**Carbon Disclosure Project** 

# CDP 2011 Investor CDP 2011 Information Request Ford Motor Company

**Module: Introduction** 

**Page: Introduction** 

0.1

#### Introduction

Please give a general description and introduction to your organization

Ford Motor Company, a global automotive industry leader based in Dearborn, Mich., manufactures and distributes automobiles across six continents. With about 166,000 employees and about 70 plants worldwide, the company's automotive brands include Ford and Lincoln. The company provides financial services through Ford Motor Credit Company. For more information regarding Ford's products, please visit www.ford.com.

# 0.2

#### **Reporting Year**

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

## Enter Periods that will be disclosed

Fri 01 Jan 2010 - Fri 31 Dec 2010

# Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country

United States of America

# 0.4

0.3

#### **Currency selection**

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

# 0.5

Please select if you wish to complete a shorter information request

# 0.6

#### Modules

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire.

If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email respond@cdproject.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx.

# Module: Management [Investor]

#### Page: 1. Governance

#### 1.1

#### Where is the highest level of direct responsibility for climate change within your company?

Individual/Sub-set of the Board or other committee appointed by the Board

#### 1.1a

#### Please identify the position of the individual or name of the committee with this responsibility

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

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 Progress Review process chaired by our CEO, Allan Mulally. 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.

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.

#### Do you provide incentives for the management of climate change issues, including the attainment of targets?

# Yes

# 1.2a

# Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator				
All employees	Monetary reward	Integrated into the management's annual business review process but written in the language of the automotive industry.				
All employees	Recognition (non- monetary)	Integrated into the management's annual business review process but written in the language of the automotive industry.				

# **Further Information**

As an automotive manufacturer, we incorporate fuel economy and CO2 objectives into our corporate business performance metrics. When we achieve our metrics, the Company is successful, and that benefits all employees, as well as many other stakeholders. Please see more detailed discussion of this issue from Ford's perspective at: http://corporate.ford.com/microsites/sustainability-report-2010-11/issues-climate

#### Page: 2. Strategy

# 2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

# 2.1a

Please provide further details (see guidance)

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 Group Vice President of Sustainability, Environment and Safety Engineering has primary responsibility for sustainability issues and oversees the Sustainable Business Strategies, Environmental Policy, 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).

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 Group 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.

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, Business Plan Review and Compensation: 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. 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 help them 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 help us manage corporate-wide sustainability issues, 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 integrated sustainability-specific indicators into their overall scorecards.

Special Attention Review and Automotive Strategy Meetings: 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 2010, global energy trends, U.S. energy security, industry developments and Ford's electrification strategy.

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 have also asked 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.

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.

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 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.

#### 2.2

Is climate change integrated into your business strategy?

Yes

## 2.2a

#### Please describe the process and outcomes (see guidance)

Ford is committed to doing our share to prevent or reduce the potential for environmental, economic and social harm due to climate change through both short term actions and long term strategy.

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 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 (CO2) concentrations in the atmosphere at 450 ppm, the level generally accepted to 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 CO2 emissions by 30 percent by 2025 on a per-vehicle basis.

During 2010, we expanded the climate stabilization analysis that we had undertaken previously for the U.S. and Europe to the other regions in which we operate. This analysis defines the emission reductions needed to meet our stabilization commitment.

Our technology migration plan - embodied in our blueprint for sustainability - 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 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 recent and upcoming actions, we:

Reduced fleet-average CO2 emissions from our 2010 model year U.S. and European new vehicles by 10.5 percent and 8.1 percent, respectively, compared to the 2006 model year.

Reduced CO2 emissions from our global operations by 5.6 percent on a per-vehicle basis, compared to 2009.

Announced 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.

Offered four models in North America that provide 40 miles per gallon or better – compared to 2009, when our most fuel-efficient vehicle achieved 35 miles per gallon.

Offered 18 models in Europe that achieve a CO2 emission level of 130 grams per kilometer, and two that achieve less than 100 grams per kilometer.

Announced the development of a solar energy system – one of the largest in Michigan – that will help power the production of fuel-efficient small cars, including the Focus Electric, at our Michigan Assembly Plant.

#### **Our Policies**

Ford cannot 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 more fuel-efficient vehicles.

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 our obligations.

2.2b

Please explain why not

#### Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

# 2.3a

## Please explain (i) the engagement process and (ii) actions you are advocating

Ford has participated in the public discourse on 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 to support the prompt enactment of climate legislation.

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.

In 2009, the Obama Administration announced an agreement among the federal government, the state of California, the auto industry and other stakeholders in support of a single national program for motor vehicle fuel economy and greenhouse gas standards covering the 2012 to 2016 model years. Ford views this "One National Program" agreement as a positive step for all stakeholders toward our common goals of energy security and reduced greenhouse gas emissions. Ford is committed to working constructively with all stakeholders toward the implementation of workable and effective One National Program standards for 2017–2025. 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.

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.

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.

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) continued to pursue greenhouse gas emissions regulations for mobile and stationary sources using their authority under the Clean Air Act. EPA and the U.S. National Highway Transportation Safety Administration (NHTSA) finalized regulations for 2012–16 model year vehicles. And in 2011, California began the first year of their Low-Carbon Fuel Standard.

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.

#### Page: 3. Targets and Initiatives

3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

Intensity target

3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
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3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
	Scope 1+2	100%	30%	metric tonnes CO2e per unit of production	2010	1.01	2025	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 (CO2) emissions by 30 percent by 2025 on a per-vehicle basis. This CO2 goal, which is also based on our stabilization commitment, complements our longstanding facility energy use reduction targets.

3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comments
					Ford reduced its 2010 global energy consumption by 40 percent compared to 2000 and energy consumption per vehicle produced by 5.6 percent compared to 2009. In 2010, overall global energy consumption increased by 6.6 percent compared to 2009, due primarily to a 13 percent increase in production volume. In 2010, Ford improved energy efficiency in its North American operations by 14.4 percent indexed against our 2006 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 total facilities-related CO2 emissions by approximately 49 percent, or 4.8 million metric tons, from 2000 to 2010. During this same period, we reduced facilities-related CO2 emissions per vehicle by 30 percent. While total CO2 emissions increased by 13 percent from 2009 to 2010 due to increased production, per-vehicle emissions decreased by 5.6 percent. We set – and exceeded – a target to reduce our North American facility GHG emissions by 6 percent between 2000 and 2010 as

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comments
					part of our Chicago Climate Exchange commitment. This program ends 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.

# 3.1d

# Please provide details on your progress against this target made in the reporting year

10	% complete (time)	% complete (emissions)	Comment
			Ford reduced its 2010 global energy consumption by 40 percent compared to 2000 and energy consumption per vehicle produced by 5.6 percent compared to 2009. In 2010, overall global energy consumption increased by 6.6 percent compared to 2009, due primarily to a 13 percent increase in production volume. In 2010, Ford improved energy efficiency in its North American operations by 14.4 percent indexed against our 2006 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 total facilities-related CO2 emissions by approximately 49 percent, or 4.8 million metric tons, from 2000 to 2010. During this same period, we reduced facilities-related CO2 emissions per vehicle by 30 percent. While total CO2 emissions increased by 13 percent from 2009 to 2010 due to increased production, per-vehicle emissions decreased by 5.6 percent. 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 ends 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 explain (i) why not; and (ii) forecast how your emissions will change over the next five years

#### 3.2

#### Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

## 3.2a

#### Please provide details (see guidance)

To meet our climate change commitments, 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 are introducing a wide variety of new engine and transmission technologies, as well as electrical system improvements, weight reductions and aerodynamic improvements that will deliver significant fuel-economy benefits for millions of drivers in the near term. Between 2008 and 2013, we will introduce 60 new or significantly upgraded engines, transmissions and transaxles globally to help us improve fuel economy and reduce carbon dioxide (CO2) emissions across our global fleet.

