UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

January 30, 2015

Jerome F. Zaremba
Ford Motor Company
jzaremb1@ford.com

Re: Ford Motor Company
Incoming letter dated December 17, 2014

Dear Mr. Zaremba:

This is in response to your letter dated December 17, 2014 concerning the shareholder proposal submitted to Ford by Carl Olson. We also have received a letter from the proponent dated December 19, 2014. Copies of all of the correspondence on which this response is based will be made available on our website at http://www.sec.gov/divisions/corpfin/cf-noaction/14a-8.shtml. For your reference, a brief discussion of the Division's informal procedures regarding shareholder proposals is also available at the same website address.

Sincerely,

Matt S. McNair
Special Counsel

Enclosure

cc: Carl Olson
FISMA & OMB MEMORANDUM M-07-16

January 30, 2015

Response of the Office of Chief Counsel
Division of Corporation Finance

Re: Ford Motor Company
Incoming letter dated December 17, 2014

The proposal requests that the board publish a report that provides the information specified in the proposal.

There appears to be some basis for your view that Ford may exclude the proposal under rule 14a-8(i)(7), as relating to Ford's ordinary business operations. Accordingly, we will not recommend enforcement action to the Commission if Ford omits the proposal from its proxy materials in reliance on rule 14a-8(i)(7). In reaching this position, we have not found it necessary to address the alternative basis for omission upon which Ford relies.

Sincerely,

Justin A. Kisner
Attorney-Adviser

DIVISION OF CORPORATION FINANCE
INFORMAL PROCEDURES REGARDING SHAREHOLDER PROPOSALS

The Division of Corporation Finance believes that its responsibility with respect to matters arising under Rule 14a-8 [17 CFR 240.14a-8], as with other matter under the proxy rules, is to aid those who must comply with the rule by offering informal advice and suggestions and to determine, initially, whether or not it may be appropriate in a particular matter to recommend enforcement action to the Commission. In connection with a shareholder proposal under Rule 14a-8, the Division's staff considers the information furnished to it by the Company in support of its intention to exclude the proposals from the Company's proxy materials, as well as any information furnished by the proponent or the proponent's representative.

Although Rule 14a-8(k) does not require any communications from shareholders to the Commission's staff, the staff will always consider information concerning alleged violations of the statutes administered by the Commission, including argument as to whether or not activities proposed to be taken would be violative of the statute or rule involved. The receipt by the staff of such information, however, should not be construed as changing the staff's informal procedures and proxy review into a formal or adversary procedure.

It is important to note that the staff's and Commission's no-action responses to Rule 14a-8(j) submissions reflect only informal views. The determinations reached in these no-action letters do not and cannot adjudicate the merits of a company's position with respect to the proposal. Only a court such as a U.S. District Court can decide whether a company is obligated to include shareholders proposals in its proxy materials. Accordingly a discretionary determination not to recommend or take Commission enforcement action, does not preclude a proponent, or any shareholder of a company, from pursuing any rights he or she may have against the company in court, should the management omit the proposal from the company's proxy material.

RECEI

Carl Olson

FISMA & OMB MEMORANDUM M-07-16

December 19, 2014

Office of the Chief Counsel
Division on Corporation Finance
Securities and Exchange Commission
100 F St NE
Washington, D. C. 50549

Re: Ford Motor Company request for no-action letter on my proposal

Dear Sirs:

A letter dated December 17, 2014, from Ford Motor Company secretary Jerome F. Zeremba, indicated Ford's intention to omit my proposal from the proxy statement for the 2015 annual meeting. As you will read below, all of its reasons are ineffective, and I request you no allow the intended omission.

Mr. Zaremba argues that the proposal deals with matters of ordinary business operations. This is not true, as you will read below.

Mr. Zaremba argues that the proposal has been substantially implemented. This is not true, as you will read below.

Mr. Zaremba argues the proposal does not present significant policy issues. This is not true. The issue of high fuel prices and the sources of oil are significant social issues, but they are in addition to the proposal's issues of the effects of high fuel prices on the company's profits (down) and the effect of the actual sources of earth oil production on the actual volume of future oil production and its availability for use for Ford. You can read further on this in my statement of support.

Mr. Zaremba argues that the proposal require something about Ford's business plan and its allocation of Ford resources. This is not true. If Ford wants to include some further data, the proposal allows for that.

Mr. Zaremba argues the Dominion Resources, Inc., and First Energy Corp. cases apply. They do not. They are all off subject.

Mr. Zaremba argues that the proposal has been substantially implemented. That is not true. Nowhere in the 10-K or Sustainability statement are any germane or effective sections cited. There is no mention of either of the two issues in my proposal. If Ford wants to includes some further data, the proposal allows for that.

Mr. Zaremba cites the cases of Peabody Energy Corporation, Talbots Inc., and The Gap Inc. They are all off subject.

Thus, for the reasons presented above, Mr. Zaremba's objections are all void and ineffective. I urge you not to allow the intended omission of my proposal.

Sincerely,

Carl Olson

cc: Mr. Jerome P. Zaremba, Ford Motor Company

Office of the General Counsel
Phone: 313/337-3913
Fax: 313/337-9591
E-Mail: jzaremb1@ford.com

Ford Motor Company
One American Road
Room 1037-A3 WHQ
Dearborn, Michigan 48126

December 17, 2014

VIA EMAIL

Securities and Exchange Commission
Division of Corporation Finance
Office of the Chief Counsel
100 F Street, N.E.
Washington, D.C. 20549

Re: Omission of Shareholder Proposal Submitted by Carl Olson

Ladies and Gentlemen:

Pursuant to Rule 14a-8(j) promulgated under the Securities Exchange Act of 1934, as amended (the "Act"), Ford Motor Company ("Ford" or the "Company") respectfully requests the concurrence of the staff of the Division of Corporation Finance (the "Staff") of the Securities and Exchange Commission (the "Commission") that it will not recommend any enforcement action to the Commission if the shareholder proposal described below is omitted from Ford's proxy statement and form of proxy for the Company's 2015 Annual Meeting of Shareholders (the "Proxy Materials"). The Company's Annual Meeting of Shareholders is scheduled for May 14, 2015.

Mr. Olson (the "Proponent") has submitted for inclusion in the 2015 Proxy Materials a proposal requesting that the Company's Board of Directors publish an annual report titled "Report on Effect of Oil Cartel on Business Products, and on Production Process of Oil" (the "Proposal"; see Exhibit 1). The Company proposes to omit the Proposal from its 2015 Proxy Materials for the following reasons:

- The Proposal is excludable under Rule 14a-8(i)(7) because it deals with matters relating to the Company's ordinary business operations; and
- The Proposal is excludable under Rule 14a-8(i)(10) because the Company has substantially implemented the Proposal.

The Proposal

The Proposal includes the following language:

> The Board of Directors shall publish on its website or in print version every year prior to July 1 following the adoption of this resolution a report to the stockholders titled 'Report on Effect of Oil Cartel on Business Products, and on Production

> Process of Oil'. Said report to discuss the Board of Director's [sic] view of the effect of the oil cartel, including the Organization of Petroleum Exporting Countries and Russia, on the increase in the price of gasoline from about $1 per gallon in March 2003 to about $3.50 per gallon. Said report also to include the Board of Director's [sic] views on the process of producing petroleum underground and its importance for determining the publicly-disclosed volume of existing reserves of petroleum discovery and production. The Board of Directors may also include any further discussion on related facts and estimates as it deems relevant.

(see Exhibit 1). A copy of the Proposal, including its supporting statement, is attached as Exhibit 1.

The Proposal Deals with Matters Relating to the Company's Ordinary Business Operations

Rule 14a-8(i)(7) permits a company to omit a proposal if it deals with a matter relating to the company's ordinary business operations. In Exchange Act Release No. 34-40018 (May 21, 1998), the Commission stated:

> The policy underlying the ordinary business exclusion rests on two central considerations. The first relates to the subject matter of the proposal. Certain tasks are so fundamental to management's ability to run a company on a day-to-day basis that they could not, as a practical matter, be subject to direct shareholder oversight.
>
> ***
>
> However, proposals relating to such matters but focusing on sufficiently significant social policy issues (e.g., significant discrimination matters) generally would not be considered to be excludable, because the proposals would transcend the day-to-day business matters and raise policy issues so significant that it would be appropriate for a shareholder vote.
>
> The second consideration relates to the degree to which the proposal seeks to "micro-manage" the company by probing too deeply into matters of a complex nature upon which shareholders, as a group, would not be in a position to make an informed judgment. This consideration may come into play in a number of circumstances, such as where the proposal involves intricate detail, or seeks to impose time-frames or methods for implementing complex policies.

The Proposal seeks to impermissibly impose shareholder oversight upon management's ability to run the Company on a day-today basis by attempting to manage the Company's strategy for fuel technology and by requiring it to prepare a burdensome report containing antiquated data, management's strategy regarding increased expenses, and opinions that focus on only one of the many fuel technologies used by the Company. Additionally, the Proposal probes too deeply into the Company's complex business matters by requiring the Company to research and report on underground petroleum production, of which the Company has no business operations. As a result, if the Proposal is implemented, the Company will be forced to reallocate its resources to research and study operations that it does not currently have in its

business plan, i.e., underground petroleum production. The Proposal also requests the Company to report on its strategy to deal with increased gasoline prices in its products and operations. In these ways, the Proposal relates to the Company's ordinary business operations because it attempts to manage the Company's choices in allocation of resources, product technology, strategy, and operations.

The Proposal requests that the Company publish a report that must include the Board of Director's opinions on specific gasoline prices from more than a decade ago and its opinions about specific oil cartels (see Exhibit 1). As reported in the Company's Sustainability Report each year, the Company's products use many different fuel technologies, gasoline being only one of many different fuel technologies used in the Company's products (see Exhibit 4). Among the other technologies the Company uses in its products are electrification technology, biofuel technology, and gaseous fuel technology (see Exhibit 4). Gasoline prices from over a decade ago have little relevance to the Company's fuel technology strategy of today. In addition, the Company's view on oil cartels delves into complex matters of analysis and strategy that is within the purview of management.

The Proposal also seeks to manage the Company's product development process by requesting that the Company use its resources to report on a process used to make a product that the Company does not produce. The Proposal states, "[s]aid report also to include the Board of Director's views on the process of producing petroleum underground and its importance for determining the publicly-disclosed volume of existing reserves of petroleum discovery and production" (see Exhibit 1). The Company does not produce underground petroleum. As reported in Item 1 on page 1 of the Company's most recent Form 10-K Report, the Company manufactures and distributes automotive vehicles and provides financial services through Ford Motor Credit Company (see Exhibit 2). The Proposal requires the Board of Directors to provide its opinions on the process of underground petroleum production, of which the Company does not have first-hand knowledge or experience sufficient to form an opinion about a process for manufacturing such a product. In order to form such an opinion, the Company would need to reallocate its resources to study that production process. In this way, the Proposal seeks to micro-manage the Company by directing it to use its resources to research a complex oil production process that is not within the Company's current business plan.

