies nationwide selected for the award, out of nearly 4,100 nominations.

We received a total of six nominations from our own Guard and Reserve employees. One of those nominations came from Todd Brooks, a Ford engineering supervisor who was serving in the Navy Reserve. "There is an incredible untold story of compassion, commitment and corporate leadership that Ford Motor Company has been quietly providing to the nation's veterans for years," said Brooks, who was selected as the Navy Reserve Reservist of the Year in 2007. "Ford makes service to our country much easier. From senior leadership all the way down the ladder, they understand the necessity of the citizen soldier and the difficulties their loved ones face as a result of their commitment."

Many Americans don't realize that when an individual is called for National Guard or Reserve duty, they often take a cut in pay, thus intensifying the hardship for the military members and their families. At Ford, we have agreed to make up that pay difference for any of our military Reserve and National Guard employees when called to active duty following the attacks of September 11, 2001.

Ford has approximately 700 National Guard and Reserve employees – about 30 of them on active duty. Overall, we have some 7,000 veterans at Ford and a strong Veterans Network Group that provides year-round support for military members and their families – both within Ford and within our communities.

Since 1974, Ford Motor Company and the Ford Motor Company Fund and Community Services have contributed more than $6 million to veterans' organizations, including Disabled American Veterans (DAV). Ford has donated funds for the purchase of more than 150 vehicles to DAV for their Transportation Network and sponsors the organization's annual winter sports clinic. (See the Communities section for more on our support of veterans' groups.)

The Fund recently began partnering with the Honor Flight Network, a nationwide program that transports World War II veterans to see their memorial in Washington, DC, free of charge. In November 2011, we sponsored a flight for more than 30 veterans from the Detroit area. In 2012, we plan to sponsor another flight out of Detroit and a flight out of Louisville, Kentucky, on the anniversary of D-Day (June 6).

Ford has been a partner of the American Red Cross for more than 30 years, contributing to the critical efforts of the Red Cross in disaster relief. In 2012, Ford will build on this partnership with support for the Red Cross's "Service to the Armed Forces" programs. These programs support members of the U.S. Armed Forces, veterans and their families on 58 military installations and medical facilities around the world and through a network of Red Cross chapters. In 2011, Red Cross workers provided nearly 400,000 services to military members, veterans and their families. Ford's contributions will provide scholarships and other services to military spouses and families.

Another way we support our military isn't as an employer, but as a seller of vehicles. Our Military Appreciation Program provides members of the military with an opportunity to receive a $500 bonus cash offer good toward the purchase or lease of any eligible new Ford or Lincoln car, truck or SUV.

Related Links

This Report

- Communities

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  - Case Study: Ford and the Military
  - Case Study: Ford and Type 1 Diabetes
- Voice: Felicia Fields

Case Study: Ford and Type 1 Diabetes

Each year, as many as 30,000 people in the United States are diagnosed with type 1 diabetes (T1D), both children and adults. Important advancements have been made in diabetes research, yet scientists are still working toward finding possible causes and cures for this autoimmune disease.

People living with T1D must take insulin either through injections or a pump, and test their blood sugar levels multiple times every day. While insulin is needed to help manage T1D, it does not protect against its devastating complications, such as kidney failure, blindness, nerve damage, amputations, heart attack and stroke.

For nearly three decades, Ford has been involved in helping to improve the lives of all people affected by T1D through our support of JDRF, the leading global organization focused on T1D research. JDRF aims to accelerate progress on the most promising opportunities for curing, better treating and preventing T1D. In 1983, Ford hosted a JDRF fundraising walk in Dearborn. In 1998, the grassroots employee initiative now known as the Ford Global Walk Team began, with Edsel B. Ford II as the corporate team chair. The event has grown dramatically over the last decade. Since 2002, Ford Motor Company has been JDRF's largest corporate – and only international – sponsor.

Ford volunteers donate significant time to leverage the Company's financial support of JDRF, participating in walks and holding book sales, silent auctions and raffles to raise money for T1D research. Together with support from the UAW and national partner companies Mazda, BP and WPP, our volunteers raised more than $3.2 million in 2011, bringing the total amount raised by Ford volunteers to $39 million since 1998.

Ford is proud to have been presented with the JDRF President's Award for nine consecutive years, earning recognition as the Top Corporate Sponsor in the world. In 2011, Ford was presented the Pillar Award, recognizing Ford as a 10-year-plus partner, successfully raising awareness and funds for JDRF research.

Driven by passionate, grassroots volunteers connected to children, adolescents and adults with T1D, JDRF is now the largest charitable supporter of T1D research. Since its founding in 1970, JDRF has awarded more than $1.6 billion to diabetes research. Past JDRF efforts have helped to significantly advance the care of people with this disease, and have expanded the critical scientific understanding of T1D. JDRF will not rest until T1D is fully conquered. More than 80 percent of JDRF's expenditures directly support research and research-related education.

Related Links

External Websites

- Ford Global Walking Team
- JDRF

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Felicia Fields

Group Vice President, Human Resources and Corporate Services
Ford Motor Company

There's a renewed sense of energy and pride at Ford today. We're no longer talking about our survival. We're talking about thriving, growing and continuing to build an incredibly successful Company. At the same time, however, our leadership team understands that we can never be complacent. Our employees are committed to helping us maintain our momentum. They remain focused every day on helping Ford to deliver profitable growth so we never again have our backs against the wall.

As we have evolved into a truly global Company, we have refocused our priorities and changed the way we work. We have learned how to leverage our scale while better integrating each region of our operations. Even simple collaboration with colleagues in different time zones can prove challenging. Frankly, we couldn't continue to work the same way that we always had, especially with fewer people and a leaner Company. But it is for the better. We never want to return to the days where individuals worked in silos.

From a human capital perspective, all of this means we must continue to push even harder to make Ford a great place to work – whether that's through flexible working schedules or by equipping our people with technology that allows them to do their jobs in more convenient ways. We have revamped our performance management system to better clarify our expectations of employees and how their contributions affect other parts of the business and the Company's overall success. We're also working to be more candid and transparent about our Human Resources systems and processes than we ever have been before.

The ONE Ford strategy has been essential to our Company's success over the last several years. Our CEO, Alan Mulally, created the ONE Ford strategy when he joined Ford in 2006. But our employees have been responsible for implementing it and making it real. ONE Ford isn't just something that is written on a piece of paper. It's the way our people think. It's how they behave. And it's how they align what they do every day with our Company's plan. Through their "can do" attitude, our employees have brought ONE Ford to life.

This Company has long been filled with people who are extremely proud and loyal. So ONE Ford truly became a rallying cry, which quickly resonated with employees. It was easy for them to embrace this culture change because it was something they believed in and wanted to follow. ONE Ford not only gave us a goal and a plan, but it presented a set of expected behaviors that our workforce could put into action. It made everyone accountable for our Company's success.

Our new "Go Further" campaign takes the concept one additional step. To understand how the two pieces work together, it helps to think of ONE Ford as the forward-looking vision, bridging what we do with how we behave. Go Further highlights the fact that we go further in everything that we do – whether it's caring about each other as employees, delivering innovative products to our customers or serving in our communities. It's not a new sentiment that we're trying to embrace. It's something we have uncovered about who we are and what makes us special as a Company.

After years of separations, we're now hiring again and we're focusing on ways to attract and retain talented individuals – through employee development programs that sharpen their skills, through

Related Links

This Report

- "Going Further"
- Our Strategy

opportunities to work in other parts of the world, and through competitive compensation and benefits, among others. Even in our darkest days, we knew that our Company would grow stronger as economies got stronger.

Our employees are our customers, too, and they can be incredible ambassadors for our products. The more we share with them about where we are going, the more exciting and inspiring it is for each of them.

Go Further

Sustainability 2011/12

FORD AROUND THE WORLD
- Ford Asia Pacific and Africa
- Ford of Europe
- Ford South America

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

Ford's success is powered by a commitment that's global in scale. Around the world, we are reducing the environmental impact of our products and facilities, supporting positive social change and ensuring economic viability for long-term growth.

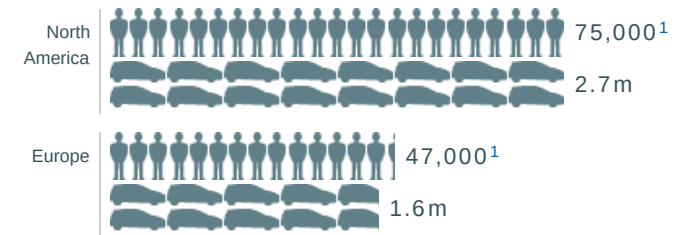
That's why this year, for the first time, we are highlighting key regional sustainability initiatives in their own sections of our full report.

Our business is organized by four regional segments: North America, South America, Europe and Asia Pacific and Africa. North America and Europe are our largest markets. The automotive industry in Europe is intensely competitive, and expected to intensify further.

The Asia Pacific and Africa region is our fastest-growing market. To meet this growing demand, we're expanding our dealer networks and building seven new, state-of-the-art, highly flexible manufacturing facilities to provide production capacity of 2.3 million vehicles by mid-decade. In China, we are also significantly expanding our research and engineering center in Nanjing.

Brazil and Argentina are our highest-volume South American markets. Brazil's economy and demographics have helped its automotive market to more than double since 2002 and are expected to contribute to continued growth in vehicle sales.

Our Regions at a Glance



CO_2 Reductions in Europe

In Europe, our ECOnetic models are driving improvements in fuel efficiency and CO_2 reductions.