We are continuing to implement the EcoBoost<sup>™</sup> engine, a key technology in our fuel-efficiency strategy, which uses gasoline turbocharged direct-injection technology. EcoBoost delivers 10 to 20 percent better fuel economy, 15 percent fewer CO2 emissions and superior driving performance compared to largerdisplacement engines. Because EcoBoost is affordable and can be applied to existing gasoline engines, we can implement it across our vehicle fleet, bringing fuelefficiency 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 the EcoBoost and our other near-, mid- and long-term fuel economy improvement technologies, please see our Sustainable Technologies and Alternative Fuels Plan.

In the U.S., we continue to improve the fuel economy of our new and refreshed vehicles. For example, the Ford Focus, Fusion and Mustang and Lincoln MKZ car vehicle lines, as well as the Ford F-series, Escape and Edge truck and crossover lines, all improved their fuel economy from the 2010 to the 2011 model years. As seen in the graphic below, Ford's 2011 model year U.S. vehicles rank better than the industry fuel economy average in six of 13 categories, worse in one and the same in six.

For the 2010 model year, our fleet CO2 emissions increased slightly by about 1 percent relative to the 2009 model year, but improved 11 percent compared to the 2006 model year. Preliminary data for the 2011 model year project that the Corporate Average Fuel Economy (CAFE) values for the car and truck fleets will be about the same as the car and truck fleet averages for the 2010 model year. On an overall fleet basis, preliminary estimates indicate a 2011 CAFE improvement of 2.9 percent compared to 2010.

The reason the overall fleet average can improve while the individually calculated car and truck fleet averages remain about the same is that there have been changes to the vehicles included in the car and truck categories. New 2011 model year fleet changes include small, front-wheel-drive SUVs moving to the car fleet and medium-duty passenger vehicles being added to the light-duty truck fleet. For the car fleet, the movement of the front-wheel-drive Escape, Mariner, Edge and MKX to the car fleet largely offsets the car fleet improvements that would otherwise be seen due to the introduction of the Fiesta. For the light-duty truck fleet, the movement of the front-wheel-drive Escape, Mariner, Edge and MKX to the car fleet largely offsets the truck fleet improvements that would be seen due to increased fuel efficiency of the new F-150 and Explorer. So although our overall fleet fuel economy continues an improving trend, moving the more fuel-efficient crossover vehicles from the truck to the car category reduces the average fuel efficiency of both categories.

In Europe, we have reduced the average CO2 emissions of 2010 model year vehicles by 8.1 percent compared to the 2006 model 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 range of low-CO2 vehicles – and the use of lightweight materials.

3.3

Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes

#### 3.3a

Please provide details in the table below

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: building services	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. During 2010, we began planning to expand this system to a global scale and provide consumption data down to the departmental level.			

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	Linked with production and other data sets, this greatly enhanced near-real-time information has the following objectives: Assist in driving improvements in operating and turndown performance by providing departmental detail Allow plant-to-plant departmental comparisons Assist in the identification of and verification of energy-reduction efforts Provide common energy data metrics Automate feeds to systems within Ford that require energy data Reduce time to generate and obtain energy and environmental reports Improve the accuracy of and compliance with carbon-reduction reporting Improve energy performance dashboards and communication optimization. Our Kansas City Assembly Plant will serve as a pilot site for this Global Departmental Level Metering (GDLM) effort.			
Energy efficiency: building services	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.			
Energy efficiency: building services	During 2010 and 2011, for example, we packaged 40 buildings in the Dearborn, Michigan, area into a performance contract to upgrade to more-efficient lighting. When complete, the project will reduce energy use by more than 18.2 million kilowatt-hours – enough to power 1,648 U.S. homes for a year. The project also will eliminate more than 11,000 metric tons of CO2 emissions and cut annual costs by more than \$1.3 million. The project involves switching out and retrofitting more than 50,000 light fixtures in buildings across southeast Michigan. In Ford World Headquarters alone, more than 6,000 fixtures will be replaced. Other project features include: Adding controls to optimize the use of daylighting Replacing incandescent exit signs with LED exit signs Controlling the lighting of unoccupied areas with occupancy sensors Replacing incandescent and halogen lamps with compact fluorescent and LED lamps Improved lighting quality, so that employees and visitors will enjoy better visual clarity and enhanced perceived brightness Reducing ongoing maintenance costs.	1300000		
Energy efficiency: processes	We are replicating Ford's state-of-the-art paint process that eliminates the need for a stand-alone primer application and curing oven system. This technology, called "Three-Wet," reduces CO2 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			

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	primer spray booth and oven, and the attendant energy costs required to run them. We piloted a full- production enamel line using the Three-Wet process at the Ohio Assembly Plant, which started production in March 2007. In 2009, Ford installed the Three-Wet paint process at the Chennai plant in India and the Craiova plant in Romania. In March 2010, Three-Wet vehicle production began at the Cuautitlán Assembly Plant in Mexico, and in January 2011 it was implemented at the Michigan Assembly plant in Wayne, Michigan, which is now producing the all-new Ford Focus. We are currently installing the process at the new Chongqing and Nanjing plants in China, the assembly plant for Ford of Thailand and the newly updated Louisville Assembly Plant in Kentucky. We are continuing to evaluate additional plants for Three-Wet conversion, as refurbishment actions are being planned in line with the corporate business plan.			
Energy efficiency: processes	In 2010, Ford continued the evaluation 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. This 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. Forty-seven of these new robotic washing machines are now in operation at Ford, and 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. We have also implemented robotic parts washing at our Craiova and Cologne engine plants, and are pursuing the use of this technology in China, India and Brazil.			
Other	We have also developed a system, called "fumes to fuel," that reduces the CO2 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, VOC emissions are super-concentrated approximately 2000:1. In this super-concentrated state, the VOCs themselves can be burned as fuel source, reducing the amount of natural gas necessary to destroy them. By reducing the need for natural gas, the fumes-to-fuel system has the potential to reduce CO2 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.			
Behavioral change	We are aggressively curtailing energy use during nonproduction periods			
Energy efficiency:	We are updating facility lighting systems by replacing inefficient high-intensity discharge fixtures with up-to-date fluorescent lights and control systems			

Activity type	Description of activity		Investment required (unit currency)	Payback period	
building services					
Energy efficiency: processes	Installing automated control systems on plant powerhouses and wastewater treatment equipment to increase energy and process efficiency.				

3.3b

#### What methods do you use to drive investment in emissions reduction activities?

# MethodCommentOtherFord continues to use energy performance contracting as a financing tool to upgrade and replace infrastructure at its plants, commercial buildings and<br/>research facilities. Through these contracts, Ford partners with suppliers to replace inefficient equipment, funding the capital investment over time<br/>through energy savings. Projects have been implemented to upgrade lighting systems, paint-booth process equipment and compressed air systems,<br/>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<br/>energy-efficiency upgrades. Since 2007, we have been using a utility metering and monitoring system to collect electricity and natural gas<br/>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<br/>improve decisions about nonproduction shutdowns and load shedding, which involves shutting down certain pre-arranged electric loads or devices<br/>when we reach an upper threshold of electric usage. During 2010, we began planning to expand this system to a global scale and provide<br/>consumption data down to the departmental level. Linked with production and other data sets, this greatly enhanced near-real-time information.