The Proposal relates to a fundamental aspect of management's ability to run the Company on a day-to-day basis; namely, the Company's strategies for managing its business plan, resources, products, and services. The Proponent seeks to redirect those resources and reprioritize certain of the Company's product strategies to focus on matters not relevant to the Company's business and distract it from matters that *are* in the best interest of the Company. Shareholders, like Proponent, who attempt to participate in such strategic decisions, seek to micro-manage the Company by probing too deeply into matters of a complex nature. Deciding which commodities and products to produce requires management consideration of intricate detail involving data from many different functional areas of the Company's business. Shareholders cannot be expected to possess the expertise to make knowledgeable decisions concerning such matters.

The Staff has permitted the exclusion of proposals that request risk assessments and reporting when the subject matter of the proposal concerns the company's ordinary business of choosing the products and technologies used in its operations. In *Dominion Resources, Inc.* (February 14, 2014), the Staff permitted the exclusion of a proposal as relating to the company's

ordinary business of choosing the technology used in its operations, because the proposal required the company to review one of its energy technologies, solar generation, and to report on the risks of using that technology. The Proponent's proposal, like the proposal in *Dominion Resources, Inc.,* concerns the Company's choice of technology in its vehicle operations because it requests that the Company report its opinion on gasoline prices and production when gasoline is only one of the fuel technologies used by the Company in its products. The Proposal also suggests that the Company become involved with reporting on underground petroleum production operations when the Company does not currently have any business operations in that area. *See also FirstEnergy Corp* (March 7, 2013) (proposal requesting the company to adopt strategies and goals to reduce the company's impact and risks to water quantity and to publish a report on the company's associated progress was excludable as relating to the company's ordinary business operations).

The Proponent's supporting statement indicates that the Proposal is also concerned with the Company's expenses related to rising gasoline costs. The supporting statement provides that it is concerned with "[e]xtra cost (lower profit) of our company's operations due to the price of gasoline from $1 per gallon to $3.50 per gallon in use of vehicles for production of our Ford vehicles, in operations of our Ford dealers, and in transport to our Ford dealers" (see Exhibit 1). The Proposal's supporting statement also indicates that it is concerned about the Company's management of expenses related to "air travel by employees due to price of airline fuels increasing from March 2003 to present" and the cost of "parts and transportation of said parts to Ford facilities due to increased cost of production of parts and increased freight" (see Exhibit 1).

The Staff has allowed proposals to be excluded if they relate to the company's management of its expenses. In *FLIR Systems, Inc.* (February 6, 2013), a proposal that required the company to report its strategies on energy use management was excludable as relating to the company's ordinary business operations because it concerned the manner in which the company managed its expenses. In addition, in *Exxon Mobil Corporation* (March 6, 2012), the Staff concurred in the exclusion of a proposal requesting a report addressing the short and long term risks to the company's finances and operations associated with the environmental, social and economic challenges associated with oil sands production. Clearly, the Proposal's objective is for the Company to report on the cost impact of rising gasoline prices and, thus, falls within the No-Action Letters of *FLIR Systems, Inc.* and *Exxon Mobil Corporation.*

The Proposal, if implemented, would also require the Board of Directors to provide opinions about specific antiquated price data (i.e., from $1 per gallon in March 2003 to $3.50 per gallon) to be published each year prior to July 1st. In this way, the Proposal seeks to micro-manage the Company by forcing it to reallocate resources to analyze decade-old price data, otherwise of no use to the Company's day-to-day operations, and then publish a burdensome report each year, in perpetuity, using the same opinions about the same set of antiquated price data from March 2003 for a fuel technology that is used by only some of the Company's products. In this way, the Proposal involves intricate detail and imposes an antiquated time-frame for the basis of the opinion to be reported. The Staff has permitted the exclusion of a proposal when "the proposal involves intricate detail, or seeks to impose specific time-frames" (*see Exchange Act Release No. 34-40018* (May 21, 1998).

The Staff has consistently allowed the exclusion of proposals, similar to the Proponent's, where proposals related to the company's response to rising costs, product development, and the choice of technology used by the company in its products. Accordingly, it cannot be convincingly argued that the Proposal relates to a significant policy issue that transcends day-to-day business matters, raising policy issues so significant as to be appropriate for a

shareholder vote. The Proposal focuses its concerns on the price and volume of gasoline and a debate as to whether there is a limited or replenishing supply of underground oil. The Proposal's supporting statement provides, "[t]he cost of gasoline is a significant deterrent in the ability of consumers to purchase our Ford vehicle products" (see Exhibit 1). The Proposal's supporting statement also suggests that the cost of gasoline is caused by a debate over whether "there is a limited amount of oil in the world instead of a constantly replenishing supply" (see Exhibit 1). The Proponent clearly is not concerned with any significant policy issue such as the environment or discrimination matters. The Company uses intricate processes to determine the quantity and mix of products for each different type of fuel technology it offers, including government regulation, customer preference, fuel availability and costs, etc. The Proposal attempts to gain insight into the quantity of gasoline fuel technology vehicles produced by the Company compared to other fuel technologies that the Company uses and suggests that the Company is not currently managing its product quantity and mix appropriately. Proposals relating to the management of expenses and the production quantity of the Company's products do not involve the "presence of widespread public debate" (*see Exchange Act Release No. 34-40018* (May 21, 1998)). Consequently, Ford respectfully requests that the Staff concur in the omission of the Proposal from its 2015 Proxy Materials pursuant to Rule 14a-8(i)(7).

The Proposal has been Substantially Implemented

Under rule 14a-8(i)(10), a company may exclude a proposal if it has been substantially implemented by the issuer. To be substantially implemented, a proposal does not have to be "fully effected" (*see Release No. 20091* (August 16, 1983)). In determining whether a proposal has been substantially implemented, the company's policies, practices and procedures should "compare favorably with the guidelines of the proposal". *See Albertson's Inc.* (March 23, 2005); *The Talbots, Inc.* (April 5, 2002); *Cisco Systems, Inc.* (August 11, 2003); and *Texaco, Inc.* (March 28, 1991). Particularly, a proposal is substantially implemented where a company has previously established procedures that relate to the subject matter of the proposal or "essential objectives" of the Proposal.

It is clear from the Proposal itself, and from the supporting information provided in the Proposal, that the underlying concern and essential objectives of the Proposal are to request that the Company be aware of rising gasoline costs and to report on the Company's strategy to address such rising costs. For example, the Proponents supporting statement for the Proposal provides, "[t]he cost of gasoline is a significant deterrent in the ability of consumers to purchase our Ford vehicle products" (see Exhibit 1).

The Company has implemented annual reporting practices that substantially address the Proponent's underlying concern and the essential objectives of the Proposal. The Company's Annual Report on Form 10-K identifies key economic factors and trends that may impact the Company, including price increases to certain commodity and energy sources such as gasoline. Furthermore, the Company's Sustainability Report 2013/14 describes its general product plan and strategy in response to certain economic factors such as fuel costs. The Company's full Sustainability Report 2013/14 can be accessed through the Company's website at: http://corporate.ford.com/microsites/sustainability-report-2013-14/default.html. In summary, the Company has substantially implemented the reporting requested in the Proposal through the following reports, collectively "Ford's Reports":

1. Item 7 of the Company's Annual Report on Form 10-K at page 34 entitled "Commodity and Energy Price Increases" (see Exhibit 3); and

2. The Company's Sustainability Report 2013/14 containing discussions on the Company's plan with regard to the following:

   (a) Fuel (see Exhibit 4);
   (b) Future Competitiveness (see Exhibit 5).
   (c) Sustainable Technologies and Alternative Fuels Plan (see Exhibit 6)

1. The Company's Annual Report on Form 10-K Reports the Company's Awareness of Commodity and Energy Prices Such As Gasoline

The Proposal requests that each year the Company file a report with its opinion on the "increase in the price of gasoline from about $1 per gallon in March 2003 to about $3.50 per gallon" (see Exhibit 1). The Company already reports current gasoline prices and its opinion about future prices, among other things, in Item 7 of the Company's Annual Report on Form 10-K ("10-K") entitled "*Commodity and Energy Price Increases*" filed with the Commission. In this section of the Company's 10-K for the year-ended December 31, 2013, the Company stated, "[d]espite weak demand conditions, light sweet crude oil prices increased from an average of $79 per barrel in 2010 to $95 per barrel in 2011, before declining slightly to about $94 per barrel in late 2012. In 2013, oil prices rose slightly to $98 per barrel" (see Exhibit 3). The Company also provided its opinion about future prices when it stated, "[c]ommodity prices have declined recently, but over the longer term prices are likely to trend higher given global demand growth" (see Exhibit 3). The Proposal requests a report containing opinions on oil prices from March 2003, which are antiquated. As shown, the Company has substantially implemented the essential objectives of the Proposal by reporting current, relevant oil prices in its 10-K and using those relevant prices to project an opinion about future prices which could impact the business.

2. The Company Reports Its Different Fuel Technologies, Future Competitiveness, and Plans for Gasoline Fuel Alternatives in its Sustainability Report.

It is clear from the Proposal and from its supporting information that the underlying concern and essential objective of the Proposal is to request that the Company be aware of rising gasoline costs and to report the Company's plan to address such rising costs. For example, the Proposal's supporting statement contains the following concerns:

- "The cost of gasoline is a significant deterrent in the ability of consumers to purchase our Ford vehicle products" (see Exhibit 1).
- "Extra cost (lower profit) of our company's operations due to the price of gasoline from $1 per gallon to $3.50 per gallon in use of vehicles for production of our Ford vehicles, in operations of our Ford dealers, and in transport to our Ford dealers" (see Exhibit 1).
- "Extra cost (lower profit) of our suppliers for parts and transportation of said parts to Ford facilities due to increased cost of production of parts and increased freight to Ford facilities" (see Exhibit 1).
- "Extra cost (lower profit) for air travel by employees due to price of airline fuels increasing from March 2003 to present" (Exhibit 1).

The Company has already addressed the Proponent's reporting concerns about the cost of gasoline in the Company's discussions on Fuel, Future Competitiveness, and Sustainability

Technologies and Alternative Fuel Plans contained in its Sustainability Report 2013/14 (see Exhibits 4, 5, and 6, respectively). These discussions report the Company's plan for different fuel technologies to address rising costs and customer demands.

The Company's Fuel Discussion within it is Sustainability Report 2013/14 discusses the Company's use of alternative fuels to gasoline such as electrification, biofuels, and compressed natural gas and liquefied petroleum gas (see Exhibit 4). In the Company's Future Competitiveness discussion of its Sustainability Report 2013/14, the Company discusses how it intends to remain competitive with considering such things as consumer trends, business risks (including costs), and materials (see Exhibit 5). The Company's report on Sustainable Technologies and Alternative Fuels Plan within its Sustainability Report 2013/14 also outlines the Company's plan to use alternative fuel technologies in its vehicles, how it is improving fuel technology in other ways such as weight reduction and aerodynamics, and descriptions of certain products that use the alternative fuel technologies (see Exhibit 6).