Conservation in China

Ford of China's grants program supports grassroots efforts in environmental protection and natural resources conservation.

Emissions Reductions in South America

With our New Cargo Euro 5 line of trucks, we will reduce polluting emissions by 80 percent while improving power and fuel economy.

Related Links

Corporate.ford.com

- Our Operations

South America
16,000[1]
506,000

Asia Pacific Africa
19,000[1]
901,000

KEY: PEOPLE EMPLOYED[1] VEHICLES SOLD IN 2011

Discover more about our global organization by visiting our website.

1. All of the regional employment figures were as of year-end 2011 and do not include Ford Motor Credit employees.

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.

We expect 60–70 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 3 million vehicles in the region by mid-decade. In China, we are also significantly expanding our research and engineering center in Nanjing.

2011 Performance Highlights

- We are building seven new plants – five in China and two in India – as part of our plan to have production capacity of 3 million vehicles in the region by mid-decade.
- We have increased our overall market share in the Asia Pacific and Africa region by 0.3 percentage points in 2011 compared to 2010, including market share increases in the fastest-growing regional markets of China and India.
- We launched EcoBoost®-equipped vehicles in China, Taiwan, Malaysia and Australia in 2011.
- Ford India achieved a 45 percent reduction in water usage per vehicle in 2011 through a range of water-conservation initiatives.
- In China, the Ford Fiesta received a maximum 5-star safety rating from the China Automotive Technology and Research Center (CATARC), which recently released its C-NCAP (China New Car Assessment Program) ratings.
- In Australia, the Ford Edge was named a Top Safety Pick by the Insurance Institute for Highway Safety.

Awards

- For the second consecutive year, the all-new Ford Fiesta was named the “Best Compact Hatchback of the Year” by Indonesia’s popular *Auto Build* magazine. In China, the Ford Fiesta was selected as “Best Value for the Money” in the small-car segment by *Smart Money* magazine at Auto Shanghai 2011. And, the Ford Fiesta 1.6L sedan was named “Best Sedan under 1,600cc” at the Bangkok Motor Show.
- The all-new Ford Focus earned New Zealand’s “Car of the Year” award, despite having been on sale only a few months. The judging panel for this award – the country’s most prestigious motoring honor – was composed of more than two dozen members of the Motoring Writers’ Guild, including journalists from newspapers, magazines, websites, radio and television.
- Ford Australia won four of *Drive*’s “Car of the Year” awards: (1) Ford Focus:

Our global vision emerges from a deep understanding of what drives people in local markets

19,000

people employed in Asia Pacific and Africa[1]

901,000

vehicles sold in Asia Pacific and Africa in 2011

Best Small Car, (2) Ford Territory: Best SUV Over $40,000, (3) Ford Ranger: Best Safety Innovation, and (4) Ford Mondeo Zetec EcoBoost: Best Family Car

- The Ford Figo received the “Indian Car of the Year 2011” award from the All Magazine Editor Jury. The Figo also won “Small Car of the Year” from BBC Top Gear.
- *Fortune* magazine (China edition) ranked Ford 4th on its “Most Responsible Companies” list and is the highest ranked automobile manufacturer.
- Ford Lio Ho was named one of Taiwan’s Top 50 corporate citizens by *CommonWealth* magazine. Specifically, the magazine’s 2011 Excellence in Corporate Social Responsibility competition ranked Ford 6th in the category of “Foreign Enterprises.”
- In South Africa, Ford was awarded the GBC Business Action on Health Award, in recognition of our involvement in the fight against HIV/AIDS in that country.
- Ford India was ranked 17th in Aon Hewitt’s list of “Best Employers in India 2011.”

1. As of year-end 2011. Does not include Ford Motor Credit employees.

Joe Hinrichs

President,
Ford Asia Pacific and Africa

FORD ASIA PACIFIC AND AFRICA

Welcome

At Ford, growth and sustainability go hand in hand. In both respects, these are incredibly exciting times at Ford in Asia Pacific and Africa (APA).

From a product perspective, Ford has a very aggressive growth plan. By 2015, we will bring more than 50 new vehicles and powertrains to our APA region. Our sustainability vision is likewise clear and ambitious. In APA and globally, Ford seeks to be a fuel-economy leader with every new vehicle we introduce.

- Across APA, we are introducing powerful technologies such as our smallest-ever 1.0L EcoBoost® engine, which, despite its smaller proportions, delivers power and performance that will rival a traditional 1.6L gasoline engine while emitting less than 140g/km of carbon dioxide (CO_2)
- In China, Ford is set to improve fleet fuel economy by 20 percent and cut CO_2 emissions by 15 percent between 2010 and 2015

To support Ford's aggressive product expansion plans, we are investing in production capacity by building seven new plants in APA, all of which utilize our cutting-edge green manufacturing technology. For example, across the region between 2000 and 2011, Ford's plants reduced per vehicle water use by 25 percent through a host of new systems and innovative technologies.

- In Australia, our Geelong engine plant installed a new cooling tower system that cut water consumption by 80 percent
- In India, our Chennai assembly plant implemented a host of water re-use innovations and became one of Ford's most water-efficient plants, achieving 1.16 cubic meters of water use per vehicle
- In South Africa, our Silverton Assembly Plant is set to build a new wastewater treatment system, which will double water re-use at the site

Finally, beyond delivering great products and building a strong business, our Company is committed to creating a better world and continues to make an impact in our community.

- Ford Driving Skills for Life has trained more than 50,000 people in the APA region on fuel efficiency and safety, with 12,000 more people set to participate in 2012
- Since 2000, Ford's "Conservation and Environmental Grants, China" has supported 278 organizations and individuals

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.

Joe Hinrichs
President

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FORD ASIA PACIFIC AND AFRICA

Financial Health

Ford experienced strong sales and growth in many of our regional markets in 2011. China and India are burgeoning markets that are expected to continue to experience rapid and substantial growth in the next 10 years, making the Asia Pacific and Africa (APA) region our fastest-growing market.

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, annual vehicle sales in the Asia Pacific and Africa region will likely top 52 million vehicles, and one in every three vehicles Ford sells 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 7 percent in 2011 compared to 2010, totaling 901,000 units. Our overall market share for the region increased to 2.7 percent in 2011 from 2.4 percent in 2010. Our market shares in key markets in this region are shown in the table below.

Asia Pacific and Africa Market Shares

Major Markets	2011 Combined Car and Truck Market Share	Percentage Points Better/(Worse) than 2010
Australia	9.0%	(2)
China	2.7%	0.2
India	2.9%	0.3
South Africa	8.4%	0.7
Taiwan	6.1%	No Change

APA at a Glance

- More than $6 billion invested since 2006
- 3,000 jobs to be added by 2015
- 25 manufacturing and assembly plants
- Under construction: 4 new assembly plants, 2 engine plants, 1 transmission plant

Since 2006, we have announced investments of more than $6 billion in the APA region, including the following in recent years:

- In 2011 we broke ground on a $350 million transmission plant in Chongqing, China, as part of our Changan Ford Mazda Automotive (CFMA) joint venture. This will be our first transmission plant in China, with initial capacity of 400,000 six-speed transmissions per year
- In April 2012 we announced a $600 million investment to raise the CFMA's capacity by 350,000 units, as well as a $760 million investment to build a new CFMA assembly plant in Hangzhou with an annual capacity of 250,000 units
- The CFMA built a new $490 million assembly plant that came online in March 2012. A $500 million, state-of-the-art engine plant in Chongqing is under construction
- Ford and our commercial vehicle partner Jiangling Motors Corp. (JMC) are investing $300

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million in an assembly plant in Nanchang, China, that will produce Ford- and JMC-branded vehicles

- In early 2012, we announced we will be investing $142 million to build a new compact SUV – the EcoSport – at our plant near Chennai, India
- We're investing $72 million to increase production capacity at our Chennai engine plant
- We broke ground in 2011 on a $1 billion integrated manufacturing facility in Sanand, Gujarat, India. The new plant will create 5,000 jobs and will initially produce 240,000 vehicles and 270,000 engines per year, starting in 2014
- In Thailand, we invested $450 million in a new plant in Rayong province that is building the Ford Focus for Thailand and other Asian markets

Small cars account for 60 percent of APA industry sales volume and are anticipated to continue to benefit from favorable government policies. The highly successful launches of our all-new Figo and Fiesta demonstrate our ability to successfully compete in this key growth segment. We anticipate further success with the introduction of the all-new EcoSport later in 2012. The EcoSport will be based on Ford's global B-car platform, like the Fiesta, and 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, 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 early 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 health care. Read more about the SUMURR project in the case study found in our web report.

For a discussion of our global economic impact and financial health, please see the Financial Health section.

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FORD ASIA PACIFIC AND AFRICA

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. 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 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.

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- Climate Change and the Environment
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Ford APA has committed to improving fuel efficiency. We're delivering on this commitment 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 China and improve fuel economy up to 20 percent (compared to 2010) by 2015.

Ford has launched EcoBoost-equipped vehicles in China, Taiwan, Malaysia, Australia, New Zealand and Japan. EcoBoost engines use turbocharging and direct injection along with reduced displacement to deliver significant fuel-efficiency gains without sacrificing engine power or vehicle performance. (Read more about EcoBoost in our Climate Change section.)

We launched the Falcon EcoLPi in Australia in 2011. The Falcon EcoLPi uses an advanced liquid injection LPG system which takes the place of the gasoline tank and improves fuel economy by 12–15 percent while also improving performance by approximately 27 percent over the prior model.