#### 3.3c

If you do not have any emissions reduction initiatives, please explain why not

#### **Further Information**

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 (CO2) emissions by 30 percent by 2025 on a per-vehicle basis. This CO2 goal, which is also based on our stabilization commitment, complements our longstanding facility energy use reduction targets.

GHG Reporting InitiativesWe were the first automaker to join 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. 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. and Canada.

We were the first, and remain the only, automaker participating in the Chicago Climate Exchange (CCX), North America's first GHG emissions-reduction and trading program.

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 U.S. Environmental Protection Agency (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. will be required to submit reports. Our proactive approach and early action on GHG reporting globally has prepared us for this new requirement.

The World Resources Institute GHG Protocol is planning to use Ford's China and South America GHG reports in their forthcoming training programs. Our participation in these reporting, emissions-reduction and trading schemes has played an important role in accelerating our facilities' GHG emissions reduction activities.

PerformanceFord reduced its 2010 global energy consumption by 40 percent compared to 2000 and energy consumption per vehicle produced by 5.6 percent compared to 2009. In 2010, overall global energy consumption increased by 6.6 percent compared to 2009, due primarily to a 13 percent increase in production volume. In 2010, Ford improved energy efficiency in its North American operations by 14.4 percent indexed against our 2006 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 total facilities-related CO2 emissions by approximately 49 percent, or 4.8 million metric tons, from 2000 to 2010. During this same period, we reduced facilities-related CO2 emissions per vehicle by 30 percent. While total CO2 emissions increased by 13 percent from 2009 to 2010 due to increased production, per-vehicle emissions decreased by 5.6 percent. 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 ends 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 environment data section for more detail.

The U.S. Environmental Protection Agency (EPA) again recognized Ford's energy-efficiency achievements 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 InitiativesFord has achieved these efficiency improvements and energy use reductions by using a variety of initiatives, as 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.

During 2010, we began planning to expand this system to a global scale and provide consumption data down to the departmental level. Linked with production and other data sets, this greatly enhanced near-real-time information has the following objectives:

Assist in driving improvements in operating and turndown performance by providing departmental detail

Allow plant-to-plant departmental comparisons

Assist in the identification of and verification of energy-reduction efforts

Provide common energy data metrics

Automate feeds to systems within Ford that require energy data

Reduce time to generate and obtain energy and environmental reports

Improve the accuracy of and compliance with carbon-reduction reporting

Improve energy performance dashboards and communication optimization.

Our Kansas City Assembly Plant will serve as a pilot site for this Global Departmental Level Metering (GDLM) effort.

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 40 buildings in the Dearborn, Michigan, area into a performance contract to upgrade to more-efficient lighting. When complete, the project will reduce energy use by more than 18.2 million kilowatt-hours – enough to power 1,648 U.S. homes for a year. The project also will eliminate more than 11,000 metric tons of CO2 emissions and cut annual costs by more than \$1.3 million. The project involves switching out and retrofitting more than 50,000 light fixtures in buildings across southeast Michigan. In Ford World Headquarters alone, more than 6,000 fixtures will be replaced. Other project features include:

Adding controls to optimize the use of daylighting

Replacing incandescent exit signs with LED exit signs

Controlling the lighting of unoccupied areas with occupancy sensors

Replacing incandescent and halogen lamps with compact fluorescent and LED lamps

Improved lighting quality, so that employees and visitors will enjoy better visual clarity and enhanced perceived brightness

Reducing ongoing maintenance costs.

In addition, we are replicating Ford's state-of-the-art paint process that eliminates the need for a stand-alone primer application and curing oven system. This technology, called "Three-Wet," reduces CO2 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.

We piloted a full-production enamel line using the Three-Wet process at the Ohio Assembly Plant, which started production in March 2007. In 2009, Ford installed the Three-Wet paint process at the Chennai plant in India and the Craiova plant in Romania. In March 2010, Three-Wet vehicle production began at the Cuautitlán Assembly Plant in Mexico, and in January 2011 it was implemented at the Michigan Assembly plant in Wayne, Michigan, which is now producing the all-new Ford Focus. We are currently installing the process at the new Chongqing and Nanjing plants in China, the assembly plant for Ford of Thailand and the newly updated Louisville Assembly Plant in Kentucky. We are continuing to evaluate additional plants for Three-Wet conversion, as refurbishment actions are being planned in line with the corporate business plan.

In 2010, Ford continued the evaluation 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. This 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. Forty-seven of these new robotic washing machines are now in operation at Ford, and 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. We have also implemented robotic parts washing at our Craiova and Cologne engine plants, and are pursuing the use of this technology in China, India and Brazil.

We have also developed a system, called "fumes to fuel," that reduces the CO2 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, VOC emissions are super-concentrated approximately 2000:1. In this super-concentrated state, the VOCs themselves can be burned as fuel source, reducing the amount of natural gas necessary to destroy them. By reducing the need for natural gas, the fumes-to-fuel system has the potential to reduce CO2 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.

#### Page: 4. Communication

#### 4.1

Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in other places than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section Reference	Identify the attachment
In annual reports (complete)	pg. 20	Ford 2010 Annual Report
In voluntary communications (complete)	pg. 53/Climate Change, throughout the report	Ford 2010-11 Sustainability Report

#### **Further Information**

Ford's annual report can be found at http://corporate.ford.com/investors.

Ford's voluntary GHG reports can be found at http://corporate.ford.com/microsites/sustainability-report-2011-11/downloads.

#### Attachments

https://www.cdproject.net/Sites/2011/95/6595/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Ford 2010-11 Sustainability Report.pdf

https://www.cdproject.net/Sites/2011/95/6595/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Ford 2010 Annual Report.pdf

# Module: Risks and Opportunities [Investor]

Page: 5. Climate Change Risks

# 5.1

Have you identified any climate change risks (current or future) that have potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation

## 5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact

#### 5.1b

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

#### The worldwide automotive industry is governed by a substantial amount of governmental

regulation, which often differs by state, region, and country. Governmental regulation has arisen, and proposals for additional regulation are advanced, primarily out of concern for the environment (including concerns about the possibility of global climate change and its impact), vehicle safety, and energy independence. In addition, many governments regulate local product content and/or impose import requirements as a means of creating jobs, protecting domestic producers, and influencing their balance of payments. In recent years, we have made significant changes to our product cycle plan to improve the overall fuel economy of vehicles we produce, thereby reducing their GHG emissions. There are limits on our ability to achieve fuel economy improvements over a given time frame, however, primarily relating to the cost and effectiveness of available technologies, consumer acceptance of new technologies and changes in vehicle mix, willingness of consumers to absorb the additional costs of new technologies, the appropriateness (or lack thereof) of certain technologies for use in particular vehicles, and the human, engineering and financial resources necessary to deploy new technologies across a wide range of products and powertrains in a short time. The cost to comply with existing governmental regulations is substantial, and future, additional regulations (already enacted, adopted or proposed) could have a substantial adverse impact on our financial condition and results of operations

#### 5.1c

Please describe your risks that are driven by change in physical climate parameters

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
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#### 5.1d

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

#### 5.1e

Please describe your risks that are driven by changes in other climate-related developments

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	
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#### 5.1f

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions

#### 5.1g

Please explain why you do not consider your company to be exposed to risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

#### 5.1h

Please explain why you do not consider your company to be exposed to risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

Based on Ford's assessment of the physical risks associated with climate change, we do not believe we can adequately predict the potential impacts of climate change on our business beyond noting the risk posed by natural or man-made disasters.