Ford's Reports substantially implement the subject matter of the Proposal. While Ford has not adopted the Proposal word-for-word, it has addressed the Proposal's underlying concern and essential objectives (i.e., reporting the Company's awareness of gasoline prices and to report the Company's plan to address rising costs of gasoline). *See Peabody Energy Corporation* (February 25, 2014) (permitting exclusion of a proposal that requested the company to be more active in the war on coal being conducted by the Obama Administration where the company already engaged in lobbying and other efforts to address regulations pertaining to the coal industry); *Talbots, Inc.* (April 5, 2002) (permitting omission of a proposal that required the establishment of a code of corporate conduct regarding human rights because the company had an existing Standard for Business Practice and Code of Conduct); and *The Gap, Inc.* (March 16, 2001) (permitting omission of a proposal that requested a report on child labor practices of the company's vendors because the company had already established a code of vendor conduct, monitored vendor compliance and published the related information). Consequently, Ford respectfully requests the Staff's concurrence in the omission of the Proposal as being substantially implemented pursuant to Rule 14a-8(i)(10).

Conclusion

For the foregoing reasons, it is respectfully submitted that the Proposal may be excluded from Ford's 2015 Proxy Materials. Your confirmation that the Staff will not recommend enforcement action if the Proposal is omitted from the 2015 Proxy Materials is respectfully requested.

In accordance with Rule 14a-8(j), the Proponent is being informed of the Company's intention to omit the Proposal from its 2015 Proxy Materials by sending him a copy of this letter and its exhibits.

If you have any questions, require further information, or wish to discuss this matter, please call me (313-337-3913) or Bradley Gayton (313-323-2513).

Very truly yours,

Jerome F. Zaremba

Enclosure
Exhibits
cc: Mr. Carl Olson

EXHIBIT 1

OFFICE OF THE SECRETARY
BRADLEY M. GAYTON

Carl Olson

'14 NOV 10 A8:04

*** FISMA & OMB Memorandum M-07-16 ***

November 8, 2014

By facsimile: 313-248-8713

Secretary
Ford Motor Company

Dear Secretary:

As a stockholder of Ford Motor Company with 237.4087 shares, which I have held for a year previous to the date of this letter, I am hereby submitting the attached resolution for the 2015 annual meeting.

Carl Olson Carl Olson

Be it resolved by the stockholders to recommend the board of directors adopt the
following proposal:

"The Board of Directors shall publish on its website and in print version every year prior to July 1 following the adoption of this resolution a report to the stockholders titled 'Report on Effect of Oil Cartel on Business Products, and on Production Process of Oil'. Said report to discuss the Board of Director's view of the effect of the oil cartel, including the Organization of Petroleum Exporting Countries and Russia, on the increase in the price of gasoline from about $1 per gallon in March 2003 to about $3.50 per gallon. Said report also to include the Board of Director's views on the process of producing petroleum underground and its importance for determining the publicly-disclosed volume of existing reserves of petroleum discovery and production. The Board of Directors may also include any further discussion on related facts and estimates as it deems relevant."

Supporting statement:

"The cost of gasoline is a significant deterrent in the ability of consumers to purchase our Ford vehicle products. For instance, in the United States the added cost per month of the price of gasoline going from $1 per gallon to $3.50 could easily be about $400 per consumer. This is based on a vehicle with 50,000 miles per year, 30 miles per gallon of gas, and $2.50 added per gallon of gasoline. (50,000 miles/30 miles per gallon X $2.50 price increase) This added $400 per month takes away much ability to buy or lease one of our vehicles, and encourages the keeping of older cars.

---Extra cost (lower profit) of our company's operations due to the price of gasoline from $1 per gallon to $3.50 in use of vehicles for production of our Ford vehicles, in operations of our Ford dealers, and in transport to our ford dealers.

EXHIBIT 1

---Extra cost (lower profit) of our suppliers for parts and transportation of said parts to Ford facilities due to increased cost of production of parts and increased freight to Ford facilities.

---Extra cost (lower profit) for air travel by employees due to price of airline fuels increasing from March 2003 to present.

Much public discussion calls oil as a "fossil fuel", similar to coal. To be a 'fossil fuel' it needs to be produced by an accumulation of vegetation or animal remains many millions of years ago. As a matter of fact, no fossils are found that oil is produced the same way. Rather it is constantly being formed deep underground by its own process of heat, pressure, and chemicals. The book "The Great Oil Conspiracy" by Dr. Jerome Corsi details this fact and points out why oil companies want the public to think that there is a limited amount of oil in the world instead of a constantly replenishing supply.

Your Yes vote will help to be informed of these profit-related items.

Office of the General Counsel
Phone: 313/3373913
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E-Mail: jzaremb1@ford.com

Ford Motor Company
One American Road
Room 1037-A3 WHQ
Dearborn, Michigan 48126

November 13, 2014

Mr. Carl Olson

*** FISMA & OMB Memorandum M-07-16 ***

Re: Shareholder Proposal for 2015 Annual Meeting

Dear Mr. Olson:

Ford Motor Company ("Ford" or the "Company") hereby acknowledges the shareholder proposal received by our offices on November 10, 2014. You request that the proposal relating to the Board of Directors publishing a report to stockholders titled: "Report on Effect of Oil Cartel on Business Products, and on Production Process of Oil" (the "Proposal") be included in the Company's proxy materials for the 2015 Annual Meeting of Shareholders.

Eligibility requirements regarding stockholder proposals are set forth in Rule 14a-8 of the rules of the United States Securities and Exchange Commission (the "SEC"). (A copy of Rule 14a-8 is enclosed.) Under Rule 14a-8(b)(1), in order to be eligible to submit a proposal, a shareholder must have continuously held at least $2,000 in market value, or 1%, of the Company's securities entitled to be voted at the annual meeting for at least one year by the date the shareholder submitted the proposal. In the event the shareholder is not a registered holder, Rule 14a-8(b)(2) provides that proof of eligibility should be submitted at the time the proposal is submitted. Neither the Company nor its transfer agent was able to confirm that you satisfy the eligibility requirements based on the information that was furnished to the Company.

We request that, pursuant to Rule 14a-8, you furnish to the Company proper documentation demonstrating (i) that you are the beneficial owner of at least $2,000 in market value, or 1%, of Ford common stock, and (ii) that you have been the beneficial owner of such securities for one or more years. We request that such documentation be furnished to the Company within 14 calendar days of your receipt of this letter. Under Rule 14a-8(b)(2) a shareholder may satisfy this requirement by either (i) submitting to the Company a written statement from the "record" holder of the shareholder's securities (usually a broker or bank) verifying that, at the time of submission, the shareholder continuously held the securities at least one year, or (ii) if the shareholder has filed a Schedule 13D, Schedule 13G, Form 3, Form 4 and/or Form 5, or amendments to those documents or updated forms, reflecting the shareholder's ownership of the shares as of or before the date on which the one-year period begins. If the shareholder has filed one of these documents, he may demonstrate his eligibility by submitting to the Company a copy of the schedule or form, and any subsequent amendments, and a written statement that the shareholder continuously held the required number of shares for the one-year period as of the date of the statement.

If you would like to discuss the SEC rules regarding stockholder proposals or anything else relating to the Proposal, please contact me at (313) 337-3913. Thank you for your interest in the Company.

Very truly yours,

Jerome F. Zaremba
Counsel

Enclosure

cc: Bradley M. Gayton

chosen, the costs of that method should be [illegible] where necessary rather than the costs of mailing.

Note 2 to § 240.14a-7. When providing the notification required by § 240.14a-7(a)(1)(ii), if the registrant has received affirmative written or implied consent to delivery of a single copy of proxy materials to a shared address in accordance with § 240.14a-3(e)(1), it shall exclude from the number of record holders those to whom it does not have to deliver a separate proxy statement.

Rule 14a-8. Shareholder Proposals.

This section addresses when a company must include a shareholder's proposal in its proxy statement and identify the proposal in its form of proxy when the company holds an annual or special meeting of shareholders. In summary, in order to have your shareholder proposal included on a company's proxy card, and included along with any supporting statement in its proxy materials, you must be eligible and follow certain procedures. Under a few specific circumstances, the company is permitted to exclude your proposal, but only after submitting its reasons to the Commission. We structured this section in a question-and-answer format so that it is easier to understand. The references to "you" are to a shareholder seeking to submit the proposal.

(a) Question 1: What is a proposal?

A shareholder proposal is your recommendation or requirement that the company and/or its board of directors take action, which you intend to present at a meeting of the company's shareholders. Your proposal should state as clearly as possible the course of action that you believe the company should follow. If your proposal is placed on the company's proxy card, the company must also provide in the form of proxy means for shareholders to specify by boxes a choice between approval or disapproval, or abstention. Unless otherwise indicated, the word "proposal" as used in this section refers both to your proposal, and to your corresponding statement in support of your proposal (if any).

(b) Question 2: Who is eligible to submit a proposal, and how do I demonstrate to the company that I am eligible?

(1) In order to be eligible to submit a proposal, you must have continuously held at least $2,000 in market value, or 1% of the company's securities entitled to be voted on the proposal at the meeting for at least one year by the date you submit the proposal. You must continue to hold those securities through the date of the meeting.

(2) If you are the registered holder of your securities, which means that your name appears in the company's records as a shareholder, the company can verify your eligibility on its own, although you will still have to provide the company with a written statement that you intend to continue to hold the securities through the date of the meeting of shareholders. However, if like many shareholders, you are not a registered holder, the company likely does not know that you are a shareholder, or how many shares you own. In this case, at the time you submit your proposal, you must prove your eligibility to the company in one of two ways:

(i) The first way is to submit to the company a written statement from the "record" holder of your securities (usually a broker or bank) verifying that, at the time you submitted your proposal, you continuously held the securities for at least one year. You must also include your own written statement that you intend to continue to hold the securities through the date of the meeting of shareholders, or

(ii) The second way to prove ownership applies only if you have filed a Schedule 13D, Schedule 13G, Form 3, Form 4 and/or Form 5, or amendments to those documents or updated forms, reflecting your ownership of the shares as of or before the

date on which the one-year eligibility period begins. If you have filed one of these documents with the SEC, you may demonstrate your eligibility by submitting to the company:

(A) A copy of the schedule and/or form, and any subsequent amendments reporting a change in your ownership level;

(B) Your written statement that you continuously held the required number of shares for the one-year period as of the date of the statement; and

(C) Your written statement that you intend to continue ownership of the shares through the date of the company's annual or special meeting.

(c) Question 3: How many proposals may I submit?

Each shareholder may submit no more than one proposal to a company for a particular shareholders' meeting.

(d) Question 4: How long can my proposal be?

The proposal, including any accompanying supporting statement, may not exceed 500 words.

(e) Question 5: What is the deadline for submitting a proposal?

(1) If you are submitting your proposal for the company's annual meeting, you can in most cases find the deadline in last year's proxy statement. However, if the company did not hold an annual meeting last year, or has changed the date of its meeting for this year more than 30 days from last year's meeting, you can usually find the deadline in one of the company's quarterly reports on Form 10-Q (§ 249.308a of this chapter), or in shareholder reports of investment companies under § 270.30d-1 of this chapter of the Investment Company Act of 1940. In order to avoid controversy, shareholders should submit their proposals by means, including electronic means, that permit them to prove the date of delivery.

(2) The deadline is calculated in the following manner if the proposal is submitted for a regularly scheduled annual meeting. The proposal must be received at the company's principal executive offices not less than 120 calendar days before the date of the company's proxy statement released to shareholders in connection with the previous year's annual meeting. However, if the company did not hold an annual meeting the previous year, or if the date of this year's annual meeting has been changed by more than 30 days from the date of the previous year's meeting, then the deadline is a reasonable time before the company begins to print and send its proxy materials.