As a technology leader in biofuels, Ford will continue to develop and introduce flex-fuel vehicles that meet market needs throughout the region. All current Ford models are compatible with ethanol blends of 10 percent (E10), with the Ford Focus and Ford Escape SUV already compatible with ethanol blends of 20 percent (E20). Ford was the first manufacturer in Thailand and the Philippines to make available an E20-capable vehicle – the E20 Ford Focus – in support of the Thai government's E20 fuel policy and the Philippine government's Biofuels Act.

Also in 2011, a demonstration fleet of "new energy vehicles," including Ford's battery electric, hybrid and plug-in hybrid technologies, was brought to China for the first time. Unlike some other automakers, Ford is developing all of these technologies across entire vehicle platforms, rather than individual models, with the different technologies suited to different consumer needs.

In the APA region, Ford monitors greenhouse gas emissions in our plants in China, Taiwan and the Philippines, and was 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 technology into the manufacturing plants, such as the "3-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 from the drying process, reduces CO_2 emissions and cuts the amount of waste chemicals produced. Changan Ford Mazda Automotive's Nanjing plant used this and other initiatives to reduce the carbon footprint of each unit produced by a massive 66 percent in just one year. Similarly, at Ford India's Chennai plant the amount of volatile organic compounds involved in the paint process has dropped from 45 grams per meter (gpm) to 35 gpm since the introduction of this technology, while switching from diesel to propane as fuel for the ovens that dry the painted cars also helped cut CO_2 emissions per unit by half. The new plants being built in the region are designed to use the latest energy-saving technologies from the day they come online, while older facilities are being upgraded.

By taking the simple step of turning off the motors while robots are idle, the body shop at Ford India's Chennai plant has reduced CO_2 emissions by 28,300 kg per year, for an annual saving of $6,200. The move led to the body shop winning the "Excellence Award for Innovation and Creative

Use of Automation" at last year's Automotive Manufacturer's Expo.

By working with specialist waste company Geocycle, Ford Australia is aiming to halve the amount of paint sludge disposed of in landfills by turning it in to an alternative fuel for cement manufacturing. Around 10 tons of the sludge, a by-product from the painting process, will be sent to the Geocycle facility in Melbourne each month. The company uses a "mega blender" to separate organic waste from metal and turn it into fuel. Ford Australia's Geelong Iron Casting Plant also provides used foundry sand, which would otherwise be deposited in a landfill, to the cement industry.

For a discussion of our global climate change impact and commitments, please see the Climate Change and the Environment section.

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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.

In the APA region, Ford India achieved a 45 percent year-on-year reduction in water usage per vehicle in 2011 through a range of water-conservation initiatives. New facilities in China are using advanced ultra-filtration water treatment technologies that enable improved treatment and reuse of the wastewater in the facility. These technologies also significantly reduce the use of chemicals, the generation of solid waste, the use of water and water discharge volumes. Read more about our water investments in Chennai, India, in the zero water discharge case study.

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're investing in community water stewardship projects in India, with plans to make similar investments in China, South Africa and elsewhere. One area where we are focusing is schools. Ford India, for example, helped refurbish two schools in villages near its Maraimalai Nagar plant, a suburb of the southern city of Chennai. The refurbishment included new sanitation facilities and drinking water fountains.

We are committed to mobilizing opportunities for communities in the developing world through clean water. We have joined the Global Water Challenge (GWC), a coalition of leading organizations committed to achieving universal access to safe drinking water, sanitation and hygiene. Through the GWC, Ford and others are funding water and sanitation programs in Africa. The GWC is also launching a "Women for Water" campaign to address critical water needs. In the developing world, the burden of collecting water falls primarily upon women and girls, who often must spend several hours a day carrying water.

For a discussion of our global commitment to water issues, please see the Water section.

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- Case Study: Zero Water Discharge
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Vehicle Safety

Ford remains a global leader in vehicle safety. As a leader in safety technology, we deploy advanced active and passive safety technology and materials in our full product lineup.

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 and Europe. The Ford Focus and the Ford Mondeo also have received five-star ratings in C-NCAP testing in China.

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 (FDSFL), Ford's driver education program, demonstrates our commitment to help new drivers to improve their motoring skills. In our Asia Pacific and Africa region, the program is aimed at first-time drivers of all ages. FDSFL is in its fifth year training newly licensed drivers in Asia and Africa, with programs in China, India, Taiwan, South Africa, Thailand, Vietnam, the Philippines and Indonesia. FDSFL programs are tailored in each of these markets to reflect the local driving environment and road conditions. So far, 50,000 people have participated in the program across Asia and Africa, with another 12,000 expected in 2012.

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

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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 $75 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 capability at individual supplier facilities by requiring sustainability management and conducting supplier training, assessments and remediation
- Engaging strategic production suppliers to align approaches to a range of sustainability issues
- Collaborating within the automotive industry to develop common approaches to sustainability issues

In 2011, the Automotive Industry Action Group (AIAG) jointly sponsored with participating OEMs supplier training sessions held in Brazil, India, Mexico and Turkey. A total of 387 suppliers attended these sessions; 111 of those were Ford suppliers, and may also have been a supplier to other participating automotive manufacturers. This brings the global total for trained Ford suppliers to 1,766. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with AIAG and other automakers.) The industry total for the AIAG training sessions across five countries (Brazil, China, India, Mexico and Turkey) now exceeds 1,650 suppliers trained. In 2012, we plan to conduct additional supplier training sessions in conjunction with the AIAG in China, Mexico, Brazil, India, Turkey and Thailand. See detail on the status of our working conditions assessment in the supply chain.

For a discussion of our global commitment to supply chain sustainability, please see the Supply Chain section.

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- Working Conditions Assessment Status Data

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People

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. Our employees are also critical in our efforts to contribute to our communities.

Through initiatives like the Global Week of Caring, the annual Conservation and Environmental Grants China (CEGC) awards, and the Ford Driving Skills for Life (FDSFL) program, which teaches drivers about fuel efficiency as well as safety, Ford has made a positive impact on communities and environmental issues throughout the APA region.

Since Ford launched the CEGC program in 2000, for example, we have awarded more than $1.9 million (RMB12.6 million) in grants to hundreds of grassroots organizations and individuals to support environmental projects throughout China. Winners in 2011 included a photographer who has documented Beijing's growing landfill sites and a project to protect endangered fish in the Yangtze River.

Explore a full list of our Global Week of Caring and other volunteerism efforts in the APA region.

For a discussion of our global commitment to our stakeholders please see the People section.

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- Investing in Communities
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Ford of Europe

Ford of Europe is responsible for producing, selling and servicing Ford brand vehicles in 51 individual markets and employs approximately 47,000 people.

In addition to Ford Motor Credit Company, Ford of Europe operations include the Ford Customer Service Division and 22 manufacturing facilities, including joint ventures. The first Ford cars were shipped to Europe in 1903 – the same year Ford Motor Company was founded. European production started in 1911.

2011 Performance Highlights

- Ford launched the all-new 1.0L EcoBoost® engine in the Ford Focus, making this vehicle Ford's most fuel-efficient gasoline car ever, delivering 4.8L/100km and with CO_2 emissions of 109 g/km.
- We also launched the first all-electric vehicle in Europe, the Transit Connect Electric.
- The European New Car Assessment Program (EuroNCAP), Europe's leading authority on auto safety, named the Ford Focus the "Best in Class" small family car. In addition, EuroNCAP gave the all-new Ford Ranger the maximum five-star rating – the first-ever pick-up truck to achieve this rating. The new Ranger also achieved the highest rating of any vehicle ever tested by EuroNCAP for pedestrian protection.
- During 2011, 800 Ford employees each contributed 16 hours of their time (paid for by Ford) to local community projects, totaling 12,800 hours.

Awards

- The new Ford Focus became the first-ever car to receive four EuroNCAP Advanced Rewards for the systems Active City Stop, Lane Keeping Aid, Driver Alert and Forward Alert.
- The Ford Mondeo was awarded the best family car and best estate car by the U.K.'s most popular car buyer's guide.

Our global vision emerges from a deep understanding of what drives people in local markets.

47,000

people employed in Europe[1]

1.6 million

vehicles sold in Europe in 2011

1. As of year-end 2011. Does not include Ford Motor Credit employees.

Stephen Odell

Chairman and CEO
Ford of Europe

FORD OF EUROPE

Welcome

At Ford of Europe, we continue to make great progress toward our sustainability commitments – including those relating to both our vehicles and our manufacturing locations. We also continue to actively engage with our communities.

While the European financial climate remains extremely difficult, it is important that we continue to move forward with our holistic approach to sustainability. We understand that providing a strong lineup of sustainable vehicles, continuously improving our manufacturing processes and further strengthening relationships with our employees and communities is the right thing to do. Addressing this broad array of sustainability issues is the basis for future business success.

Earlier this year, we launched our most fuel-efficient gasoline-engine car to date – the Ford Focus with the 1.0L EcoBoost® engine – plus our most fuel-efficient car ever, the Ford Fiesta ECOnetic Technology with a 1.6L Duratorq TDCi diesel. Both cars herald significant improvements in carbon dioxide (CO_2) emission levels, establishing a standard for future models.

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. By 2013, two-thirds of our new cars in Europe will wear the ECOnetic Technology badge. Among them will be the electrified vehicles we will introduce from 2012 onward, including the Focus Electric launching later this year.

In early 2012, we created new sustainable manufacturing strategies for water use, waste and emissions in Ford of Europe. These strategies include ambitious targets such as reducing manufacturing water use by 30 percent and decreasing manufacturing waste to landfill by 70 percent on a per vehicle basis during the next five years.