## 5.1i

Please explain why you do not consider your company to be exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

#### 6.1

Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation Opportunities driven by changes in other climate-related developments

#### 6.1a

Please describe your opportunities that are driven by changes in regulation

	ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
--	----	-----------------------	-------------	---------------------	-----------	-----------------	------------	------------------------

#### 6.1b

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

Ford has committed to doing its share to stabilize atmospheric CO2 at 450 ppm. Using a science-based CO2 model, we have calculated the amount of light-duty vehicle (LDV) CO2 emissions that are consistent with stabilizing the concentration of CO2 in the atmosphere at this level. We then calculated the long-term, sustained reductions in the CO2 emission rate (g/km) from new LDVs that would be needed to achieve 450 ppm atmospheric CO2, based on projections of vehicle sales and scrappage. Plotting these emission levels over time yields the "CO2 glide paths" that drive our technology plans. We have calculated region-specific CO2 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) CO2 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 CO2 emissions limits, all automakers must reduce their LDV emissions by the same proportion as prescribed by the CO2 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. 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.

In 2010, we applied the CO2 glide path methodology to develop CO2 targets for our commercial vehicles and facilities. 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 CO2 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. To explore which vehicle and fuel technologies might be most cost-effective in the long-term stabilization of atmospheric CO2 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 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. 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.

#### 6.1c

Please describe the opportunities that are driven by changes in physical climate parameters

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
----	-----------------------	-------------	---------------------	-----------	---------------------	------------	------------------------

#### 6.1d

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

#### 6.1e

#### Please describe the opportunities that are driven by changes in other climate-related developments

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact

#### 6.1f

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

#### 6.1g

Please explain why you do not consider your company to be exposed to opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

#### 6.1h

Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

To respond to the opportunities posed by the climate change issue, our long-term strategy is to do our part within the light duty transportation sector to contribute to climate stabilization by: 1. Continuously reducing the greenhouse gas emissions and energy usage of our operations. 2. Developing the flexibility and capability to market more lower-GHG-emission products, in line with evolving market conditions and consumer demands. 3. 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. Each of these has attendant costs associated with them. The availability of financial resources remains an issue. Ford believes this strategy is already showing results by positioning our Company to take advantage of opportunities created by shifts in markets. Our commitment to outstanding fuel economy aligns well with consumer interest in fuel-efficient vehicles. During 2010 our U.S. market share continued to grow and contributed to the Company's profitability.

#### 6.1i

Please explain why you do not consider your company to be exposed to opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

# Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]

# Page: 7. Emissions Methodology

#### 7.1

#### Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Fri 01 Jan 2010 - Fri 31 Dec 2010	1602246	3666231

# 7.2

# Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

# Please select the published methodologies that you use

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
Australia - National Greenhouse and Energy Reporting Act
Brazil GHG Protocol Programme
Philippine Greenhouse Gas Accounting and Reporting Programme (PhilGARP)
Programa GEI Mexico
Other

#### 7.2a

# If you have selected "Other", please provide details below

Chicago Climate Exchange: 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-reduction portion of the program after 2010, with cumulative verified emission reductions totaling nearly 700 million metric tons of carbon dioxide (CO2) since 2003. Through our participation in CCX, we built a world-class CO2 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 CO2 target, and to ensure compliance with the EU trading program and the new mandatory U.S. EPA reporting requirements.

#### 7.3

#### Please give the source for the global warming potentials you have used

Gas	Reference
Other: Carbon dioxide	Other: IPCC 2006

#### 7.4

#### Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Natural gas	0.05	Other: tons CO2 per MMBTU	WRI
Propane	0.06	Other: tons CO2 per MMBTU	WRI
Distillate fuel oil No 2	0.07	Other: tons CO2 per MMBTU	WRI
Anthracite	2.24	Other: tons CO2 per short ton	WRI

#### **Further Information**

CO2 emissions from energy usage (e.g., electricity, natural gas, and coal) represent the significant source of greenhouse gas emissions from our manufacturing facilities. For our emissions reports, we use the GHG Protocol Scopes 1 and 2. Our direct CO2 emissions "within the fence posts" are from combustion of natural gas and coal. Indirect CO2 emissions from usage of purchased electricity comprise roughly two-thirds of our total manufacturing-related CO2 emissions. Our commitment letter to CCX covers CO2 emissions from energy used at manufacturing facilities throughout North America (Canada, Mexico, and U.S.) (both direct and indirect emissions sources). We report joint venture emissions based upon operational control. Ford has established comprehensive internal controls including centralized tracking of all emissions data globally, internal procedures for establishing emissions trading strategies and status reports, and central coordination of all CO2-related audits and reporting. This global, centralized approach has supported our participation in facility CO2 initiatives in a more cost-effective and operationally efficient manner. Ford has established global roles and responsibilities and policies and procedures to help ensure compliance with emissions trading

initiatives worldwide. Ford adopted the Global Emissions Manager (GEM) database that serves as a central repository for our facilities to consistently input and assess energy and CO2 data. We have found that emissions data management is performed most efficiently when centralized in this manner. We subsequently expanded GEM to include water usage, waste management, and other environmental metrics that support Ford's sustainability objectives.

#### Page: 8. Emissions Data - (1 Jan 2010 - 31 Dec 2010)

# 8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

**Operational control** 

## 8.2a

Please provide your gross global Scope 1 emissions figure in metric tonnes CO2e

#### 1602246

#### 8.2b

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 1 breakdown

Boundary	Gross global Scope 1 emissions (metric tonnes CO2e)	Comment

#### 8.2c

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 1 Total

Gross global Scope 1 emissions (metric tonnes CO2e) - Total Part 1	Comment

# 8.2d

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 2

Gross global Scope 1 emissions (metric tonnes CO2e) - Other operationally	Comment
controlled entities, activities or facilities	

# 8.3a

# Please provide your gross global Scope 2 emissions figure in metric tonnes CO2e

#### 3666231

#### 8.3b

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 breakdown

Boundary
----------

# 8.3c

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 Total

Gross global Scope 2 emissions (metric tonnes CO2e) - Total Part 1	Comment	

#### 8.3d

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 2

	Gross global Scope 2 emissions (metric tonnes CO2e) - Other operationally controlled entities, activities or facilities	Comment
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8.4

Are there are any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

8.4a

Please complete the table

Reporting Entity	Source	Scope	Explain why the source is excluded
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# 8.4

Are there are any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

No

# 8.4a

Please complete the table

Source	Scope	Explain why the source is excluded

8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and Scope 2 figures that you have supplied and specify the sources of uncertainty in your data gathering, handling, and calculations