(3) If you are submitting your proposal for a meeting of shareholders other than a regularly scheduled annual meeting, the deadline is a reasonable time before the company begins to print and send its proxy materials.

(f) Question 6: What if I fail to follow one of the eligibility or procedural requirements explained in answers to Questions 1 through 4 of this Rule 14a-8?

(1) The company may exclude your proposal, but only after it has notified you of the problem, and you have failed adequately to correct it. Within 14 calendar days of receiving your proposal, the company must notify you in writing of any procedural or eligibility deficiencies, as well as of the time frame for your response. Your response must be postmarked, or transmitted electronically, no later than 14 days from the date you received the company's notification. A company need not provide you such notice of a deficiency if the deficiency cannot be remedied, such as if you fail to submit a proposal by the company's properly determined deadline. If the company intends to

(i) Less than 10% of the vote if proposed once within the preceding 5 calendar years;

(ii) Less than 6% of the vote on its last submission to shareholders if proposed twice previously within the preceding 5 calendar years; or

(iii) Less than 10% of the vote on its last submission to shareholders if proposed three times or more previously within the preceding 5 calendar years; and

(13) *Specific Amount of Dividends:* If the proposal relates to specific amounts of cash or stock dividends.

(j) Question 10: What procedures must the company follow if it intends to exclude my proposal?

(1) If the company intends to exclude a proposal from its proxy materials, it must file its reasons with the Commission no later than 80 calendar days before it files its definitive proxy statement and form of proxy with the Commission. The company must simultaneously provide you with a copy of its submission. The Commission staff may permit the company to make its submission later than 80 days before the company files its definitive proxy statement and form of proxy, if the company demonstrates good cause for missing the deadline.

(2) The company must file six paper copies of the following:

(i) The proposal;

(ii) An explanation of why the company believes that it may exclude the proposal, which should, if possible, refer to the most recent applicable authority, such as prior Division letters issued under the rule; and

(iii) A supporting opinion of counsel when such reasons are based on matters of state or foreign law.

(k) Question 11: May I submit my own statement to the Commission responding to the company's arguments?

Yes, you may submit a response, but it is not required. You should try to submit any response to us, with a copy to the company, as soon as possible after the company makes its submission. This way, the Commission staff will have time to consider fully your submission before it issues its response. You should submit six paper copies of your response.

(l) Question 12: If the company includes my shareholder proposal in its proxy materials, what information about me must it include along with the proposal itself?

(1) The company's proxy statement must include your name and address, as well as the number of the company's voting securities that you hold. However, instead of providing that information, the company may instead include a statement that it will provide the information to shareholders promptly upon receiving an oral or written request.

(2) The company is not responsible for the contents of your proposal or supporting statement.

(m) Question 13: What can I do if the company includes in its proxy statement reasons why it believes shareholders should not vote in favor of my proposal, and I disagree with some of its statements?

(1) The company may elect to include in its proxy statement reasons why it believes shareholders should vote against your proposal. The company is allowed to make

arguments reflecting its own point of view, just as you may express your own point of view in your proposal's supporting statement.

(2) However, if you believe that the company's opposition to your proposal contains materially false or misleading statements that may violate our anti-fraud rule, Rule 14a-9, you should promptly send to the Commission staff and the company a letter explaining the reasons for your view, along with a copy of the company's statements opposing your proposal. To the extent possible, your letter should include specific factual information demonstrating the inaccuracy of the company's claims. Time permitting, you may wish to try to work out your differences with the company by yourself before contacting the Commission staff.

(3) We require the company to send you a copy of its statements opposing your proposal before it sends its proxy materials, so that you may bring to our attention any materially false or misleading statements, under the following timeframes:

(i) If our no-action response requires that you make revisions to your proposal or supporting statement as a condition to requiring the company to include it in its proxy materials, then the company must provide you with a copy of its opposition statements no later than 5 calendar days after the company receives a copy of your revised proposal, or

(ii) In all other cases, the company must provide you with a copy of its opposition statements no later than 30 calendar days before it files definitive copies of its proxy statement and form of proxy under Rule 14a-6.

Rule 14a-9. False or Misleading Statements.

(a) No solicitation subject to this regulation shall be made by means of any proxy statement, form of proxy, notice of meeting or other communication, written or oral, containing any statement which, at the time and in the light of the circumstances under which it is made, is false or misleading with respect to any material fact, or which omits to state any material fact necessary in order to make the statements therein not false or misleading or necessary to correct any statement in any earlier communication with respect to the solicitation of a proxy for the same meeting or subject matter which has become false or misleading.

(b) The fact that a proxy statement, form of proxy or other soliciting material has been filed with or examined by the Commission shall not be deemed a finding by the Commission that such material is accurate or complete or not false or misleading, or that the Commission has passed upon the merits of or approved any statement contained therein or any matter to be acted upon by security holders. No representation contrary to the foregoing shall be made.

(c) No nominee, nominating shareholder or nominating shareholder group, or any member thereof, shall cause to be included in a registrant's proxy materials, either pursuant to the Federal proxy rules, an applicable state or foreign law provision, or a registrant's governing documents as they relate to including shareholder nominees for director in a registrant's proxy materials, include in a notice on Schedule 14N (§ 240.14a-101), or include in any other related communication, any statement which, at the time and in the light of the circumstances under which it is made, is false or misleading with respect to any material fact, or which omits to state any material fact necessary in order to make the statements therein not false or misleading or necessary to correct any statement in any earlier communication with respect to a solicitation for the same meeting or subject matter which has become false or misleading.

Note. The following are some examples of what, depending upon particular facts and circumstances, may be misleading within the meaning of this section:

exclude the proposal, it will later have to make a submission under Rule 14a-8 and provide you with a copy of its *Question 10* below, Rule 14a-8(j).

(2) If you fail in your promise to hold the required number of securities through the date of the meeting of shareholders, then the company will be permitted to exclude all of your proposals from its proxy materials for any meeting held in the following two calendar years.

(g) **Question 7: Who has the burden of persuading the Commission or its staff that my proposal can be excluded?**

Except as otherwise noted, the burden is on the company to demonstrate that it is entitled to exclude a proposal.

(h) **Question 8: Must I appear personally at the shareholders' meeting to present the proposal?**

(1) Either you, or your representative who is qualified under state law to present the proposal on your behalf, must attend the meeting to present the proposal. Whether you attend the meeting yourself or send a qualified representative to the meeting in your place, you should make sure that you, or your representative, follow the proper state law procedures for attending the meeting and/or presenting your proposal.

(2) If the company holds its shareholder meeting in whole or in part via electronic media, and the company permits you or your representative to present your proposal via such media, then you may appear through electronic media rather than traveling to the meeting to appear in person.

(3) If you, or your qualified representative, fail to appear and present the proposal, without good cause, the company will be permitted to exclude all of your proposals from its proxy materials for any meetings held in the following two calendar years.

(i) **Question 9: If I have complied with the procedural requirements, on what other bases may a company rely to exclude my proposal?**

(1) *Improper Under State Law:* If the proposal is not a proper subject for action by shareholders under the laws of the jurisdiction of the company's organization;

Note to Paragraph (i)(1): Depending on the subject matter, some proposals are not considered proper under state law if they would be binding on the company if approved by shareholders. In our experience, most proposals that are cast as recommendations or requests that the board of directors take specified action are proper under state law. Accordingly, we will assume that a proposal drafted as a recommendation or suggestion is proper unless the company demonstrates otherwise.

(2) *Violation of Law:* If the proposal would, if implemented, cause the company to violate any state, federal, or foreign law to which it is subject;

Note to Paragraph (i)(2): We will not apply this basis for exclusion to permit exclusion of a proposal on grounds that it would violate foreign law if compliance with the foreign law would result in a violation of any state or federal law.

(3) *Violation of Proxy Rules:* If the proposal or supporting statement is contrary to any of the Commission's proxy rules, including Rule 14a-9, which prohibits materially false or misleading statements in proxy soliciting materials;

(4) *Personal Grievance; Special Interest:* If the proposal relates to the redress of a personal claim or grievance against the company or any other person, or if it is designed

to result in a benefit to you, or to further a personal interest, which is not shared by the other shareholders at large;

(5) *Relevance:* If the proposal relates to operations which account for less than 5 percent of the company's total assets at the end of its most recent fiscal year, and for less than 5 percent of its net earnings and gross sales for its most recent fiscal year, and is not otherwise significantly related to the company's business;

(6) *Absence of Power/Authority:* If the company would lack the power or authority to implement the proposal;

(7) *Management Functions:* If the proposal deals with a matter relating to the company's ordinary business operations;

(8) *Director Elections:* If the proposal:

(i) Would disqualify a nominee who is standing for election;

(ii) Would remove a director from office before his or her term expired;

(iii) Questions the competence, business judgment, or character of one or more nominees or directors;

(iv) Seeks to include a specific individual in the company's proxy materials for election to the board of directors; or

(v) Otherwise could affect the outcome of the upcoming election of directors.

(9) *Conflicts with Company's Proposal:* If the proposal directly conflicts with one of the company's own proposals to be submitted to shareholders at the same meeting.

Note to Paragraph (i)(9): A company's submission to the Commission under this Rule 14a-8 should specify the points of conflict with the company's proposal.

(10) *Substantially Implemented:* If the company has already substantially implemented the proposal;

Note to Paragraph (i)(10): A company may exclude a shareholder proposal that would provide an advisory vote or seek future advisory votes to approve the compensation of executives as disclosed pursuant to Item 402 of Regulation S-K (§ 229.402 of this chapter) or any successor to Item 402 (a "say-on-pay vote") or that relates to the frequency of say-on-pay votes, provided that in the most recent shareholder vote required by § 240.14a-21(b) of this chapter a single year (i.e., one, two, or three years) received approval of a majority of votes cast on the matter and the company has adopted a policy on the frequency of say on-pay votes that is consistent with the choice of the majority of votes cast in the most recent shareholder vote required by § 240.14a-21(b) of this chapter.

(11) *Duplication:* If the proposal substantially duplicates another proposal previously submitted to the company by another proponent that will be included in the company's proxy materials for the same meeting.

(12) *Resubmissions:* If the proposal deals with substantially the same subject matter as another proposal or proposals that has or have been previously included in the company's proxy materials within the preceding 5 calendar years, a company may exclude it from its proxy materials for any meeting held within 3 calendar years of the last time it was included if the proposal received

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Ford Motor Company
One American Road
Room 1037-A3 WHQ
Dearborn, Michigan 48126

December 1, 2014

Mr. Carl Olson

*** FISMA & OMB Memorandum M-07-16 ***

Re: Proposal for 2015 Annual Meeting

Dear Mr. Olson:

Ford Motor Company ("Ford" or the "Company") hereby acknowledges receipt of evidence of share ownership of Ford common stock contained in your facsimile correspondence dated November 25, 2014. Thank you for your attention to this matter. Please note that Ford reserves the right to file a No-Action Letter with the SEC should substantive grounds exist for exclusion of the Proposal. We will notify you in accordance with SEC rules if we file such a request.

Thank you for your continued interest in the Company.