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 developments, which benefits both our employees and other community members.

Sustainability is a crucial part of our business. Our exciting selection of technologically advanced, fuel-efficient vehicles, together with the sustainability measures we are implementing in our facilities, give us what I believe is a competitive advantage and will help to ensure our long-term business success in Europe.

Stephen Odell
Chairman and CEO
Ford of Europe

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Financial Health

Ford experienced strong sales and growth in many of our regional markets in 2011.

For a discussion of our global economic impact and financial health please see the Financial Health section.

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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.

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 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 2010, we had already reached an average CO_2 emission level below 137 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 the European legislation for 2012.

EcoBoost Engines and ECOnetic Technology

This year saw the introduction of the new 1.0L EcoBoost® gasoline engine into Ford's lineup, joining the 1.6L and 2.0L EcoBoost engines.

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. The 1.0L EcoBoost will later be offered in the Ford C-MAX and the all-new Ford B-MAX, where it is also set to achieve best-in-class CO_2 levels.

Ford also continues to expand the availability of our low-CO_2 ECOnetic Technology. In 2012, for example, we launched Ford's most fuel-efficient passenger car ever – the Ford Fiesta ECOnetic Technology, offering fuel economy of 3.3L/100km and with just 87 g/km of CO_2. This model includes a range of Ford ECOnetic 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 Ford Fiesta ECOnetic

The Fiesta ECOnetic Technology will be joined later in 2012 by the Focus ECOnetic Technology, which will emit just 88 g/km of CO . To reach this class-leading level, the Focus ECOnetic

"Initiatives such as the UKLCVD and cologne-mobil are a revolution for both the utility and automotive industries. Collaborating across sectors is essential to ensure customer focused products that provide the right value along with the readiness of the infrastructure. We need to work and learn together and Ford is very pleased to be a part of these important trials."

Stephen Odell, Chairman and CEO, Ford of Europe

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Technology employs a 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.

Half of all Ford cars sold in Europe by the end of 2012 – and two-thirds by the end of 2013 – will carry the ECOnetic Technology badge, showing that they are leaders or among the very best in terms of fuel economy in their respective segments.

Electrification

In 2011, Ford launched its first all-electric vehicle in Europe, the Transit Connect Electric small commercial vehicle. The Transit Connect Electric, assembled by Azure Dynamics, included state-of-the-art lithium ion battery packs and achieved a driving range of up to 130km (80 miles) and a top speed of 120 km/h (75 mph).

At the end of 2012, Ford will add to our electrified lineup in Europe by introducing the Ford Focus Electric, the Company's first zero-emissions all-electric passenger car.

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 RheinEnergie AG, the city of Cologne and the University of Duisburg-Essen on the colognE-mobil program, using a fleet of 25 electric vehicles to conduct road testing. This program is part of a much larger research effort in several German cities that is partly funded by the German government and involves multiple automakers, utility companies, universities and technology partners.

One of the colognE-mobil fleet

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 its 5-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 5 years.

Ford's Cologne, Genk and Saarlouis plants have already achieved zero waste to landfill. The remaining five Ford-owned sites 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 their waste: paint sludge, municipal waste, grinding sludge and material filter waste. Our aim is to reduce average waste to landfill per vehicle from 5kg in 2011 to 1.5kg by 2016.

The 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. Ford's global target is to reduce water use per vehicle from 9.5m^3 to 3.5m^3 by 2015. Ford of Europe will reduce water use per vehicle from 3.5m^3 to 2.4m^3 between 2011 and 2016.

Later in 2012, Ford of Europe will also outline its strategy on energy use and purchasing.

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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Vehicle Safety

Ford remains a global leader in vehicle safety. We deploy advanced active and passive safety technology and materials in our full product lineup.

In 2012, EuroNCAP, Europe's leading authority on auto safety, named the Ford Focus the "Best in Class" small family car, in recognition of the vehicle's crash-test rating and advanced safety technology. The Focus received one of only five best-in-class accolades on the strength of its maximum five-star EuroNCAP rating as well as four EuroNCAP Advanced Rewards, an achievement unmatched by any other high-volume car. The Focus achieved an adult occupant score of 92 percent, a child occupant rating of 82 percent, a pedestrian score of 72 percent and safety-assist rating of 71 percent.

Euro NCAP Awards Recognize Ford Focus Safety Technologies

The Focus also received EuroNCAP Advanced rewards for the following four technologies:

- Driver Alert, designed to detect driver fatigue
- Forward Alert, which uses radar technology to scan the road ahead and alert the driver if a collision is likely
- Active City Stop, which helps to avoid or mitigate accidents at low speeds
- Lane Keeping Aid technologies, which warn drivers and assist drivers who unintentionally stray from their lane

EuroNCAP also made special mention of the new Ford Ranger, after it became the safest pick-up yet tested by the organization. The Ranger achieved the only five-star EuroNCAP rating ever awarded to a pick-up. It scored highly in all areas of the assessment, receiving particular credit for pedestrian protection.

In 2012, 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 pick-up on sale. The bestselling 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.

Related Links

This Report

- Vehicle Safety and Driver Assist Technologies

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  - Climate Change, Environment and Water
  - Vehicle Safety
  - Supply Chain
  - People
- Ford South America

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 $75 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 capability at individual supplier facilities by requiring sustainability management and conducting supplier training, assessments and remediation
- Engaging strategic production suppliers to align approaches to a range of sustainability issues
- Collaborating within the automotive industry to develop common approaches to sustainability issues

In 2011, the Automotive Industry Action Group (AIAG) jointly sponsored with participating OEMs supplier training sessions held in Brazil, India, Mexico and Turkey. A total of 387 suppliers attended these sessions; 111 of those were Ford suppliers, and may also have been a supplier to other participating automotive manufacturers. This brings the global total for trained Ford suppliers to 1,766. (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). The industry total for the AIAG training sessions across five countries (Brazil, China, India, Mexico and Turkey) now exceeds 1,650 suppliers trained. In 2012, we plan to conduct additional supplier training sessions in conjunction with the AIAG in China, Mexico, Brazil, India, Turkey and Thailand.

For a discussion of our global commitment to supply chain sustainability please see the Supply Chain section.

Related Links

This Report

- Supply Chain

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FORD OF EUROPE

People

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. Our employees are also critical in our efforts to contribute to our communities. Ford is dedicated to contributing to society and being actively involved in the communities at all of our sites globally. In Europe, Ford remains true to this corporate citizenship mindset and is proud of its 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. Since then, approximately 9,200 Ford employees have volunteered through this program, working on some 1,150 projects and dedicating more than 150,000 working hours. In 2011 alone, we supported approximately 120 volunteering and community projects through this program. Specifically, 800 employees each contributed 16 hours of their time, funded by Ford, totaling 12,800 hours. We also provide five Ford Transit vans to support 45 additional projects. The vans were driven a total of 60,000km, which equates to 631 (vehicle) days on the road.

Also in 2011, Ford of Europe volunteers went out into the community as part of the European Year of Volunteering, as well as the Ford Global Week of Caring. In the U.K., for example, Bridgend Engine Plant employees in South Wales walked 22 miles to raise money for Macmillan Cancer Support, a local charity. Sixteen Ford Product Development volunteers from the Dunton Technical Centre worked at the Basildon Disabled Sports Club, trimming hedges, cutting grass and clearing gardens. Ford volunteers in Scotland participated in a bike ride to fight breast cancer. In Spain, Ford volunteers repaired and painted the walls of a center for the mentally challenged and helped to preserve native plant species in a national park. Ford Genk volunteers restored trails and footpaths to make them accessible for wheelchairs. And Ford Cologne volunteers arranged a volunteering conference and supported the Red Cross Volunteering Congress, among many other activities.

Explore a full list of our Global Week of Caring and other volunteerism efforts in Ford of Europe.

For a discussion of our global commitment to our stakeholders please see the People section.

Related Links

This Report

- Investing in Communities
- People

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Ford South America

Ford is the third-largest automaker in South America, where our principal markets include Brazil and Argentina.

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.

2011 Performance Highlights

- Ford announced an investment of R$800 million to produce a new global vehicle in Sao Bernardo do Campo, Brazil.
- We also announced an R$500 million investment in our engine and transmission plant in Taubaté, Brazil for continued expansion of production capacity.
- Our New Cargo Euro 5 line of trucks will begin production this year. These trucks will have more power and better fuel economy than the Euro 3 line, even as they emit up to 80 percent fewer nitrous oxide emissions.
- The Ford-sponsored Odontomóvel – a mobile dental office that travels around Brazil providing free dental care to truck drivers and the community – celebrated the important milestone of 40,000 visits to truck drivers.