Scope	Uncertainty Range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Data Gaps	Ford has established comprehensive internal controls including centralized tracking of all emissions data globally, internal procedures for establishing emissions trading strategies and status reports, and central coordination of all CO2-related audits and reporting. This global, centralized approach has supported our participation in facility CO2 initiatives in a more cost-effective and operationally efficient manner. Ford has established global roles and responsibilities and policies and procedures to help ensure compliance with emissions trading initiatives worldwide. Ford adopted the Global Emissions Manager (GEM) database that serves as a central repository for our facilities to consistently input and assess enerhy and CO2 data. We have found that emissions data management is performed most efficiently when centralized in this manner. we subsequently expanded GEM to include water usage, waste management, and other environmental metrics that support Ford's sustainability objectives. All of our manufacturing facilities have robust data included in the GHG inventory. We continue to include smaller, non-manufacturing facilities as data becomes available.
Scope 2	More than 2% but less than or equal to 5%	Data Gaps	Ford has established comprehensive internal controls including centralized tracking of all emissions data globally, internal procedures for establishing emissions trading strategies and status reports, and central coordination of all CO2-related audits and reporting. This global, centralized approach has supported our participation in facility CO2 initiatives in a more cost-effective and operationally efficient manner. Ford has established global roles and responsibilities and policies and procedures to help ensure compliance with emissions trading initiatives worldwide. Ford adopted the Global Emissions Manager (GEM) database that serves as a central repository for our facilities to consistently input and assess enerhy and CO2 data. We have found that emissions data management is performed most efficiently when centralized in this manner. we subsequently expanded GEM to include water usage, waste management, and other environmental metrics that support Ford's sustainability objectives. All of our manufacturing facilities have robust data included in the GHG inventory. We continue to include smaller, non-manufacturing facilities as data becomes available.

# 8.6

Please indicate the verification/assurance status that applies to your Scope 1 emissions

Verification or assurance complete

# Please indicate the proportion of your Scope 1 emissions that are verified/assured

More than 60% but less than or equal to 80%

# 8.6b

## Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
Verification	EC Directive 2003/87/EC Annex V and 2007/589/EC as amended	The statement for the Bridgend Engine Plant is included as an example. Verification statements for the other plants are similar.
Verification	Other: CCX Verification Protocol	See attached statement.

# 8.7

## Please indicate the verification/assurance status that applies to your Scope 2 emissions

Verification or assurance complete

# 8.7a

# Please indicate the proportion of your Scope 2 emissions that are verified/assured

More than 40% but less than or equal to 60%

# 8.7b

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
Verification	EC Directive 2003/87/EC Annex V and 2007/589/EC as amended	The statement for the Bridgend Engine Plant is included as an example. Verification statements for the other plants are similar.
Verification	Other: CCX Verification Protocol	See attached statement.

# 8.8

Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

No

8.8a

Please provide the emissions in metric tonnes CO2e

#### **Further Information**

All of our facilities worldwide are third party certified to ISO 14001, which includes our management systems. All of our GHG data receives a significant level of internal QA/QC verification. In addition, more than two-thirds of Ford's global facility greenhouse gas (GHG) emissions are third-party verified. All of Ford's North American GHG emissions data since 1998 have been externally verified by FINRA, the auditors of the NASDAQ stock exchange, as part of membership in the Chicago Climate Exchange. 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 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.

#### Attachments

https://www.cdproject.net/Sites/2011/95/6595/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/CCX statement.pdf

https://www.cdproject.net/Sites/2011/95/6595/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/Copy

of EmRpt-2410-2010-08022011-FINAL Ford Bridgend SIGNED.xls

# Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

# 9.1

Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

# 9.1a

# Please complete the table below

Country	Scope 1 metric tonnes CO2e
Other: North America	1083150
Other: South America	79838
Other: Europe	303544
Other: Asia Pacific and Africa	135714

# 9.2

# Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

9.2a

Please break down your total gross global Scope 1 emissions by business division

Business Division	Scope 1 metric tonnes CO2e	
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# 9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope	1	metric	tonnes	CO2e
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# 9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type

Scope 1 metric tonnes CO2e

# 9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 metric tonnes CO2e

#### Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

#### 10.1

Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

# 10.1a

Please complete the table below

Country	Scope 2 metric tonnes CO2e
Other: North America	2629600
Other: South America	31415
Other: Europe	454082
Other: Asia Pacific and Africa	551133

# 10.2

# Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

# 10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division

Scope 2 metric tonnes CO2e

# 10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility

Scope 2 metric tonnes CO2e

#### 10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 metric tonnes CO2e

#### Page: 11. Emissions Scope 2 Contractual

## 11.1

Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?

#### Yes

## 11.1a

You may report a total contractual Scope 2 figure in response to this question. Please provide your total global contractual Scope 2 GHG emissions figure in metric tonnes CO2e

11.1b

Explain the basis of the alternative figure (see guidance)

## 11.2

Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?

No

## 11.2a

Please provide details including the number and type of certificates

Type of certificate	Number of certificates	Comments

# 12.1

## What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

# 12.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy type	MWh
Fuel	8472786
Electricity	6751769
Heat	
Steam	1218457
Cooling	

## 12.3

## Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Anthracite	36435
Coke oven coke	107993
Diesel/Gas oil	60136
Distillate fuel oil No 2	83507
Propane	207131
Natural gas	7901752
Landfill gas	75833

# 13.1

How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Increased

# 13.1a

## Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in output	13	Increase	We reduced our total facilities-related CO2 emissions by approximately 49 percent, or 4.8 million metric tons, from 2000 to 2010. During this same period, we reduced facilities-related CO2 emissions per vehicle by 30 percent. While total CO2 emissions increased by 13 percent from 2009 to 2010 due to increased production, per-vehicle emissions decreased by 5.6 percent

# 13.2

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
40.8	metric tonnes CO2e	unit total revenue	2	Decrease	The intensity figure is metric tonnes CO2e per million dollars revenue (USD). Revenue increased from 2009 to 2010. This data is provided, however, we do not consider this metric the most relevant to our business because it varies by region.

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
31.8	metric tonnes CO2e	FTE Employee	21.4	Increase	While total CO2 emissions and production increased from 2009 to 2010, the number of full time equivalent employees decreased by over 10,000.

# 13.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
1.01	metric tonnes CO2e	Other: vehicle produced	5.6	Decrease	We reduced our total facilities-related CO2 emissions by approximately 49 percent, or 4.8 million metric tons, from 2000 to 2010. During this same period, we reduced facilities-related CO2 emissions per vehicle by 30 percent. While total CO2 emissions increased by 13 percent from 2009 to 2010 due to increased production, per-vehicle emissions decreased by 5.6 percent

#### Page: 14. Emissions Trading

# 14.1

Do you participate in any emission trading schemes?

Yes

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Fri 01 Jan 2010 - Fri 31 Dec 2010	280591	0	190831	Facilities we own and operate
Other: Chicago Climate Exchange	Fri 01 Jan 2010 - Fri 31 Dec 2010		0		Facilities we own and operate

Please complete the following table for each of the emission trading schemes in which you participate