Very truly yours,

Jerome F. Zaremba
Counsel

cc: Bradley M. Gayton

EXHIBIT 2

PART I.

ITEM 1. *Business.*

Ford Motor Company was incorporated in Delaware in 1919. We acquired the business of a Michigan company, also known as Ford Motor Company, which had been incorporated in 1903 to produce and sell automobiles designed and engineered by Henry Ford. We are a global automotive industry leader based in Dearborn, Michigan. We manufacture or distribute automobiles across six continents. With about 181,000 employees and 65 plants worldwide, our automotive brands include Ford and Lincoln. We provide financial services through Ford Motor Credit Company.

In addition to the information about Ford and our subsidiaries contained in this Annual Report on Form 10-K for the year ended December 31, 2013 ("2013 Form 10-K Report" or "Report"), extensive information about our Company can be found at http://corporate.ford.com, including information about our management team, our brands and products, and our corporate governance principles.

The corporate governance information on our website includes our Corporate Governance Principles, Code of Ethics for Senior Financial Personnel, Code of Ethics for the Board of Directors, Code of Corporate Conduct for all employees, and the Charters for each of the Committees of our Board of Directors. In addition, any amendments to our Code of Ethics or waivers granted to our directors and executive officers will be posted in this area of our website. All of these documents may be accessed by going to our corporate website and clicking on "Our Company," then "Corporate Governance," and then "Corporate Governance Policies," or may be obtained free of charge by writing to our Shareholder Relations Department, Ford Motor Company, One American Road, P.O. Box 1899, Dearborn, Michigan 48126-1899.

In addition, all of our recent periodic report filings with the Securities and Exchange Commission ("SEC") pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge through our website. This includes recent Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, as well as any amendments to those Reports. Recent Section 16 filings made with the SEC by the Company or any of our executive officers or directors with respect to our Common Stock also are made available free of charge through our website. We post each of these documents on our website as soon as reasonably practicable after it is electronically filed with the SEC.

To access our SEC reports or amendments or the Section 16 filings, go to our corporate website and click "Our Company," then "Investor Relations," then "Reports and SEC Filings," and then "SEC Filings," which links to a list of reports filed with the SEC. Our reports filed with the SEC also may be found on the SEC's website at www.sec.gov.

The foregoing information regarding our website and its content is for convenience only and not deemed to be incorporated by reference into this Report nor filed with the SEC.

Pricing Pressure. Excess capacity, coupled with a proliferation of new products being introduced in key segments, will keep pressure on manufacturers' ability to increase prices. In North America, the industry restructuring of the past few years has allowed manufacturers to better match production with demand, although Japanese and Korean manufacturers also have capacity (located outside of the region) directed to North America. In the future, Chinese and Indian manufacturers are expected to enter U.S. and European markets, further intensifying competition. Although there has been a modest increase in new vehicle pricing in the U.S. market during 2013, it seems likely that over the long term intense competition and excess capacity will continue to put downward pressure on inflation-adjusted prices for similarly-contented vehicles in the United States and contribute to a challenging pricing environment for the automotive industry. In Europe, the excess capacity situation was exacerbated by weakening demand and the lack of reductions in existing capacity, such that negative pricing pressure is expected to continue for the foreseeable future.

Commodity and Energy Price Increases. Despite weak demand conditions, light sweet crude oil prices increased from an average of $79 per barrel in 2010 to $95 per barrel in 2011, before declining slightly to about $94 per barrel in late 2012. In 2013, oil prices rose slightly to $98 per barrel. Commodity prices have declined recently, but over the longer term prices are likely to trend higher given global demand growth.

Vehicle Profitability. Our financial results depend on the profitability of the vehicles we sell, which may vary significantly by vehicle line. In general, larger vehicles tend to command higher prices and be more profitable than smaller vehicles, both across and within vehicle segments. For example, in North America, our larger, more profitable vehicles had an average contribution margin that was about 130% of our total average contribution margin across all vehicles, whereas our smaller vehicles had significantly lower contribution margins. As we execute our One Ford plan, we are working to create best-in-class vehicles on global platforms that contribute higher margins, and offering a more balanced portfolio of vehicles with which we aim to be among the leaders in fuel efficiency in every segment in which we compete.

Increasing Sales of Smaller Vehicles. Like other manufacturers, we are increasing our participation in newly-developed and emerging markets, such as Brazil, Russia, India, and China, in which vehicle sales are expected to increase at a faster rate than in most mature markets. The largest segments in these markets are small vehicles (i.e., Sub-B, B, and C segments). To increase our participation in these fast-growing markets, we are significantly increasing our production capacity, directly or through joint ventures. In addition, we expect that increased demand for smaller, more fuel-efficient vehicles will continue in the mature markets of North America and Europe and, consequently, we have seen and expect in the future strong demand in those markets for our small car offerings (including our new Ford Fiesta and Focus models that are based on global platforms). Although we expect positive contribution margins from higher small vehicle sales, one result of increased production of small vehicles may be that, over time, our average per unit margin decreases because small vehicles tend to have lower margins than medium and large vehicles.

Trade Policy. To the extent governments in various regions erect or intensify barriers to imports, or implement currency policy that advantages local exporters selling into the global marketplace, there can be a significant negative impact on manufacturers based in markets that promote free trade. While we believe the long-term trend is toward the growth of free trade, we have noted with concern recent developments in a number of regions. In Asia Pacific Africa, for example, the recent dramatic depreciation of the yen significantly reduces the cost of exports into the United States, Europe, and other global markets by Japanese manufacturers. Over a period of time, the emerging weakness of the yen can contribute to other countries pursuing weak currency policies by intervening in the exchange rate markets. This is particularly likely in other Asian countries, such as South Korea. As another example, government actions in South America to incentivize local production and balance trade are driving trade frictions between South American countries and also with Mexico, resulting in business environment instability and new trade barriers. We will continue to monitor and address developing issues around trade policy.

Other Economic Factors. The eventual implications of higher government deficits and debt, with potentially higher long-term interest rates, could drive a higher cost of capital over our planning period. Higher interest rates and/or taxes to address the higher deficits also may impede real growth in gross domestic product and, therefore, vehicle sales over our planning period.

For additional information on our assessment of the business environment, refer to the "Outlook" section below.

EXHIBIT 4

Climate Change and the Environment

Overview

Climate Change

Greening Our Products

Life Cycle Analysis

Sustainable Technologies and Alternative Fuels Plan

Vehicle Fuel Efficiency and CO_2 Emissions Progress and Performance

Vehicle

Fuel

Driver

Non-CO_2 Tailpipe Emissions

Sustainable Materials

Electrification: A Closer Look

Greening Our Operations

Data

Case Study: Ford Fleet Purchase Planner

Voice: John Fleming

Fuel

On this page

Electrification
Biofuels
Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG or propane autogas)

Improving fuel economy alone will not reduce life cycle greenhouse gas (GHG) emissions to the levels required for carbon dioxide (CO_2) stabilization. We also need fuels with lower fossil carbon content[1], including biofuels, electricity, and gaseous fuels such as compressed natural gas (CNG), liquefied petroleum gas (LPG), and hydrogen. Ford cannot increase alternative fuel use simply by offering vehicles that can use these fuels. Widespread use of these fuels will also require significant efforts by fuel and energy providers, including continued development of the fuels themselves and considerable updating or expansion of refueling infrastructure. Government action will also be required to facilitate the adoption of common standards for fuel quality and refueling infrastructure, as well as measures such as tax incentives to encourage manufacturers to produce the fuels and consumers to use them.

In this section, we briefly discuss fuel alternatives Ford is currently implementing commercially: electrification, biofuels, and two gaseous fuels, compressed natural gas (CNG) and liquefied petroleum gas (LNG, or propane autogas). For more information on how Ford is developing and rolling out vehicles and powertrains that use these fuels, please see Sustainable Technologies and Alternative Fuels Plan.

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Electrification

Electrification addresses both energy security and climate change concerns, because electricity can be made from a wide variety of fuels, including domestic sources and renewable energy.

Ford foresees a future that includes a variety of electrified and traditional vehicles, something we call "power of choice." We are electrifying existing, traditional vehicle lines rather than creating unique electrified vehicle models. That way, our customers can choose from a variety of vehicle powertrains, including efficient gasoline engines, hybrid electric vehicles, plug-in hybrids and full-battery electric vehicles. Our comprehensive electrification strategy touches all aspects of the electrification ownership experience, seeking to make it engaging, empowering and easy to live with.

For more information on Ford's approach to electrified vehicles, as well as issues associated with using electricity as a vehicle fuel, please see Electrification: A Closer Look. For more information on the hybrid electric, plug-in hybrid and battery electric vehicles we have launched or plan to launch, please see the Sustainable Technologies and Alternative Fuels Plan.

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Biofuels

Biofuels are a key piece of our blueprint for sustainability to reduce CO_2. While current corn-based ethanol production in the U.S. is estimated to provide a modest (approximately 20 percent) reduction in vehicle GHG emissions on a well-to-wheels basis, next-generation biofuels such as lignocellulosic bioethanol could offer up to a 90 percent GHG reduction benefit.[2] Consistent with consumer demand, Ford will continue to provide a range of products designed to run on a wide range of ethanol blends. Flexible fuel vehicles (FFVs) provide fuel choice to consumers when the fuel

is available and are necessary to transition to advanced alternative fuels.

We believe that the use of biofuels may increase from a current level of approximately 2 to 3 percent globally to 10 to 30 percent of global liquid road-transportation fuel over the next few decades. We are conducting research and development to ensure that our vehicles will be compatible with and able to incorporate the full benefits of biofuels. Our current work focuses on the two biofuels that are available at a commercial scale: ethanol and biodiesel. Biofuel use has been expanding globally. Bioethanol (frequently called just ethanol) is made from corn, beets or sugar cane and substitutes for gasoline. Biodiesel is derived from plant oils and substitutes for diesel fuel. In the U.S. in 2007, federal legislation expanded the Renewable Fuel Standard (RFS), mandating a significant increase in the use of biofuels by 2022.

The following describes issues and challenges associated with expanding the use of biofuels in vehicles.

Current Generation Biofuels

The U.S. and Brazil are the world's largest producers of ethanol, which is made from the fermentation of sugars. In the U.S. the sugar is typically derived via the hydrolysis of corn starch, while in Brazil the sugar is obtained directly from sugar cane. Ethanol is primarily used in blends with gasoline. Hydrous ethanol, which is approximately 95 percent ethanol and 5 percent water, is also used in Brazil. Blends are identified using the volumetric content of ethanol, which is specified numerically after the letter "E" for ethanol. For example, E10 is 10 percent by volume ethanol and 90 percent petroleum gasoline. Most automotive fuel supplied in the U.S. is E10. The U.S. Environmental Protection Agency (EPA) has recently issued a waiver permitting E15 to be sold in the U.S. for use in 2001 or newer model year vehicles. Our position regarding E15 is discussed in the Renewable Fuels Policy section.