Awards

- Ford Brazil was named the most innovative company in information technology in the automotive and auto parts sector in "The 100+ Innovative in IT Use" ranking done by *InformationWeek Brasil* magazine.
- Ford was once again named by Argentine consumers as the #1 auto brand, according to *Clarin*, Argentina's top newspaper, in its Automotive Brands Ranking.
- For the seventh-consecutive year, Argentine consumers elected Ford as the most trusted automobile brand in an Ipsos Media poll. With this recognition, *Selecciones* magazine honored Ford with its "Trusted Brand" award. *Selecciones* is a Readers' Digest publication.
- *Parabrisas* magazine, one of the most well-regarded publications in Argentina, named Ford Argentina "2011 Auto Company of the Year."
- Argentine auto industry journalists elected the Ford Fiesta Kinetic Design as the "2011 Car of the Year" in the Mercosur and México category.
- *Auto Test*, a reputable auto journal, also elected the Fiesta Kinetic Design as the "2011 Best Mercosur Car."
- The Brazilian Association of Direct Marketing awarded Ford Brazil with the ABEMD Award for customer service for the third-consecutive year. Ford Brazil's customer service function has distinguished itself in recent years with 18 national and international awards, given by a variety of different organizations and publications.
- Once again, Ford Argentina was selected as one of Argentina's best places to work by *Apertura Magazine*, one of the country's most prestigious business magazines. The 2011 ranking shows Ford as one of the top five best places to work among companies with more than 1,000 employees. Ford also leads the auto industry ranking.
- The Ford Fiesta Kinetic Design was named as the 2011 Gold Safety Car

Our global vision emerges from a deep understanding of what drives people in local markets.

16,000

people employed in South America[1]

506,000

vehicles sold in South America in 2011

among all the categories awarded by the Center for Experimentation and Road Safety in Argentina.

1. As of year-end 2011. Does not include Ford Motor Credit employees.

Marcos de Oliveira

President
Ford Brazil and Mercosur

FORD SOUTH AMERICA

Welcome

At Ford, sustainability is at the heart of our business. Environmental protection has long been one of our priorities, and we also aim to improve the quality of life and wellbeing of the communities in which we operate.

Our commitment to sustainability is evidenced today with the development of an all-new generation of products to be launched in Brazil over the next three years. These products, which are built on global platforms, prioritize improved fuel economy and reduced greenhouse gas emissions and offer an array of advanced technologies and safety options.

For example, our New Cargo Euro 5 line will begin production this year. These trucks will have more power and better fuel economy than the EURO 3 line, even as they emit up to 80 percent fewer nitrous oxide emissions. Our most recent launch in the Brazilian market, the New Ford Fiesta, is another example of our sustainability evolution. It is equipped with the Taubaté-produced, flex-fuel, Sigma engine, which optimizes fuel economy and reduces emissions by running on our environmentally friendly Brazilian ethanol.

Beyond these initiatives, our teams continue to search for new solutions to use recycled materials and to combat wastefulness in production processes by using water and energy sensibly, as well as to create innovative processes to increase work efficiencies.

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.

Marcos de Oliveira
President
Ford Brazil and Mercosur

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FORD SOUTH AMERICA

Financial Health

Ford experienced strong sales and growth in many of our regional markets in 2011. In South America we sold 506,000 units, a 3 percent increase from 2010. The increase in this rapidly growing market represents a significant achievement for our Company.

Ford's 2011 market share for our South America region was 9.3 percent, down 0.5 percentage points from 2010. Brazil and Argentina are our highest-volume South American markets, and our market shares for these two countries are shown in the table below.

South American Market Share

Major Markets	2011 Combined Car and Truck Market Share	Percentage Points Better/(Worse) than 2010
Brazil	9.8%	(0.6)%
Argentina	12.9%	0.5%
Total South America	9.3%	(0.5)%

Going forward, we are making our largest-ever five-year investment in our Brazil operations, committing R$4.5 billion from 2011 to 2015 to accelerate the delivery of more fuel-efficient, high-quality vehicles. We also announced an investment of R$800 million to produce a new global vehicle in Sao Bernardo do Campo, Brazil. And, we announced an R$500 million investment in our engine and transmission plant in Taubaté, Brazil for continued expansion of production capacity. Our Pacheco plant celebrated its 50th anniversary in 2011 and the production of 2.5 million units, and at the same time announced the investment of a new engine plant to equip the all-new Ford Ranger in 2012.

Ford also made several exciting product announcements in South America in 2011:

- Ford Ka, the sales leader among compact three-door hatches in Brazil, recently reached a milestone of 750,000 units manufactured in that country.
- Since February 2011, Brazilian consumers have been able to purchase the 2011 Ford Ranger Sport version, which has undergone a design, convenience and comfort update.
- In March 2011, 400 distributors and 150 journalists from Brazil, Argentina and Chile met at the Cumbuco beach in Ceará, Brazil, for the launch of our new Cargo Euro 5 truck line. The 2012 Cargo Euro 5 lineup will include 11 models with a regular cab and five with the sleeper cab option. These completely new models are unmatched in design, quality, comfort, performance, functionality, versatility and competitive prices.
- Ford Venezuela launched the all-new Ford Explorer; they are the only Ford assembly operation outside of the U.S. to produce this vehicle. They also launched the Ford F-250 Super Cab and introduced a Ford F-350 that runs on natural gas (CNG), with unique engineering and in full compliance with government regulations.
- Ford launched its all-new Ford Fiesta in Argentina.
- At the Buenos Aires Autoshow, Ford showed the all-new Ford Ranger, our first global pick-up.

By 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, compact pickups and commercial vans.

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.

Related Links

This Report

- Financial Health
- Mobility Solutions

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.

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 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. Ford South America has committed to improving fuel economy across our product lineup.

Our New Cargo Euro 5 line of trucks will have more power and better fuel economy than the Euro 3 line, even as they emit up to 80 percent fewer nitrous oxide emissions. Our newest launch in the Brazilian market, the new Ford Fiesta, is equipped with the Taubaté-produced Sigma engine with our advanced flex-fuel technology. This technology allows drivers to optimize fuel economy and reduce emissions by using environmentally friendly Brazilian ethanol. During the Buenos Aires Autoshow, Ford also launched the new Ford Mondeo with an Ecoboost® engine, which represents the arrival of green technologies to Argentina.

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 dashboard 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. Absolute GHG emissions went up in 2010 as a result of production increases. However, our GHG emissions per unit of production decreased by 1 percent due to process efficiency improvements.

Related Links

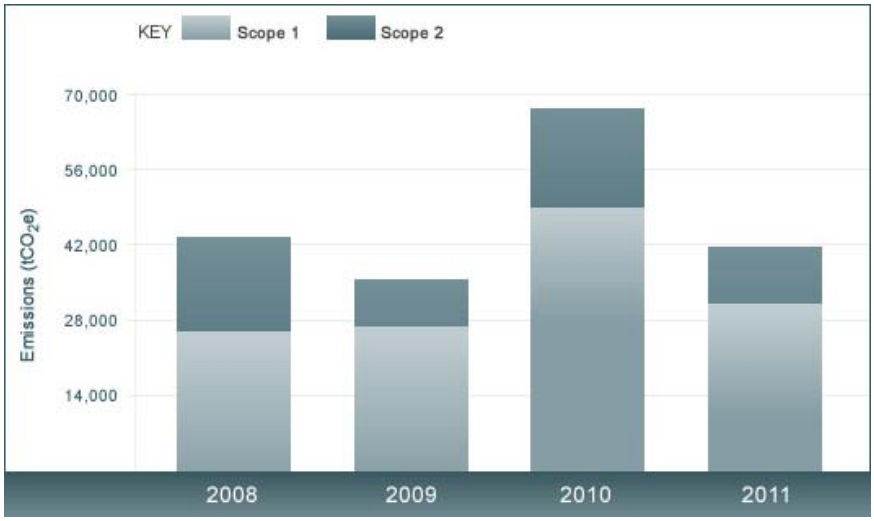
This Report

- Climate Change and the Environment

Historical Emissions by Scope

Chart | Table

Chart



Table

Ano	Emissões (tCO_2e)	
	Escopo 1	Escopo 2
2008	25.925,00	17.392,00
2009	26.826,00	8.758,00
2010	48.834,23	18.620,00

Ford Argentina participated in BIO Plan, a program sponsored by the Sustainable Development Organization of the Province of Buenos Aires that collects used vegetable cooking oil and transforms it into a biofuel similar to kerosene. Through this program, we are now recycling the cooking oil from the Pacheco plant's cafeteria.

Finally, Ford employees in Brazil also celebrated World Environment Week, as well as the "Day of the Tree," which marks the arrival of spring. Employees at the Camacari, Sao 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 and commitments, please see the Climate Change and the Environment section.

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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 are also 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. And we're investing in community water stewardship projects globally.

For example, we are committed to mobilizing opportunities for communities in the developing world through clean water. We have joined the Global Water Challenge (GWC), a coalition of leading organizations committed to achieving universal access to safe drinking water, sanitation and hygiene. Through the GWC, Ford and others are funding water and sanitation programs in Central America. The GWC is also launching a "Women for Water" campaign to address critical water needs, since the burden of collecting water in the developing world falls primarily upon women and girls.

During World Water Day on March 22, 2011, Ford organized several events. In São Bernardo and Taubaté, for example, we hosted lectures in partnership with São Paulo Water Agency. In Camaçari, we presented an exposition of industrial and sanitary wastewater treatment plants. And in Troller, we hosted lectures on the management of water resources in the Brazilian state of Ceara.

For a discussion of our global commitment to water issues, please see the Water section.

Related Links

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- Water

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FORD SOUTH AMERICA

Vehicle Safety

Vehicle safety is a critical part of our aim to Go Further, and we work to build in safety from the very beginning of each product development process. Indeed, safety is one of four principles that guide our every design and engineering effort.

Ford remains a global leader in vehicle safety. The Ford Fiesta Kinetic Design was named as the 2011 Gold Safety Car among all the categories awarded by the Center for Experimentation and Road Safety (CESVI) in Argentina. Previously, the Fiesta Kinetic Design was also named as the safest car in the B-segment category. CESVI, a member of the Research Council for Automobile Repairs, is a respected organization dedicated to vehicle and roadway safety evaluation and research.