#### 14.1b

#### What is your strategy for complying with the schemes in which you participate or anticipate participating?

Ford's manufacturing CO2 strategy is a combination of energy efficiency improvements and implementation of innovative manufacturing technologies. For example, we are implementing a new paint process that eliminates the need for paint to cure after the prime coat. This technology, called "three wet," reduces CO2 emissions by 15 percent and volatile organic compound emissions by 10 percent. For example, the three wet system produces 6,000 metric tons fewer CO2 emissions per year compared to water-borne systems and 8,000 metric tons fewer CO2 emissions per year compared to conventional high-solids, solvent-borne systems. In 2009, Ford continued to expand the use 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. This 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 also capturing our own waste products and turning them into fuel. We have implemented "fumes-to-fuel" technology - which captures emissions from the painting process and uses them to generate electricity - in paint shops at three of our manufacturing facilities. This process cuts down on fossil fuel use and the resulting CO2 emissions, as well as reducing emissions from our paint shops. Besides CO2 trading, Ford is engaged in numerous facility CO2 initiatives, including: Mexico GHG Pilot Program: The Mexico GHG Program started as a two year partnership between La Secretaria de Medio Ambiente v Recursos Naturales (SEMARNAT), World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). It is a voluntary program established to help Mexican companies to quantify greenhosue gas emissions. Ford Motor Company was proud to be the only auto manufacturer to participate in the first phase of hte program where we are committed to reporting emissions annually. Canadian Voluntary Challenge and Registry: Ford voluntarily reports GHG emissions to the Canadian Voluntary Challenge and Registry (VCR). It has been reporting annual emissions since 1999. Over the years, it has received the highest level of achievement in the reporting system, which includes two Leadership Awards in the Automotive Manufacturing Sector category as well as gualifying as a Silver Champion Level Reporter in 1999 and Gold Champion Level Reporter from 2000 to 2003, 2005, & 2006. Philippines GHG Program: The Philippine Greenhouse Gas Accounting and Reporting Program (PhilGARP) - partnership between Klima Climate Change Center of the Manila Observatory, Philippine Business for the Environment, the Department of the Environment and Natural Resources, Department of Energy, WBCSD, and WRI - was launched in November 2006. To date, 15 companies are completing GHG inventories. Ford was the first and only automobile company to submit a report to the program. Australian GHG Challenge Plus Program: The Australian GHG Challenge Plus Program builds on the success of the Australian Greenhoue Challenge

Program established in 1995. In 1997, Ford was the first automotive company to join the voluntary program and continues to report its Australian facility emissions annually. The Climate Registry (TCR): TCR is a non-profit organization established to measure and publicly report GHG emissions using a single reporting standard across industry sectors. TCR represents a linking of several state-sponsored GHG emissions reporting efforts, including the California Climate Action Registry and the Eastern Climate Registry. Ford supports the global harmonization of GHG monitoring and reporting practices. TCR represents a significant step toward that goal. Brazil GHG Program: Ford Motor Company is proud to be the first auto manufacturere to participate in the first phase of the program where wer are committed to reporting emissions annually. China GHG Program: In 2008, Ford became the first automaker to release a greenhouse gas emissions report in China. The report covered the Chongqing facility operated by Ford's joint venture in China - the Changan Ford Mazda Automobile Co., Ltd. (CFMA). In the succeeding years, Ford has submitted greenhouse gas reports for all its manufacturing operations in China, a total of four plants.

## 14.2

#### Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

14.2a

Please complete the following table

Credit origination or credit purchase Credit type identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits retired	Purpose e.g. compliance
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## Page: 15. Scope 3 Emissions

## 15.1

Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
Purchased goods		Ford was a "road tester" of the Scope 3 Greenhouse Gas	Ford was a "road tester" of the Scope 3 Greenhouse Gas

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
and services		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 draft Scope 3 (corporate value chain) Standard provides a step-by-step methodology for companies to quantify and report their Scope 3-related GHG emissions, and is intended to be used in conjunction with the GHG Protocol Corporate Accounting and Reporting Standard. It will provide a standardized method to inventory the emissions associated with corporate value chains, taking into account impacts both upstream and downstream of the Company's operations. The draft 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 standards can be practically implemented by companies and organizations of different sizes and from a variety of sectors and geographic areas around the world. WRI/WBCSD collected feedback from 60 stakeholders and issued a draft standard in November 2010. Ford was the only automotive company to participate. The final Scope 3 Standard is scheduled to be published by WRI/WBCSD in September 2011.	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 draft Scope 3 (corporate value chain) Standard provides a step-by-step methodology for companies to quantify and report their Scope 3-related GHG emissions, and is intended to be used in conjunction with the GHG Protocol Corporate Accounting and Reporting Standard. It will provide a standardized method to inventory the emissions associated with corporate value chains, taking into account impacts both upstream and downstream of the Company's operations. The draft 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 standards can be practically implemented by companies and organizations of different sizes and from a variety of sectors and geographic areas around the world. WRI/WBCSD collected feedback from 60 stakeholders and issued a draft standard in November 2010. Ford was the only automotive company to participate. The final Scope 3 Standard is scheduled to be published by WRI/WBCSD in September 2011.
Transportation and distribution		Ford have a global initiative to coordinate CO2 emissions reporting for both our inbound and outbound networks, with a standardised approach and procedures. In 2006, our European operations, with the support of our European lead logistics partner DHL International, first began producing basic CO2 metrics for our inbound road and rail network. During 2008 and 2009, Ford and DHL supported a Masters Project at Cologne University to better understand reporting techniques and to tune our methods to the latest academic thinking. Since that time we have greatly expanded our reporting. At the start of 2009 we began internally reporting CO2 emissions for our	The great majority of our transport greenhouse gas emissions comprise CO2 from exhaust emissions from fuel usage. Recognising that burning fuel also produces low levels of other GHGs, such as N2O and Methane, since Jan 2011 we have been reporting in terms of CO2e, in line with WRI/ WBCSD recommendations For road freight we use emissions factors based on average fuel economy of our carrier base. For rail and ocean we get data from our service providers. We have a clear policy to measure & reduce CO2 emissions as part of our functional business plan. Our corporate business policies include specific objectives on monitoring freight CO2 emissions,

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
		North American land-based networks. In 2010, following work with our transatlantic lead logistics partner UTi Worldwide, we introduced CO2 emissions reporting for ocean freight. In 2010 we also began collecting data for our Asia Pacific networks and are developing processes for reporting in South America. For 2011, we have updated our emissions calculations to take account of other greenhouse gases including N2O and methane. Our inbound freight network is generally on a collect basis using contracted carriers. For reporting purposes we consider all emissions from collected tier 1 suppliers to our manufacturing sites. This includes road, rail and ocean modes. We assume emissions into our tier 1s from their own supply base to be reported by our tier 1s within their own scope 3 submissions. We base our calculations on secondary data of distance travelled, loading etc. To provide consistency we use routing data gathered centrally by our Lead Logistics Partners. We use emissions factors appropriate to the transport mode. Our outbound data considers transport from factory gate to handover to dealer. We are rapidly expanding our coverage but there are still some gaps both globally and regionally. Our standard metric is CO2e per vehicle produced, rather than an overall total. This allows us to generate meaningful information from the networks we do currently measure. For those areas where we already have comprehensive data (such as North American and European inbound networks) then we have year- on-year improvement targets	reducing fleet fuel usage, improving average fleet emissions levels, improving freight utilisation and carrying out business case studies to improve the % usage of green routes. Activities that directly reduce our reported emissions include network redesign, use of alternative fuels and lubricants, use of aerodynamics and driver training.
Transportation and distribution of sold products		Comments included within Tranportation and Distribution section above	Comments included within Tranportation and Distribution section above

## 15.2

Please indicate the verification/assurance status that applies to your Scope 3 emissions

No emissions data provided

#### 15.2a

Please indicate the proportion of your Scope 3 emissions that are verified/assured

#### 15.2b

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance Relevant standard Relevant statement attached	
---	--

#### 15.3

#### How do your absolute Scope 3 emissions for the reporting year compare to the previous year?

#### This is our first year of estimation

#### 15.3a

Please complete the table

Reason	Emissions value (percentage)	Direction of Change	Comment

#### **Further Information**

In 2010, Ford also joined the Supply Chain Program of the Carbon Disclosure Project's (CDP). Through this effort, Ford worked 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 better understand our suppliers' capability to measure, manage and report their emissions. Ford was the only automotive company to participate in the CDP Supply Chain Program in 2010.