An important benefit of ethanol is its higher octane rating, which can improve the efficiency and torque of today's high-efficiency internal combustion gas engines. We developed a new fundamental molecular approach to calculating the octane increase provided by ethanol blended into gasoline, which is more accurate than previous approaches.[3,4] The octane rating of a fuel is a critical fuel property that describes its resistance to "knock," which results from early or uncontrolled fuel ignition. To avoid "knocking," the compression ratios designed into engines are limited by the lowest expected octane rating of available fuels. However, engines operate at higher thermal efficiency when they can be operated at higher compression ratios using appropriate higher-octane fuel. The increased availability of ethanol in the future provides an opportunity for fuel providers to deliver fuels with higher octane ratings and automakers to provide higher compression ratios – and therefore more efficient engines.[5] For example, our studies suggest that increasing the percentage of ethanol in gasoline from the current 10 percent (E10) found in most commercially available gasoline, to 20 percent (E20) while also improving engine compression ratios to take advantage of the associated increase in fuel octane, would reduce vehicle CO_2 emissions by nearly 5 percent.[6]

High-octane ethanol blends offer a win-win-win opportunity in which the increased availability of ethanol could enable increased engine efficiency, resulting in fuel savings for our customers, improved energy security and reduced CO_2 emissions. However, ethanol blends above E10 also may damage engines that are not designed to operate on higher concentrations of ethanol; this poses a particular concern for older vehicles. Appropriate planning and coordination between stakeholders is needed to manage transition issues such as these. Our research into ethanol fuels and octane rating implications will help us take the best advantage of higher-octane ethanol-fuel blends when they are made available in the future.

Biodiesel is a biofuel alternative to petroleum diesel that is made from the transesterification of vegetable oils, including soy, canola, palm and rapeseed, or from animal fat. Biodiesel is distinct from "renewable diesel," which is made by hydrotreating vegetable oils or animal fats. In the U.S., most biodiesel is currently made from soybean oil. Biodiesel is typically used in blends with petroleum diesel, where the volumetric content of biodiesel is specified numerically after the letter "B" representing biodiesel.

Future Biofuels

The biofuels currently available at a commercial scale (e.g., ethanol and biodiesel) have advantages relative to their petroleum-derived counterparts. They can be made from locally available raw materials, providing support for rural communities and reducing the need for foreign-supplied oil, while increasing national energy security. They also reduce life cycle (or well-to-wheels) CO_2 emissions compared to conventional petroleum-based fuels. However, important issues remain regarding the energy density of some biofuels, the best way to use these fuels to reduce GHG emissions, their ability to meet fuel needs without impacting food supplies and their potential impact on land-use decisions. (These issues are discussed in more detail below in the Biofuel Challenges section.)

Meanwhile, Ford is working to support and promote the next generation of biofuels, including cellulosic biofuels. These are primarily fuels made from plant cellulose – stalks, leaves and woody matter – instead of from sugars, starches or oil seeds. Cellulosic biofuels will have many advantages. They should minimize possible

market competition between food and fuel. They would allow for the more complete use of crops such as corn and soybeans by using additional parts of these crops, including stems and leaves, for fuel production. In addition, cellulosic biofuels can be made from "energy crops," such as switchgrass and wood, that require less fertilizer and less energy-intensive farming methods. This would further reduce the total CO_2 footprint of the resulting biofuels. There has been significant progress in technologies and processes to transform biomass feedstocks into ethanol in recent years and a few small-scale plants are now in operation in the U.S. and elsewhere. Technological barriers to large-scale production of cellulosic ethanol have been largely overcome. The main barrier now is the regulatory uncertainty associated with recent downward revisions of cellulosic biofuel mandates and the associated poor business case for cellulosic ethanol production in an uncertain market. Capital availability also remains a significant challenge to commercialization. Given these challenges, it is our assessment that next-generation biofuels will not be available at scale in the marketplace for at least 10 years. Looking further into the future, if additional technical breakthroughs in production efficiencies are made, and if the investment climate is sufficiently favorable to encourage the large capital outlays required to build the necessary biorefineries, next-generation biofuels could play a significant role in addressing climate change and energy security.

The United States Renewable Fuel Standard and the Future of Biofuels

The Energy Independence and Security Act of 2007 expanded the Renewable Fuel Standard (RFS) by requiring a significant increase in the use of biofuels – to a total of 36 billion gallons per year by 2022. This law also requires that, beginning in 2010, a certain portion of biofuels must be "advanced" and/or cellulosic-based fuels. Ethanol blended into gasoline is expected to supply the majority of this biofuel mandate and could displace a substantial fraction of U.S. gasoline demand by 2022.[7] The use of biodiesel in the U.S. is also likely to increase in the coming years. However, it will not likely increase to the same levels as ethanol, because the RFS mandates lower volumes of biomass-based diesel, there is less availability of cost-effective feedstock material, and because a relatively small percentage of light-duty passenger vehicles in the U.S. use diesel fuel.

Full deployment of E10 for gasoline-powered vehicles would achieve approximately one third of the RFS-mandated biofuel use by 2022. Therefore, meeting the full RFS biofuel requirement will require much greater use of E85 in FFVs and/or the development of vehicles that can use "mid-level blends" of ethanol and gasoline (i.e., between E10 and E85). The expanded use of E85 in FFVs would require a corresponding increase in the E85 fueling infrastructure in the next 10 to 20 years. An approach using mid-level ethanol blends would require that all new vehicles be designed for higher ethanol capability, and the existing fueling infrastructure would need to be updated for compatibility with fuel containing higher concentrations of ethanol. While the introduction of and expanded use of E15 might help achieve the RFS goals if carried out properly, the problems associated with the approach taken by the EPA to date (as discussed above) outweigh the benefits. For any of these approaches to be successful, the new ethanol-blend fuels will have to provide enough value to the consumer to attract them to buy these fuels. Regardless of the specific strategy used, coordinated efforts will be required between automakers, fuel suppliers, consumers and the government to meet the RFS mandate while ensuring the compatibility of vehicles and ethanol-blended fuel. Without alignment between vehicles, fuels and infrastructure, a mismatch will occur, and it will be difficult to meet the RFS mandate successfully.

Biofuel Infrastructure

More widespread use of biofuels would increase their benefits for reducing GHG emissions and improving energy security. This requires greater availability of both biofuels and vehicles capable of using biofuels. In the U.S., the E85 refueling infrastructure remains inadequate. Out of more than 160,000 refueling stations in the U.S., approximately 3,300 (or slightly more than 2 percent) offer E85. This trails the availability of E85 vehicles in the marketplace. FFVs make up approximately seven percent of the current U.S. light-duty vehicle and FFVs now account for nearly 20 percent of all new light-duty vehicles being produced. The FFV fleet is substantial and growing. To reap the energy security and climate change opportunities of the FFV fleet more infrastructure, particularly more access to affordably priced E85, is necessary.

Biofuel Challenges

Much of the interest in biofuels results from their potential to lessen the environmental impacts of transportation fuels while contributing to energy independence. Biofuels are typically made from domestic and renewable resources, they provide an economic boost to rural communities, and they help to reduce greenhouse gas emissions because the plants from which they are made absorb atmospheric CO_2 while they are growing. But are biofuels the best solution to our growing fuel-related environmental, economic and political problems? The issues are complex. We believe biofuels are an important part of the equation for addressing climate change and energy security. We recognize, however, that major advances need to be made in production processes, source materials and fuel types for biofuels to achieve their full potential.

Challenges relating to today's biofuels include the following:

- **Energy Density**: The energy density of ethanol is approximately two-thirds that of gasoline.[8] This means there is approximately one-third less available energy in a gallon of ethanol than in a gallon of gasoline. As a result, drivers using fuels containing higher amounts of ethanol will have to refuel more frequently. Ethanol does have improved qualities, such as higher octane, that can be leveraged to offset some of the lower energy content relative to gasoline. In 2012, Ford researchers published an assessment that quantified the potential benefits of high-octane ethanol gasoline blends in the U.S.[9] Biodiesel has approximately the same energy density as conventional petroleum-based diesel.
- **Lifecycle Greenhouse Gas Emissions**: The CO_2 that is released when biofuels are burned is from carbon that was captured from the atmosphere by the plants used to produce biofuel feedstocks. However, current farming and production processes utilize fossil fuels in the production of ethanol and biodiesel, so the production of these biofuels results in a release of some fossil-fuel-based GHG emissions on a complete lifecycle basis. In addition, emissions of nitrous oxide (N_2O), another GHG resulting from biofuel feedstock production, need to be carefully considered for all types of biofuel feedstocks and farming techniques on a full life cycle basis, including the appropriate allocation of emissions to co-products (such as animal feed) derived from biofuel production. Government and academic studies suggest that using E85 with ethanol from corn results in approximately 20 to 30 percent fewer life cycle GHG emissions than gasoline, on an energy-equivalent basis. GHG emissions related to petroleum can vary greatly depending on the source. Producing crude oil from tar sands, for example, results in a greater release of GHGs than producing crude oil from conventional sources. The use of renewable energy sources in the production of ethanol and biodiesel production can reduce their lifecycle GHG emissions further. We believe that developing cellulosic or biomass-based biofuels with next-generation processes will significantly decrease the GHG emissions associated with biofuels, by up to 90 percent.[10]
- **Competition with the Food Supply**: Another concern about current corn- and soybean-based biofuels is that they compete in the marketplace with food supplies and are often cited as one of the factors that increase food prices. In 1990, the production of ethanol in the U.S. consumed approximately 3 percent of the corn harvest, but in 2012 that figure was 41 percent. Ethanol production removes only the starch from the corn kernel – the remaining portion (about one-third of the weight of the corn kernel) is a highly valued feed product (called distillers grains) and a good source of protein and energy for livestock and poultry. When taking into account the livestock feed yield of the distiller's grains, about 30 percent of the U.S. corn harvest was used for ethanol production. This mitigates the competition between ethanol production and food production. In addition, the growth of the energy crop market has encouraged improvements in farming productivity (e.g., bushels per acre) that may not have occurred otherwise, further reducing the impact of biofuels on corn availability. The increase in corn used for ethanol production in the U.S. over the past 10 to 15 years has been essentially matched by the increased harvest over the same period. The increased harvest has been driven mainly by improved yield per acre and, to a lesser extent, by increased acreage. If next-generation biofuels can efficiently utilize biomass such as plant stalks, woodchips or grasses and be grown on marginal land with little irrigation, then competition with food crops should be minimized.
- **Land-Use Conversion for Biofuel Production**: Recent studies have looked at the overall CO_2 and N_2O impacts of "direct" land-use changes associated with biofuels – i.e., converting natural ecosystems to farmland for the production of crops to make biofuels. Additional studies have considered an "indirect" land-use change scenario in which the use of farmland for biofuels in one region indirectly leads to the conversion of natural ecosystems to farmland in another region due to crop market feedbacks (either replacing the grain in the marketplace or due to increased prices). Recent studies indicate that the magnitude of land-use changes in the early studies were overestimated. Significant uncertainty remains and this is an area of active research.

At Ford, we are following the debates about biofuels closely. As we proceed, we need to consider how biofuels are derived and carefully review issues such as the potential net greenhouse gas benefits; political, economic, social and environmental concerns related to biofuel and petroleum use; and the management of land, food and water resources. We agree with the general consensus among scholars and industry experts that the current generation of biofuels has modest environmental benefits and is a first step toward cleaner transportation and energy independence. We are actively investigating the potential of next-generation biofuels that have greater environmental, energy security and economic benefits. We believe that improvements in the efficiency of farming technologies and biomass production processes, and the development of advanced biofuels, will significantly increase the benefits and long-term sustainability of biofuels. Even with these improvements, solving our climate change and energy security problems will require a multifaceted set of solutions, including new fuels, improvements in vehicle efficiency, and changes in consumer driving patterns and practices.