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.

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

Related Links

This Report

- Vehicle Safety and Driver Assist Technologies

External Websites

- Global NCAP
- Latin NCAO

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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. Shared commitment helps us to avoid risks to our operations and reputation that can arise due to substandard practices in our supply chain. (See, for example, the Brazilian charcoal case study.)

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 $75 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 capability at individual supplier facilities by encouraging sustainability management and conducting supplier training, assessments and remediation
- Engaging strategic production suppliers to align approaches to a range of sustainability issues
- Collaborating within the automotive industry to develop common approaches to sustainability issues

In 2011, the Automotive Industry Action Group (AIAG) jointly sponsored with participating OEMs supplier training sessions held in Brazil, India, Mexico and Turkey. A total of 387 suppliers attended these sessions; 111 of those were Ford suppliers, and may also have been a supplier to other participating automotive manufacturers. This brings the global total for trained Ford suppliers to 1,766. (This figure includes dedicated Ford supplier training sessions conducted with the AIAG as well as industry training sessions in which Ford participated along with AIAG and other automakers). The industry total for the AIAG training sessions across five countries (Brazil, China, India, Mexico and Turkey) now exceeds 1,650 suppliers trained. In 2012, we plan to conduct additional supplier training sessions in conjunction with the AIAG in China, Mexico, Brazil, India, Turkey and Thailand. Detail on the status of our working conditions assessment in the supply chain for the Americas can be found in the Supply Chain data.

For a discussion of our global commitment to supply chain sustainability, please see the Supply Chain section.

Related Links

This Report

- Charcoal and Pig Iron Production in Brazil
- Supply Chain
- Working Conditions Assessment Status Data

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FORD SOUTH AMERICA

People

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. Our employees are also critical in our efforts to contribute to our communities and the environment.

Through initiatives like the Global Week of Caring, the annual Conservation and Environmental Grants China (CEGC) awards, and the Henry Ford Conservation Awards, Ford has made a positive impact on communities and environmental issues throughout South America.

Global Week of Caring

During the 2011 Global Week of Caring, the number of employees volunteering their time in Argentina increased by around 70 percent compared to 2010. Volunteers participated in activities with several nonprofit organizations during this week. For example, they donated blood, organized and packaged clothes and food that they also donated, and helped in the building of three houses. Explore a full list of our Global Week of Caring and other volunteerism efforts in South America in our map of community investment.

In 2011, Ford employee initiatives also included the following:

- In Brazil, we provided environmental awareness and ISO 14001 training to our employees, as well as courses in infant nutrition, and computer science
- In Brazil, the Citizenship Committee of Ford's Taubaté plant just re-inaugurated its Computer School and is offering free computer courses for Ford employees, their families and the entire community
- The SOS Southeast campaign – which is sponsored by Ford Brazil employees to help those made homeless by the rains in the mountainous region of Rio de Janeiro as well as in Sao Paulo – donated about 34.5 tons of food, toiletries, cleaning supplies and clothes, in addition to financial donations
- More than 400 Ford Venezuela employees volunteered for World Beach Day, collecting and disposing of more than 500 kilograms of trash
- Ford Argentina and its dealer network inaugurated a school in Tucuman, the 17th since the start of the Educación para un Nuevo Mañana program in 2002.

For a discussion of our global commitment to our stakeholders please see the People section.

Related Links

This Report

- Investing in Communities
- People

Contact

Preparing this report is a valuable opportunity for us to assess and improve upon our economic, environmental and social progress and performance.

To continue to do so, we need your feedback.

Write:
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For customer service issues or complaints please call 800-392-3673 in the US, 1-800-565-3673 (FORD) in Canada or go to www.customersaskford.com.

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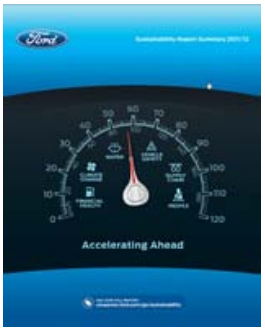

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Summary Report

Ford's Sustainability Report is summarized in an 8-page downloadable document:

Accelerating Ahead: Sustainability Report Summary 2011/12
(pdf, 4.98Mb)

Supplementary Downloads

Brand and Country-Level Reports

Brazil GHG Accounting and Reporting Program – 2008 Report
(English version, pdf, 619kb)
(Portguese version, pdf, 621kb)

Ford China – Summary Report
(pdf, 643kb)

Changan Ford Mazda Automobile Co., Ltd. – Chongqing, China – 2009 GHG Report
(pdf, 2Mb)

Changan Ford Mazda Automobile Co., Ltd. – Nanjing Assembly Plant – 2009 GHG Report
(pdf, 1.88Mb)

Changan Ford Mazda Engine Co., Ltd. – 2009 GHG Report
(pdf, 752kb)

Jiangling Motors Co., Ltd. – 2009 GHG Report
(pdf, 3.11Mb)

Past Reports

Ford Mexico Greenhouse Gas Report
(pdf, 460kb)

Ford Philippines 2007 Greenhouse Gas Report
(pdf, 316kb)

Changan Ford Mazda Automobile Co., Ltd – Chongqing, China – 2007 GHG Report
(pdf, 680kb)

Changan Ford Mazda Automobile Co., Ltd – Chongqing, China – 2008 GHG Report
(pdf, 980kb)

Changan Ford Mazda Automobile Co., Ltd – Nanjing Assembly Plant – 2008 GHG Report
(pdf, 664kb)

Changan Ford Mazda Engine Co., Ltd – 2008 GHG Report
(pdf, 612kb)

Jiangling Motors Co., Ltd – 2008 GHG Report
(pdf, 1.03Mb)

Ford Sustainability Report 2011/12 Feedback

Feedback from SAM research
(pdf, 68kb)

Ford Response to Carbon Disclosure Project
(pdf, 432kb)

Financial Reports

- Annual Report 2011
  (pdf, 4.5Mb)
- Form 10-K
  (pdf, 7.84Mb)
- Form 8-K
  (pdf, 48kb)
- Notice of 2012 Annual Meeting of Shareholders and Proxy Statement
  (pdf, 1.66Mb)

Human Rights

- Cuautitlan Human Rights Assessment
  (pdf, 52kb)
- Jiangling Motors Corporation (JMC) Human Rights Assessment
  (pdf, 64kb)
- Valencia Human Rights Assessment (July 28, 2010)
  (pdf, 64kb)
- Valencia Human Rights Assessment (June 24, 2009)
  (pdf, 40kb)
- Santa Rosa Human Rights Assessment
  (pdf, 64kb)
- Camacari Human Rights Assessment
  (pdf, 112kb)
- Ford Motor Company of Southern Africa Human Rights Assessment
  (pdf, 88kb)
- Vsevolozshk Human Rights Assessment
  (pdf, 88kb)
- Chicago Human Rights Assessment
  (pdf, 80kb)
- Hermosillo Human Rights Assessment
  (pdf, 152kb)
- Michigan Human Rights Assessment
  (pdf, 108kb)
- Broad Meadows Human Rights Assessment
  (pdf, 136kb)
- Lio Ho Human Rights Assessment
  (pdf, 104kb)
- Pacheco Human Rights Assessment
  (pdf, 1.46Mb)
- Changan Human Rights Assessment (June 10, 2009)
  (pdf, 56kb)
- Changan Human Rights Assessment (October 10, 2006)
  (pdf, 56kb)
- India Human Rights Assessment
  (pdf, 44kb)
- Otosan Human Rights Assessment
  (pdf, 64kb)
- Vietnam Human Rights Assessment
  (pdf, 76kb)
- Oakville Human Rights Assessment
  (pdf, 40kb)
- Craiova Human Rights Assessment
  (pdf, 60kb)
- Louisville Human Rights Assessment
  (pdf, 68kb)
- Pleukdang Human Rights Assessment
  (pdf, 80kb)
- Troeller Human Rights Assessment
  (pdf, 80kb)

São Bernardo Human Rights Assessment
(pdf, 76kb)

Code of Basic Working Conditions
(pdf, 56b)

Product Sustainability Index

Ford of Europe's Product Sustainability Index, OECD Workshop
(pdf, 260kb)

Product Sustainability Index Report, Ford S-MAX and Ford Galaxy
(pdf, 508kb)

Product Sustainability Index Fact Sheet, Ford Fiesta
(pdf, 168kb)

Product Sustainability Index Fact Sheet, Ford Kuga
(pdf, 128kb)

Product Sustainability Index Fact Sheet, Ford Mondeo
(pdf, 108kb)

Managing Sustainable Product Development
(pdf, 40kb)

Miscellaneous

Canada Toxics Reduction Act Public Summary Report
(pdf, 32kb)

Environmental Policy
(pdf, 20kb)

Ford Rouge Center Brochure
(pdf, 11.52Mb)

Technology and Innovation
(HTML format)

Climate Change Emissions and Stabilization, Sustainability Report 2006/07
(pdf, 120kb)