As part of its participation in both the WRI/WBCSD and CDP initiatives, Ford surveyed 35 suppliers regarding greenhouse gas emissions management. These

suppliers were identified through a variety of criteria, which included, but weren't limited to:

The GHG intensity of the commodities supplied,

The nature of the business relationship with Ford, and

The geographic footprint of the supplier's global operations.

The 35 chosen suppliers represented close to 30 percent of Ford's \$65 billion in annual procurement spending in 2009. We achieved a 75 percent response rate from the surveyed suppliers.

A key finding from the responses was the variability in supplier readiness to measure and report GHG emissions. The qualitative responses received provided valuable insight into the risk management opportunities for the broader automotive supply base. From these results, 80 percent of respondents indicated that they track their GHG emissions, and 50 percent of those companies indicated that they externally report their emissions. The results clearly demonstrated that those high-impact suppliers that we had hoped were paying attention to GHG emissions, in fact were doing so. However, these results may not represent the broader global automotive supply base's readiness to track, report and proactively manage GHG emissions.

In 2011 Ford is expanding engagement on GHG emissions management by more than 350 percent, engaging with suppliers across a much broader selection of production, information technology, and logistics suppliers.

Our Material Planning & Logistics function is working closely with Purchase on value stream mapping projects to help us compare the transportation and manufacturing footprints in different source locations.

Through 2010 and 2011, Ford has played a strong role in supporting the development of internationally recognised reporting standards for freight emissions. Besides the work mentioned above with the WRI/WBCSD GHG Protocol Scope 3 reporting initiative, we have been actively engaging others in the industry and have delivered lead presentations on freight emissions reporting to a wide range of conferences and industry association seminars, including the Association of Climate Change Officers, the Automotive Industry Action Group, the Verband der Automobilindustrie (Germany) and the Society of Motor Manufacturers and Traders (UK). We have engaged directly with the EPA SmartWay program in the US (our Rawsonville-based fleet is SmartWay accredited). In Europe, we sit on the UK 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 Dec 2010. Our UK Transport Operations are actively supporting the Freight Transport Association's Logistics Carbon Reduction Scheme. In Asia Pacific we recently supported the inaugural Green Freight China seminar run by CAI-Asia and hosted by the Ministry of Transport in Beijing.

#### Module: Auto component

Page: Automotive - 1 - Reference dates

#### AU0.1

Please enter the dates of the periods for which you will be providing data in subsequent tables. The years given as column headings in subsequent tables correspond to the year ending dates selected below

Year ending	Date range
2010	Fri 01 Jan 2010 - Fri 31 Dec 2010

## Page: Automotive - 2 - Sales Volumes

# AU1.1a

# Sales of gas/petrol vehicles - Country totals

Country Totals	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated
USA										
W. Europe										
Japan										
China										
India										
Brazil										
Russia										
CEE										
Other										
TOTAL	6842	6767	6597	6553	5407	4817	5524			

## AU1.1b

Sales of gas/petrol vehicles - USA - Passenger Vehicles

	Passenge car type	2004	2005	2006	2007	2008	2009	2010	2011 estimate	2012 d estimated	2013 d estimated	1	
AU1.1	c												
	Sales of gas/petrol vehicles - USA - Light Trucks & SUVs												
	Segment Type	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated		

## AU1.1d

	Sales of gas/petrol vehicles - Western Europe												
	Segment Type	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated		
U1.1e	)												
	Sales of gas/	petrol vehicle	es - Japan										
	Segment Type	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated		

## AU1.1f

## Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

Ford does not track segmentation in this manner. Ford provided this feedback when this sector reporting section was being developed. The explicit segmentation Ford does track, including projections, is classified Company Confidential.

# AU1.2a

## Sales of diesel vehicles - Country totals

Country Totals	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated
USA										

Country Totals	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated
W. Europe										
Japan										
China										
India										
Brazil										
Russia										
CEE										
Other										
TOTAL										

## AU1.2b

Sales of diesel vehicles - USA

Туре	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated
Passenger cars										
Light trucks & SUVs										

# AU1.2c

# Sales of diesel vehicles - Europe

Тур	e	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated

#### Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

Ford does not track segmentation in this manner. Ford provided this feedback when this sector reporting section was being developed. The explicit segmentation Ford does track, including projections, is classified Company Confidential.

## AU1.3a

#### Sales of alternatively-powered vehicles - Country totals

This category includes vehicles powered by Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), fuel cells, compressed air, electricity and hybrids

Country Totals	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2012 estimated	2013 estimated
USA										
W. Europe										
Japan										
China										
India										
Brazil										
Russia										
CEE										
Other										
TOTAL										

## AU1.3b

#### Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

Ford does not track segmentation in this manner. Ford provided this feedback when this sector reporting section was being developed. The explicit segmentation Ford does track, including projections, is classified Company Confidential.

#### **Further Information**

Totals listed in Table AU1.1A reflect global total vehicle sales of all types. Attached is Ford Annual Report on Ford 10-K.

#### Attachments

https://www.cdproject.net/Sites/2011/95/6595/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/AU1SalesVolumes/2010 10-K -- FINAL.pdf

#### Page: Automotive - 3 - Emissions from sold vehicles

#### AU2.1

# Please explain any historic and anticipated changes in the CO2 emissions profile of vehicles sold (e.g. introduction of clean technologies, changes to sales mix) for the time period 2004-2015.

Ford does not publically provide specific information on anticipated changes in the CO2 emissions profile of vehicles sold. However, to provide background, Ford's 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 believe that traditional gasoline- and diesel-powered vehicles with internal combustion engines will continue to be a major part of the mix. Actions we are taking to improve the fuel economy and CO2 emissions of these vehicles include implementing advanced engine and transmission technologies, weight reductions and aerodynamic improvements, as well as increasing the efficiency of vehicle sub-systems. See http://www.corporate.ford.com/microsites/sustainability-report-2010-11/issues-climate-plan-economy for more detail.

Engines: 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 engine power or vehicle performance. EcoBoost engines help to improve vehicle fuel economy 10 to 20% and reduce carbon dioxide (CO2) emissions up to 15% compared to larger-displacement engines. EcoBoost was first introduced in North America as a 3.5L V6 engine in 2010. We continue to expand the application of EcoBoost technology to more engine types and vehicles and by 2013, Ford plans to offer EcoBoost engines on 85 to 90% of our North American and European nameplates, while also migrating them to our other regions.

Transmissions: To further improve the fuel economy of our vehicles, we are implementing a dual-clutch transmission system called PowerShift which combines manual and automatic transmission technologies to deliver the fuel efficiency of a manual with the driving ease of an automatic. It uses six speeds instead of the four or five on most automatics. PowerShift technology increases fuel efficiency by up to 9% compared to traditional four-speed automatic transmissions. We are also introducing conventional six-speed transmissions to replace less-efficient four- and five-speed transmissions in a range of vehicles, which can improve fuel economy by up to 5% compared to typical four- and five-speed gearboxes. By 2013, we plan to offer advanced six-speed transmissions on 100% of our new, non-hybrid vehicles in Europe and North America and many new vehicles in other regions.

Other technologies that improve fuel economy include:

Electric power-assisted steering technology (ÉPAS), which typically will reduce fuel consumption and decrease carbon dioxide emissions by up to 3.5% over traditional hydraulic systems, depending on the vehicle and powertrain application. Ultimately, we will introduce EPAS into all of our passenger cars and light-duty vehicles.