For more information on our implementation of biofueled vehicles, please see Renewable Biofueled Vehicles. To learn about Ford's perspective on biofuel-related public policy issues, please see Climate Change Policy and Partnerships.

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Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG or propane autogas)

Interest in and use of CNG and LPG, or propane autogas, as a vehicle fuel is expanding, although they still account for a small percentage of vehicle fuels used today.. Supply of CNG and LPG is also growing as new reserves of natural gas are being accessed through non-conventional drilling methods. These fuels also offer some environmental and cost benefits that make them good options for some drivers. CNG and LPG are especially relevant for centrally fueled vehicles, such as government fleets, taxis, delivery trucks, and construction and maintenance fleets.

In the U.S. increasing domestic natural gas production is further reducing prices. This increase in domestic supply, coupled with improved vehicle technologies, is promoting many fleet managers to reconsider using these fuels in their fleets.

In the U.S. CNG is primarily used in heavy-duty vehicles, such as long-haul trucks and buses, and medium-duty vehicles, such as our Ford Super Duty trucks. However, as a result of additional requests from business and fleet customers, Ford also announced plans to offer an F-150 with CNG capability in 2014. LPG is used primarily in medium-duty vehicles and some light-duty vehicles such as taxis.

In Europe, South America and Asia, these fuels are somewhat more widely used. CNG is most widely used in Iran, Pakistan, India, Argentina and Brazil. LPG is most widely used in Turkey, South Korea, Poland, Italy and Australia. Globally, CNG is used in only about 1.3 percent of the total vehicle fleet, while LPG is used in about 3 percent.

CNG- and LPG-fueled vehicles emit less greenhouse gases than comparable gasoline-powered vehicles. Vehicles running on CNG typically emit about 25 percent less CO_2 and about 10 percent fewer total GHGs on a well-to-wheels basis. Vehicles running on LPG typically emit 15 to 25 percent fewer total life cycle GHG emissions. CNG and LPG also reduce non-CO_2 tailpipe emissions such as NOx, SOx, particulate matter and carbon monoxide.

CNG and LPG also have significantly lower fuel costs. CNG costs approximately 40 to 70 percent less than gasoline on a gasoline-gallon equivalent basis depending on location. LPG costs approximately 50 percent less per gallon compared to gasoline. While CNG provides better GHG and fuel costs reductions, LPG can have other benefits. For example, LPG refueling systems typically cost significantly less to install. LPG fuel tanks are also smaller than CNG, resulting in less loss of cargo and/or passenger capacity.

There are some significant challenges to wider adoption of CNG and LPG as vehicle fuels. Though both fuels are widely available in most countries, there is not an established refueling infrastructure for vehicles in most countries. In addition, to provide adequate driving range, both gases must be stored under pressure in the vehicle, requiring larger and heavier tanks that reduce vehicles' passenger and cargo capacity.

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1. Of course, there is not only a need to reduce the fossil carbon content of the fuel itself, but to reduce any fossil-based CO_2 emitted during feedstock excavation, fuel production and distribution.

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EXHIBIT 5

Ford Future Competitiveness

While the world may seem stagnated by gridlocked governments and economic uncertainty, the truth is that we live in an era of constant change. Across the globe, citizens and brands are stepping up to make things happen through innovation, collaboration and perseverance.

Ford, for example, is launching 23 new or significantly refreshed products worldwide in 2014. While it once took five years to bring a new product to market, it now takes only 36 months. This accelerated pace is part of a broader sustained explosion in technology and innovation worldwide.

Notably, this new era of rapid change demands a corresponding mindfulness of the precious resources we too often take for granted: our time, our health, our population and our planet. Out of a world of hyper-stimulation, a culture of reflection is emerging, driving us to re-examine what matters most.

The marketplace is inundated with disruptive technology, such that even dramatic innovations are now viewed as commonplace. At the same time, consumers are increasingly drawn to the way things were, driving demand for nostalgia-based products and services.

To remain relevant and competitive in the long run, we need to prepare for a future that looks significantly different from the present. As we think about the forces that will shape global markets in the years to come, we look at many factors, including consumer trends (people-customers.html), business risks (doc/sr13-form-10-k.pdf), and other inputs into and outcomes of our materiality analysis (blueprint-materiality.html). This analysis has reinforced our belief that profound shifts are underway that will fundamentally reshape both the markets for our products and services, and the constraints under which auto manufacturers will operate in the future. One obvious driver of change is population growth: The United Nations predicts that the global population will reach 9 billion by 2050 and increase to 10.1 billion by 2100. Another is the shift in the locus of rapid economic growth from more mature markets to evolving economies in China, India, Brazil and other countries. (See Focus on Asia (financial-asia.html) for insight into our growth in that region.)

These trends, along with advances in conventional and renewable energy technologies, are leading to significant shifts in energy supply and demand, several of which are highlighted in the World Energy Outlook 2013, a publication of the International Energy Agency (IEA):

- Despite widespread efforts to use energy more efficiently, energy demand is projected to grow by one third by 2035 (from 2011) with India and countries in Southeast Asia taking the lead in driving consumption higher.
- Energy-related carbon dioxide emissions are projected to rise by 20 percent to 2035, leaving the world on track for a long-term average temperature increase of 3.6 degrees Celsius, far above the internationally agreed 2-degree (Celsius) climate target.

We believe we have taken a responsible course to plan our products (environment-products-plan.html) based on doing our part to achieve climate stabilization (environment-climate-strategy-targets.html). Our comprehensive water strategy takes into account water-related risks and opportunities across our value chain.

Related links

This Report

- Customers (people-customers.html)
- Sustainable Technologies and Alternative Fuels Plan (environment-products-plan.html)

To meet the needs of our customers and contribute to addressing the global sustainability issues of the future, we are applying our core competencies, including innovation and partnership-building, to develop solutions for future mobility (financial-mobility.html) that reflect the realities of a changing world.

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Customers

Our customers' wants and needs continue to evolve. We monitor consumer trends and develop and promote products to fit certain market segments. In recent years, we have paid particular attention to the growing demand for more fuel-efficient and cleaner vehicles.

We are also working to understand the unique and changing needs of our customers in urban and emerging markets, where congestion, air pollution, traffic safety issues and social inequalities add a new range of challenges to delivering personal transportation solutions. The Mobility Solutions (financial-mobility.html) section discusses our efforts to understand and address these challenges.

As the marketplace becomes more diverse, we are also working to better reach multicultural audiences, particularly in the United States. We have made dedicated efforts to market Ford and Lincoln products to African-American and Hispanic customers, including developing Spanish advertising programs targeting the U.S. Hispanic market. We have also been a leader in the development of in-language, Internet-based advertising programs. Our Spanish website, es.ford.com (http://es.ford.com), is one of the most extensive in the industry. And, we were among the first to use Google with Spanish search programs.

This section discusses how we engage with customers (people-customers-engaging.html), understand customer needs (people-customers-needs.html), build customer awareness of our products (people-customers-awareness.html) and increase customer awareness of environmental issues (people-customers-issues.html).

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EXHIBIT 6

Climate Change and the Environment

Overview

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  - Non-CO_2 Tailpipe Emissions
  - Sustainable Materials
  - Electrification: A Closer Look
- Greening Our Operations
- Data

Case Study: Ford Fleet Purchase Planner

Voice: John Fleming

Sustainable Technologies and Alternative Fuels Plan

Overview of Our Plan

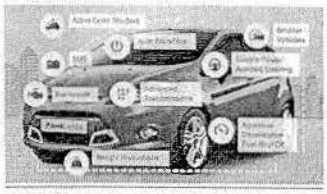
In 2007, we set out an ambitious plan of vehicle technology and alternative powertrain and fuel actions to meet our climate stabilization goals. For the past seven years, we have consistently implemented this plan, delivering significant improvements in the fuel economy of our global product portfolio and enabling the use of alternative fuels.

A Portfolio Approach

Ford is taking a portfolio approach to provide consumers with a range of different options that improve fuel economy and overall sustainability while still meeting individual driving needs. We call this strategy the "power of choice."

Improving Fuel Economy

Though the fuel economy of modern vehicles has improved significantly over the past few decades, there are still opportunities to further improve vehicles with traditional gasoline and diesel powertrains. We are implementing a range of advanced engine and transmission technologies as well as improving aerodynamics and reducing weight.



Migration to Alternative Fuels and Powertrains

Alternative fuels and powertrains are playing a growing role in reducing carbon emissions. We are implementing a range of alternatives to conventional internal combustion vehicles including electrified vehicles – i.e., hybrids, plug-in hybrids and all-electric vehicles – as well as vehicles that run on renewable biofuels, natural gas and propane, and implementing advanced clean diesel technologies. We are also working to advance hydrogen fuel cell vehicle technologies.

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Case Study: Ford Fleet Purchase Planner

Voice: John Fleming

Overview of Our Plan

Our sustainable technologies and alternative fuels plan, mapped out in 2007, is our route to improving the fuel economy and cutting the carbon dioxide (CO_2) emissions of our products around the world. We remain committed to the plan and have completed the near-term actions and are currently implementing the mid-term actions.

✓ indicates action completed

In Place	Near Term	Mid Term	Long Term
Fundamental technologies in place	**Fully implement fundamental technologies; introduce significant weight savings**	**Expand weight savings, hybrids and plug-ins**	**Leverage hybrids and introduce alternative energy sources**
✓ Significant number of vehicles with EcoBoost® engines	EcoBoost engines available in nearly all vehicles; engine displacement reduction aligned with vehicle weight savings	Introduce second-generation EcoBoost and advanced tech diesel	Second-generation EcoBoost and advanced tech diesels – high volume
✓ Diesel use as market demands	✓ Electric power-assisted steering – high volume	Efficient heating, ventilation and air conditioning for HEVs, PHEVs and BEVs	Continued efficiencies in electrical architecture and intelligent energy management
✓ Electric power-assisted steering – begin global migration	✓ Additional aerodynamics improvements	High-volume eight-plus speed automatic transmissions	Lightweight materials proliferate to global platforms
✓ Battery Management Systems – begin global migration	✓ Six-speed automatic transmissions – high volume	Continued weight reduction actions via advanced materials	Next-generation HEV and PHEV technologies
✓ Aerodynamics improvements	Introduce substantial weight reductions; 250–750 lbs.	Increase volume of HEV and PHEV technologies	Continued leverage of BEVs
✓ Dual-clutch and six-speed automatic transmissions replace four- and five-speeds	✓ Increased application of Auto Start-Stop	Evolve BEV and PHEV ecosystems	Engines capable of operating on fuels with increased renewable hydrocarbons
✓ Increased unibody applications	✓ Increased use of hybrid technologies	Optimize engines/vehicles for higher octane/alternative fuels	Fuel cells migration timing aligned with fuels and infrastructure availability
✓ Introduction of additional small vehicles	✓ Introduction of plug-in hybrid electric vehicle (PHEV) and battery electric vehicle (BEV)	Introduction of fuel cell electric vehicles	
✓ Auto start-stop systems (micro-hybrids) introduced	✓ Vehicle and powertrain capability to leverage available renewable fuels		
✓ Add hybrid electric vehicle (HEV) applications	Develop fuel cell stack technology		
✓ Flexible-fuel vehicles			
✓ Compressed natural gas (CNG) prepped engines available where select markets demand			

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A Portfolio Approach

In the very early years of our industry, automotive engineers experimented with a variety of methods for powering vehicles, including electricity and biofuels. The internal combustion engine using petroleum-based gasoline and diesel rose to the top fairly quickly, and has been the standard vehicle power source for the past 100 years. Reminiscent of those early years, we are now in a period of intense development and adoption of new vehicle technologies and fuels. At this time, however, there is no single winner in the race for the vehicle of the future.