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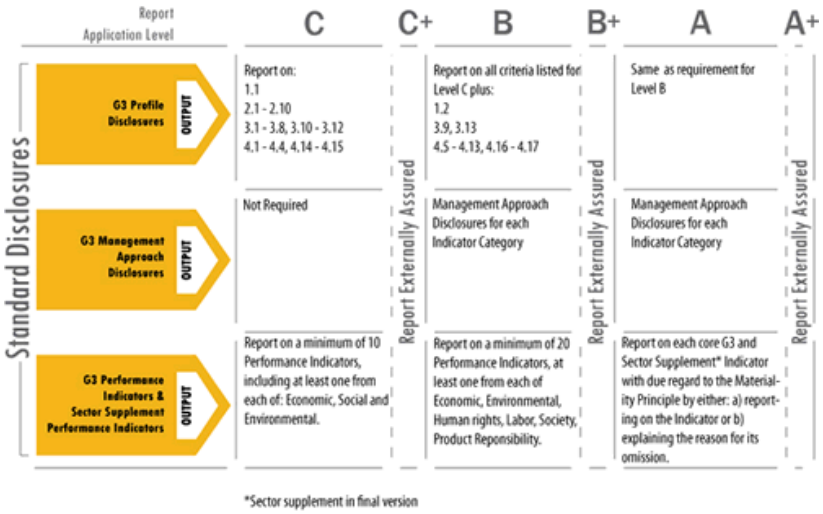
GRI Index

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. Message from Alan Mulally	
1.2	Description of key impacts, risks and opportunities.		Letter from William Clay Ford, Jr. Message from Alan Mulally Letter from Robert Brown Our Value Chain and Its Impacts Materiality Analysis Performance Summary Ford's Goals, Commitments and Status Sustainability Governance and Integration	

2. ORGANIZATIONAL PROFILE

Profile	Disclosure and Description	Status	Links	Notes
2.1	Name of the organization.			Please see 2011 Form 10-K page 2
2.2	Primary brands, products and/or services.			Please see 2011 Form 10-K page 7
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries and joint ventures.			Please see 2011 Form 10-K page 7
2.4	Location of organization's headquarters.			Please see 2011 Form 10-K page 2

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).		• Dealers	Please see 2011 Form 10-K pages 6–10. 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 Data • Employees • Current Financial Health	Information on our scale is reported on in our annual financial reporting, including our 10-K and Annual Report. Specifically, for information on quantity of products sold, please see 2011 Form 10-K page 3; for information on sales, revenue, and capitalization broken down by debt and equity, please see page 30.
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	Please see 2011 Form 10-K page 23–24 for a list of Ford facilities and page 29–30 for information on share capital structure and capital formation. Please see our Annual Report pages 7 and 56–57 for information on plant openings.
2.10	Awards received in the reporting period.		• 2011 Awards and Recognition • Diversity and Inclusion Awards • Ford Asia Pacific and Africa • Ford of Europe • 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.		• 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.		• 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.		• Performance Summary • Financial Health Data • Environment Data • Water Data • Vehicle Safety 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.		• Performance Summary • Financial Health Data • Environment Data • Water Data • Vehicle Safety 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).		• Performance Summary • Financial Health Data • Environment Data • Water Data • Vehicle Safety 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.		• Year in Review

GRI Content Index

Profile Disclosure and Description		Status	Links	Notes
3.12	Table identifying the location of the Standard Disclosures in the report.		• GRI Index	

Assurance

Profile Disclosure and 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 and 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.		• Corporate Governance – Board of Directors • Sustainability Governance and Integration • Governance and Management Structures	
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).		• Board of Directors	
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.		• Corporate Governance – Board of Directors • Stakeholder Engagement	
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).		• Sustainability Governance and Integration	
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.		• Corporate Governance – Board of Directors • Code of Business Conduct and Ethics (pdf, 34kb)	
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 • Stakeholder Engagement	
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.		• Policy Letters and Directives • Ethical Business Practices • Sustainability Governance and Integration	
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental and social performance, including		• Corporate Governance – Board of Directors • Stakeholder Engagement	

	relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct and principles.		
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.		• Sustainability Management • Climate Change Risks and Opportunities • Climate Change Policy and Partnerships • Collaborating with Utilities and Municipalities • Policy Letters and Directives • Water Strategy Approach • Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Building Supplier Capability through Localized Training and Collaboration • Conflict Minerals • Supply Chain Environmental Management • Collaborative Efforts • Public Policy Positions	
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.		• Climate Change Policy and Partnerships • Building Supplier Capability through Localized Training and Collaboration • Collaborative Efforts • Participation in the Policy-Making Process • Water Strategy Approach	

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.		• Stakeholder Engagement	
4.15	Basis for identification and selection of stakeholders with whom to engage.		• Stakeholder Engagement	
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.		• Stakeholder Engagement • Engaging with These Stakeholders • Employees • Customers • Dealers • Supply Chain • Communities	
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.		• Stakeholder Engagement • Engaging with These Stakeholders • Materiality Analysis	

Part II: Disclosures on Management Approach

ECONOMIC

Aspects	Status	Links	Notes
Economic performance		• Corporate Governance Policies • Ford's Goals, Commitments and Status • Financial Health	
Market presence		• Ford's Goals, Commitments and Status • Ford Future Competitiveness	
Indirect economic impacts		• Communities • Investing in Communities	

ENVIRONMENTAL

Aspects	Status	Links	Notes
Materials		• Ford's Goals, Commitments and Status • Sustainable Materials • Sustainability Governance and Integration • Sustainability Management	
Energy		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Sustainability Management	
Water		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Sustainability Management • Water Strategy Approach	
Biodiversity		• Sustainability Governance and Integration • Sustainability Management • Sustainable Land Use and Biodiversity	
Emissions, effluents and waste		• Ford's Goals, Commitments and Status • Non-CO_2, Facility-Related Emissions • Waste Management • Sustainability Management	
Products and services		• Ford's Goals, Commitments and Status • Product Development	
Compliance		• Sustainability Governance and Integration • Compliance	
Transport		• Sustainability Governance and Integration • Logistics	
Overall		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Sustainability Management	

SOCIAL: LABOR PRACTICES AND DECENT WORK

Aspects	Status	Links	Notes
Employment		• Sustainability Governance and Integration • Employees	
Labor/management relations		• Sustainability Governance and Integration • Employees	
Occupational health and safety		• Sustainability Governance and Integration • Ford's Goals, Commitments and Status • Workplace Health and Safety • Health and Safety Governance	
Training and education		• Sustainability Governance and Integration • _____	

		Workplace	
Diversity and equal opportunity		• Sustainability Governance and Integration • Diversity and Inclusion	

SOCIAL: HUMAN RIGHTS

Aspects	Status	Links	Notes
Investment and procurement practices		• Sustainability Governance and Integration • Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Sustainable Raw Materials • Setting Expectations for Our Suppliers • Ethical Business Practices	
Non-discrimination		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Supplier Diversity Development • Diversity and Inclusion • Ethical Business Practices • Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility • Commitment to Human Rights and the U.N. Global Compact	
Freedom of association and collective bargaining		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Employees • Ethical Business Practices • Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility • Commitment to Human Rights and the U.N. Global Compact	
Child labor		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Setting Expectations for Our Suppliers • Ethical Business Practices • Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility • Commitment to Human Rights and the U.N. Global Compact	
Forced and compulsory labor		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Setting Expectations for Our Suppliers • Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility • Commitment to Human Rights and the U.N. Global Compact	
Security practices		• Sustainability Governance and Integration • Ethical Business Practices	
Indigenous rights		• Sustainability Governance and Integration • Communities • Ethical Business Practices	

SOCIAL: SOCIETY

Aspects	Status	Links	Notes

Community		• Sustainability Governance and Integration • Communities • Engaging with Communities
Corruption		• Sustainability Governance and Integration • Ethical Business Practices
Public policy		• Sustainability Governance and Integration • Policy Letters and Directives
Anti-competitive behavior		• Sustainability Governance and Integration • Ethical Business Practices
Compliance		• Sustainability Governance and Integration • Ethical Business Practices

SOCIAL: PRODUCT RESPONSIBILITY

Aspects	Status	Links	Notes
Customer health and safety		• Ford's Goals, Commitments and Status • Sustainability Governance and Integration • How We Manage Vehicle Safety • Vehicle Safety Data	
Product and service labelling		• Sustainability Governance and Integration • Ethical Business Practices	
Marketing communications		• Sustainability Governance and Integration • Ethical Business Practices • Building Customer Awareness	
Customer privacy		• Sustainability Governance and Integration • Ethical Business Practices	
Compliance		• Sustainability Governance and Integration • Building Customer Awareness	

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 Data • People Data	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.		• Climate Change Risks and Opportunities	
EC3	Coverage of the organization's defined benefit plan obligations.			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.			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.			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.		• Engagement and Community Data • Investing in Communities	
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.		• Financial Health • Understanding Customer Needs • Supply Chain Profile	For a discussion of risk factors please see 2011 Form 10-K pages 17-22. When the decision is made to close a facility, we take an active role in returning the property to a productive use that will be environmentally responsible, return shareholder value and benefit the community. Ford wants to leave a positive legacy in the communities in which we have operated, and we are therefore committed to handling our environmental responsibilities and working with municipal leaders to ensure smooth and successful transitions to new uses. Our first step with any closed facility is to assess and address any possible environmental issues on the property. The goal of our environmental assessment is to understand the environmental condition of the site and the actions needed to ensure that future use of the site will not pose any risk to human health or the environment. If any environmental issues are discovered, the property is cleaned up to the standard appropriate for its future use, whether industrial, commercial or residential. We also undertake extensive communications with community leaders, citizens and real estate partners to understand the potential future uses for the property and the community's goals for the property. In some cases, Ford redevelops the property itself, but more often it seeks a well-qualified developer to buy and convert it. Some properties remain in industrial

				use. In other cases, the surrounding communities have changed since the plant opened, and new uses, such as retail, commercial or residential, are possible and desirable. Ford has a corporate responsibility to maximize returns to our shareholders in the disposition of our properties. However, we always work with the community to see the property redeveloped into a productive and beneficial use.