Automatic Stop/Start 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 a vehicle without the technology, but it improves city driving fuel economy by up to 6%. The gain can be as high as 10% for some drivers, depending on vehicle size and usage. By 2016, 90% of our vehicle nameplates globally will be available with

#### start/stop technology.

Weight Reductions: 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.

Battery Management Systems: 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 control the power supply system (alternator) to maximize the overall efficiency of the electrical system and reduce its negative impacts on fuel economy.

Aerodynamics: We are optimizing vehicle aerodynamics to improve the fuel economy of our global product lineup. 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% better fuel economy. Also in 2011, we introduced an "active grille shutter" technology that reduces aerodynamic drag by up to 6%, thereby increasing fuel economy and reducing CO2 emissions.

Aggressive Deceleration Fuel Shut-off (ADFSO): 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 improved fuel shut-off will increase fuel economy by an average of 1%. 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.

#### AU2.2

# Please explain the methodology used to calculate CO2 emissions from sold vehicles and any differences with data published by industry associations or governmental agencies or the methodologies they have used

The 2010 EPA/NHTSA Light Duty Vehicle Greenhouse Gas Emission and Corporate Average Fuel Economy Standards rulemaking for the 2012-2016 model years uses a conversion factor of 8,887 grams CO2 per gallon gasoline fuel and 10,180 grams CO2 per gallon diesel fuel. This final rule can be found at the below link.

http://www.epa.gov/otaq/climate/regulations.htm.

#### AU2.3a

Sales-weighted CO2 emissions in gCO2/km or gCO2/mile for gas/petrol-powered vehicles

Country totals	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
USA											
W. Europe											
Japan											

Country totals	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
China											
India											
Brazil											
Russia											
CEE											
Other											
TOTAL											

## AU2.3b

# Sales-weighted CO2 emissions in gCO2/km or gCO2/mile for gas/petrol-powered vehicles - USA - Passenger vehicles

Segment Type	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
Two-seaters											
Sedans mini-compact											
Sedans sub-compact											
Sedans compact											
Sedans mid-size											
Sedans large											
Station wagons small											
Station wagons mid- size											
Station wagons large											
Passenger car total											

# AU2.3c

Sales-weighted CO2 emissions in gCO2/km or gCO2/mile for gas/petrol-powered vehicles - USA - Light Trucks & SUVs

	Segment Type	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
AU2.3	d											
	Sales-weighte	ed CO2 emis	sions in gCO	2/km or gCO2	/mile for ga	s/petrol-powe	red vehicles	- Western Eu	irope			
	Segment Type	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
AU2.3	e											
	Sales-weighte	ed CO2 emis	sions in gCO	2/km or gCO2	/mile for ga	s/petrol-powe	red vehicles	- Japan				
	Segment Type	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
AU2.3	f											

Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive.

Ford treats this data as commercially sensitve/Company Confidential.

# AU2.4a

Sales-weighted CO2 emissions in gCO2/km or gCO2/mile for diesel-powered vehicles - Country totals

Country Totals	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
USA											
W. Europe											
Japan											
China											
India											
Brazil											
Russia											
CEE											
Other											
TOTAL											

# AU2.4b

# Sales-weighted CO2 emissions in gCO2/km or gCO2/mile for diesel-powered vehicles - USA

Segment Type	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated
Passenger cars											
Light trucks & SUVs											

# AU2.4c

## Sales-weighted CO2 emissions in gCO2/km or gCO2/mile for diesel-powered vehicles - Western Europe

Segment Type	Units	2004	2005	2006	2007	2008	2009	2010	2011 estimated	2013 estimated	2015 estimated

#### Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

Ford treats this data as commercially sensitve/Company Confidential.

#### **Further Information**

For detailed information regarding Ford's 2005-2010 CO2 and Fuel Economy Reporting, please visit: http://www.corporate.ford.com/microsites/sustainability-report-2010-11/environment-data-economy

#### Page: Automotive - 4 - Clean Technologies

#### AU3.1a

Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

**Technology Category - ICE** 

Type 2010 2015 estimated

#### AU3.1b

Auto-manufacturers only – please give the % of your range of vehicles for which the following technologies are available:

**Technology Category - Hybrids** 

Type 2010 2015 estimated

## AU3.1c

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

## **Technology Category - Zero Emissions**

Туре	2010	2015 estimated
------	------	----------------

## AU3.1d

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

**Technology Category - Transmission** 

Туре	2010	2015 estimated

## AU3.1e

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology Category - Body

Type 2010 2015 estimated

## AU3.1f

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

**Technology Category - Others** 

Type 2010 2015 estimated



Auto-equipment manufacturers only - please select the technology categories that are relevant to your business

Technology category - ICE - please state if you provide the following technologies

Туре	2010	2015 estimated

Technology category - hybrids - please state if you provide the following technologies

Туре	2010	2015 estimated

Technology category - zero emissions - please state if you provide the following technologies

Туре	2010	2015 estimated

Technology category - transmission - please state if you provide the following technologies

Туре	2010	2015 estimated

#### Technology category - body - please state if you provide the following technologies

Туре	2010	2015 estimated

Technology category - others - please state if you provide the following technologies

Туре	2010	2015 estimated

#### AU3.1h

# For both auto manufacturers and auto-equipment manufacturers: please provide an explanation if data cannot be provided according to the proposed nomenclature or if it is unavailable or commercially sensitive.

Ford treats this data as commercially sensitve/Company Confidential.

That said, our sustainable technologies and alternative fuels plan, mapped out in 2007, is our route to improving the fuel economy and cutting the CO2 emissions of our products around the world. We have completed the near-term actions and are currently implementing the mid-term actions.

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 experimentation and adoption of new vehicle technologies and fuels. This time, however, there may be 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.

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. For example, we are introducing fuel-saving technologies like our EcoBoost<sup>™</sup> engines and efficient six-speed transmissions across a wide range of our traditional gasoline vehicle lineup.

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, in the next three years we will be 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 that can run on either regular gasoline or E85 (a blend of 85 percent ethanol and 15 percent gasoline). 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 no or low additional cost, allow consumers to choose fuels based on availability and price.

We are also making engines that can be converted to run on compressed natural gas (CNG) and liquefied petroleum gas (LPG) available on select vehicle models. And, we are working with qualified vehicle modifiers to ensure that conversion to those fuels meets our quality, reliability and durability requirements. For example, we recently announced that the new Ford Transit Connect, which went on sale in the U.S. in early 2010, is available with a CNG/LPG conversion-ready engine package. Our F-Series trucks and E-Series vans are also available with a propane-ready engine. In Europe, we offer CNG and LPG conversions of various models in markets with a dedicated infrastructure, such as Italy, Germany and France.

CNG and LPG are particularly good options for fleet customers, such as taxi companies and delivery services, that use a central refueling system. In addition, CNG and LPG are widely available as vehicle fuels throughout South America and Europe. We are delivering CNG/LPG-ready engines to provide another lower-carbon option to those customers for whom this option makes sense.

#### **Further Information**

For detailed information on Ford's technology migration and alternative fuels plans, please visit: http://www.corporate.ford.com/microsites/sustainability-report-2010-11/issues-climate-plan

## Module: Sign Off

Page: Sign Off

#### Please enter the name of the individual that has signed off (approved) the response and their job title

Thomas Niemann, Reporting Manager, Sustainability & Vehicle Environmental Matters, Ford Motor Company

Carbon Disclosure Project