ENVIRONMENTAL

Materials

Performance Indicator and Description		Status	Links	Notes
EN1	Materials used by weight or volume.		• Sustainable Materials	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	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.		• Operational Energy Use and CO_2 Emissions Data	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.		• Operational Energy Use and CO_2 Emissions Data	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.		• Operational Energy Use and CO_2 Emissions Data	
EN6	Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives.		• Sustainable Technologies and Alternative Fuels Plan • Partnerships and Collaboration • Electrification: A Closer Look	
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.		• Operational Energy Use and CO_2 Emissions Data • Climate Change Progress and Performance	

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 Data	
EN10	Percentage and total volume of water recycled and reused.		• Water Data	

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	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.		• Sustainable Land Use and Biodiversity	
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.		• Operational Energy Use and CO_2 Emissions Data	
EN17	Other relevant indirect greenhouse gas emissions by weight.		• Fuel Economy and CO_2 Emissions Data	
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.		• Climate Change • Sustainable Technologies and Alternative Fuels Plan • Electrification: A Closer Look	
EN19	Emissions of ozone-depleting substances by weight.		• Emissions (VOC and Other) Data • Non-CO_2, Facility-Related Emissions	
EN20	NOx, SOx and other significant air emissions by type and weight.		• Tailpipe Emissions Data • Emissions (VOC and Other) Data	
EN21	Total water discharge by quality and destination.			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.		• Waste Data	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.			
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 • Sustainable Materials • End of Life • Improving Fuel Economy • Migration to Alternative Fuels and Powertrains	
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.		• Sustainable Materials • End of Life	

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.		Compliance	

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.		Logistics	

Overall

Performance Indicator and Description		Status	Links	Notes
EN30	Total environmental protection expenditures and investments by type.			Our established accounting methods allow us to track expenditures for items like environmental protection and controls, but do not include methods for estimating costs associated with indirect economic, environmental or social costs and benefits. For example, during the last five years, we took charges to our consolidated income for engineering, research and development we sponsored in the following amounts: We recorded $5.3 billion, $5.0 billion, and $4.7 billion of engineering, research, and development costs that we sponsored during 2011, 2010, and 2009, respectively. Engineering, research and development is focused on improving the performance (including fuel efficiency) of our products, and to develop new products.

SOCIAL: LABOR PRACTICES AND DECENT WORK

Employment

Performance Indicator and Description		Status	Links	Notes
LA1	Total workforce by employment type, employment contract and region.		Engagement and Community Data Global Operations	The number of employees by region can be found in Ford's Annual Report on Form 10-K.
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.			

Labor/Management Relations

Performance Indicator and Description		Status	Links	Notes
LA4	Percentage of employees covered by collective bargaining agreements.		Employees	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 non-management salaried employees of our subsidiaries outside the U.S. are also represented by unions.
LA5	Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.			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.		Workplace Health and Safety	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. Approximately 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.
LA7	Rates of injury, occupational diseases, lost days and absenteeism, and number of work-related fatalities by region.		• Workplace Safety Data • Our 2011 Safety Record	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 • Case Study: Ford and Type 1 Diabetes	
LA9	Health and safety topics covered in formal agreements with trade unions.		• 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	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	
LA12	Percentage of employees receiving regular performance and career development reviews.			

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 • Diversity and Inclusion • Engagement and Community Data	This indicator is partially not applicable. We report on the makeup of our Board of Directors and our U.S. workforce. However, definitions of diversity vary globally and data cannot be aggregated meaningfully outside the U.S.
LA14	Ratio of basic salary of men to women by employee category.		• Diversity and Inclusion • Engagement and Community Data	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.		• Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Engagement and Community Data	
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.		• Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Engagement and Community Data	
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 • Engagement and Community Data	

Non-Discrimination

Performance Indicator and Description		Status	Links	Notes
HR4	Total number of incidents of discrimination and actions taken.		• Diversity and Inclusion • Engagement and Community Data	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		• Engagement and Community Data	

	of association and collective bargaining may be at significant risk, and actions taken to support these rights.		• Assessing Suppliers • Commitment to Human Rights and the U.N. Global Compact

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.		• Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Engagement and Community Data • Assessing Suppliers • Commitment to Human Rights and the U.N. Global Compact	

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.		• Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Engagement and Community Data • Assessing Suppliers • Commitment to Human Rights and the U.N. Global Compact	

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.		• Communities	

Corruption

Performance Indicator and Description		Status	Links	Notes
SO2	Percentage and total number of business units analyzed for risks related to corruption.		• Ethical Business Practices	
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 Positions • Climate Change Policy and Partnerships • Policy Letters and Directives • Sustainability Governance and Integration	
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 25–27.

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 • Workplace Safety Data	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 25–27.

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.		• How We Manage Vehicle Safety • Accident Avoidance and Driver Assist Technologies • Occupant Protection Technologies	
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.			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 25–27.

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.		• Customer Satisfaction and Quality • Product, Quality and Service Data	

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	
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 25–27.

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.			

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, on pages 25–27.

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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 • Commitment to Human Rights and the U.N. Global Compact • Human Rights in the Supply Chain: Ford's Global Working Conditions Program	
2.	Businesses should make sure that they are not complicit in human rights abuses.	• Human Rights in the Supply Chain: Ford's Global Working Conditions Program • Working Conditions in Ford Plants • Sustainable Raw Materials	

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.	• Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility	
4.	Businesses should uphold the elimination of all forms of forced and compulsory labor.	• Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility	
5.	Businesses should uphold the effective abolition of child labor.	• Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility	
6.	Businesses should uphold the elimination of discrimination in respect of employment and occupation.	• Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility	

Environment

UNGC Principle		Report Links	Notes
7.	Businesses should support a precautionary approach to environmental challenges.		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.	• Environmental Management • Climate Change • Climate Change and the Environment • Greening Our Operations • Greening Our Products	
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	

Anti-Corruption

UNGC Principle		Report Links	Notes
10.	Businesses should work against corruption in all its forms, including extortion and bribery.	• Policy Letter No. 24: Code of Human Rights, Basic Working Conditions and Corporate Responsibility • Ethical Business Practices	

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Go Further

Sustainability 2011/12

Site Map

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
ACH	Automotive Components Holdings, LLC, a Ford-managed temporary business entity comprised of former Visteon Corp. plants and facilities in the United States and Mexico
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 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
Bio-ethanol	A gasoline alternative derived from plant material (e.g., corn, sugar cane, sugar beets)
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. This year, 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
Carbon Mitigation Initiative	A research partnership based at Princeton University and supported by BP and Ford
C car	Generic term for a midsize car (e.g., the size of a Ford Focus)
CCX	Chicago Climate Exchange, a greenhouse gas emissions-reduction and trading program for emission sources and projects in North America
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
CFMA	Changan Ford Mazda Automobile Co., Ltd., one of Ford's joint ventures in China
CNG	Compressed natural gas, a type of alternative fuel
CO_2	Carbon dioxide, a primary greenhouse gas
DfE	Design for Environment, a tool for bridging the gap between product development and environmental management
DfS	Design for Sustainability, a tool similar to DfE but broader in scope
DOE	U.S. Department of Energy

E85	A fuel blend of 85 percent bio-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
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 help to foster diversity and inclusion
ESI	Employee Satisfaction Index, eight questions on Ford's annual Pulse survey of employees
EU	European Union
Euro 4 and Euro 5	Europe's tailpipe emissions standards; the Euro 5 standard is currently being phased in
EV	Electrified vehicle, a generic term for any vehicle that is powered – at least in part – by an electric motor
FCV	Fuel cell vehicle, a vehicle that uses an onboard fuel cell to create electrical power through a chemical reaction based on hydrogen fuel
FDSFL	Ford Driving Skills for Life, Ford's 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
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) and water vapor
GMAP	Ford's Global Material Approval Process, a materials management process
GMIR	Ford's Global Material Integration and Reporting system, a materials tracking tool used by our engineers and suppliers
GMIR	Ford's Global Material Integration and Reporting system, a materials tracking tool used by our engineers and suppliers
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
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
LEAD	Ford's Leadership Education for Automotive Dealerships program
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 that is being 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 2012 model year vehicles might begin in June 2011 and end in May 2012, but could start as early as January 2, 2011, and end as late as December 2012. 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.
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
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 socket
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
RSC	Roll Stability Control®, Ford's electronic stability control system
SDGs	Safety Design Guidelines, Ford's stringent internal engineering design targets
SHARP audits	Ford's Safety and Health Assessment Review Process audits
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 Alternative Fuels Plan	Ford's product strategy, outlining the near-, mid- and long-term steps we are taking to develop and deploy vehicle and fuel technologies to implement our blueprint for sustainability
SUMURR	Sustainable Urban Mobility with Uncompromised Rural Reach, a pilot program recently 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 GQRS
Tier 1 Suppliers	Suppliers sourcing directly to our assembly plants
Tier 2 Suppliers	Suppliers not sourcing directly to our assembly plants
Tier 2 Emissions Standards	The U.S. federal program, starting with the 2004 model year, to control vehicle emissions standards
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 business 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
USCAP	U.S. Climate Action Partnership, a group of businesses and environmental organizations promoting national legislation to reduce greenhouse gas emissions
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
VEBA	Voluntary Employee Benefit Association trust, an independent trust designed to ensure health care coverage for current and future Ford employees
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

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