That is why Ford is taking a "portfolio approach" to developing sustainable technologies and alternative fuel options. Our goal is to provide diversity in fueling options, in order to meet customers' differing needs, while improving vehicle energy efficiency and long-term sustainability. We are thus providing customers with a range of affordable, fuel-efficient vehicles, advanced powertrains and alternative-fueled vehicle options – including fuel-efficient EcoBoost® gasoline engines, advanced diesel engines, hybrids, plug-in hybrids, all-electric vehicles and alternative-fuel vehicles. We call this approach the "power of choice," because it allows customers to choose the vehicle that best meets their driving needs.

Giving Customers the "Power of Choice"

To deliver this "power of choice" strategy 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 vehicle platforms that have "plug-and-play" compatibility with a wide range of technologies will also allow us to make the range of fuel and powertrain options available more affordably. For example, we have introduced an all-electric Ford Focus, a hybrid electric Ford C MAX, and the C MAX Energi plug-in hybrid – all built on our global C-platform.

We 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.

Also, we currently produce a range of flexible-fuel vehicle models across our global markets; these vehicles can run on either regular gasoline or E85 (a blend of 85 percent ethanol and 15 percent gasoline). In South America, we also offer vehicles that can run on E100. Though biofuels are not available in every market, they are widely available in the U.S. and South America and in some parts of Europe, so it makes sense for us to provide this option to customers who can take advantage of it. In addition, biofuel availability is expected to increase globally. In Europe, the EU's Renewable Energy Directive mandates that 10 percent of energy in the transportation sector must come from renewable fuels by 2020. In the U.S., the Renewable Fuel Standard requires annual increases in the volume of renewable fuels, reaching 36 billion gallons by 2022. Our flexible-fuel vehicles, which are provided at little or no additional cost, allow consumers to choose fuels based on availability and price. For the 2013 model year, we are offering 15 flexible-fuel models in the U.S.

We are also producing select vehicle models that can be converted to run on compressed natural gas (CNG) and liquefied petroleum gas (LPG) (also known as propane autogas). And, we are working with qualified vehicle modifiers to ensure that conversion to those fuels meets our quality, reliability and durability requirements. In 2013, we introduced a CNG/LPG conversion-ready F-150. We also continue to offer the Ford Transit Connect, the entire F-Series Super Duty® pickup truck and chassis cab lineup, our E-Series Van and Cutaway models, as well as our medium-duty trucks, with a CNG/LPG conversion-ready engine package. In Europe, we offer CNG and LPG conversions of various models in markets where dedicated infrastructure exists, such as Italy, Germany and the Netherlands.

CNG and LPG are particularly good options for fleet customers, such as taxi companies and delivery services, that use a central refueling system. In addition, CNG and LPG are widely available as vehicle fuels throughout South America and

Europe. We are delivering CNG/LPG-ready engines to provide another lower-carbon option to those customers for whom this option makes sense.

As noted above, we have also been developing a range of electrification technologies. In fact, we now offer six electrified vehicles for sale in the U.S. – three hybrid electric vehicles, two plug-in electric vehicles and one battery electric vehicle. Our vehicle electrification strategy is based on providing customers with a variety of vehicle choices to meet their driving needs. To read more about this strategy, please see Electrification: A Closer Look. All-electric and plug-in hybrid vehicles may initially make the most sense for urban drivers and fleet users who have daily commutes under 40 miles. However, as battery and recharging options continue to advance, we expect these vehicles to work for a wider range of our customers.

In the longer term, hydrogen may emerge as a viable alternative fuel. Hydrogen has the potential to diversify our energy resources and lower life cycle greenhouse gas emissions, if low-carbon hydrogen production becomes feasible. To prepare for this, we are developing technology to power vehicles with hydrogen fuel cells. In addition, we are working to pair hydrogen fuel cell technology with vehicle electrification technologies to maximize the sustainability benefits of both technologies.

Helping Customers Assess the Options

It can be confusing for customers to understand and choose between the wide range of new fuel-efficiency technologies, advanced powertrains, and alternative-fuel vehicles available in today's marketplace. We have developed a suite of tools to help our fleet customers assess the relative cost and emissions benefits of different vehicle options based on the specific use factors of their fleet. For example, with our tools, we can help fleet managers make a side-by-side comparison the life cycle CO_2 emissions and fuel costs of different vehicles using the details of their own driving behavior, local fuel prices, and local electricity prices and sources. See our case study for more information on this and other fleet purchasing tools.

Support from Our Global Energy Model

Our portfolio approach to sustainable vehicle technology and fuel options is further supported by our global energy modeling work. Ford researchers developed a global energy model to understand the combination of vehicle technologies, fuels, and energy technologies that would reduce life cycle emissions from light-duty transportation in line with our climate stabilization goal at the lowest overall cost to the economy. Our model compares different energy and fuels, vehicle technology, and technology adoption scenarios across the next 100 years. The results of this model support our belief that there is no single vehicle technology or fuel that will cost-effectively achieve the goal of climate stabilization better than our approach of developing and implementing a wide range of vehicle technology and fuel options.

This section describes our current actions and future plans to develop a wide range of energy-efficient technologies, alternative fuels and advanced powertrain technologies that will give our customers near-, mid- and longer-term options for more sustainable vehicles.

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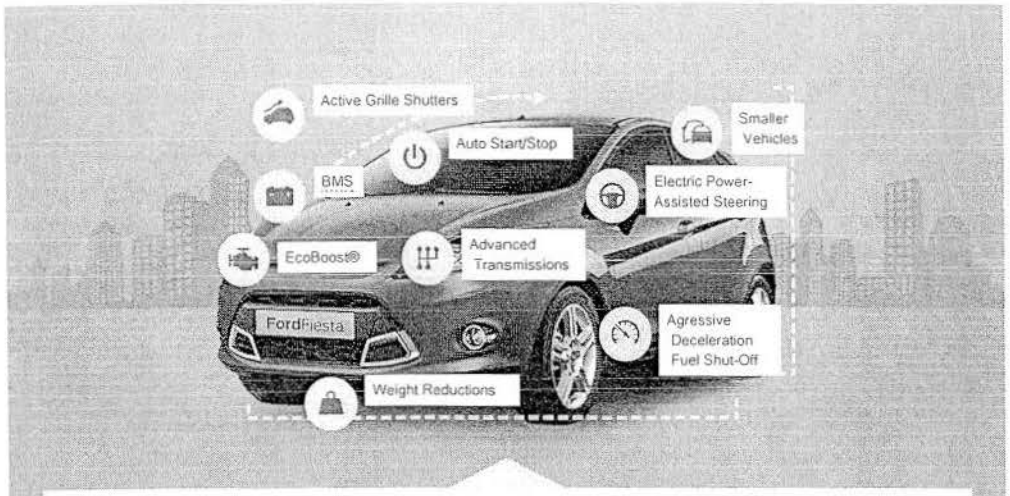
Improving Fuel Economy



This section summarizes some of the technologies we are using to improve the fuel economy of traditional gas and diesel engines. These include advanced engine and transmission technologies, weight reductions, and improvements to vehicle subsystems.

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

EcoBoost®

Technology Overview

The centerpiece of our near-term fuel-economy improvement efforts is the EcoBoost engine, which uses turbocharging and direct injection along with reduced displacement to deliver significant fuel-efficiency gains and CO_2 reductions, relative to larger displacement engines, without sacrificing vehicle performance.

Benefits

EcoBoost offers comparatively better value than many other advanced fuel-efficiency technologies. Due to its compatibility with most of the gas-powered vehicles we produce, we are able to offer EcoBoost's fuel-economy benefits throughout our product lineup more quickly and to a greater number of our customers. Our rapid deployment of EcoBoost in high volumes across a wide array of our vehicle nameplates is also helping us make a dramatic step forward in CO_2 emission reductions.

Deployment

Ford initially introduced the EcoBoost engine in 2009. Since then we have produced more than 2 million EcoBoost-equipped vehicles globally, responding to strong consumer demand for the technology. By the end of 2013 we offered EcoBoost engines on 15 North American nameplates. The engine is now available on 90 percent of our North American nameplates and nearly 80 percent of our European nameplates. Also, we continue to migrate EcoBoost engines to our other regions.

All told, we have introduced or announced seven EcoBoost engine displacements with multiple derivatives for specific vehicles and markets, as follows:

- 3.5L V6 EcoBoost: We introduced the first EcoBoost engine – a 3.5L V6 – in North America on the 2010 Lincoln MKS, Lincoln MKT, Ford Taurus SHO and Ford Flex. This engine provides comparable or superior performance to a normally aspirated V8 engine, but with the fuel economy of a V6. We also offer the 3.5L EcoBoost on the F-150, beginning with the 2011 model.
- 2.7L V6 EcoBoost: In 2014 we introduced a completely new twin-turbo 2.7L EcoBoost with Auto Start-Stop.
  - This engine is E85 compatible and meets California's strict low-emission vehicle (LEV III)

emissions requirements.

- This new engine will debut on the all-new 2015 Ford F-150, providing the performance of a mid-range V8 engine but with better fuel economy.

- 2.3L I-4 EcoBoost:
  - In 2014, we introduced the new 2.3L I-4 EcoBoost engine on the Ford Mustang. This Mustang will be offered globally in multiple regions for the first time ever.
  - The 2.3L will also be offered in the Lincoln MKC with front-wheel drive.

- 2.0L I-4 EcoBoost: In 2010 we introduced a 2.0L I-4 EcoBoost engine, the first in the EcoBoost lineup to go truly global.
  - In the U.S., the 2.0L I-4 EcoBoost is currently available on the Ford Edge, Explorer, Focus, Escape and Fusion. In Europe, the Ford S MAX, Mondeo and Galaxy are available with a 2.0L EcoBoost option.
  - In China, we offer the 2.0L EcoBoost on the Ford Mondeo.
  - In Australia, we offer the 2.0L EcoBoost on the Ford Mondeo and Falcon.

- 1.6L I-4 EcoBoost:
  - In Europe, the 1.6L I-4 EcoBoost engine is available on the Ford C MAX and Focus.
  - In the U.S., the engine is available on the Ford Escape, Fusion and C MAX.

- 1.5L I-4 EcoBoost:
  - Announced in early 2013, this engine will initially be produced at Ford's Craiova, Romania, Plant; other manufacturing locations will be announced in the future.
  - The new engine was introduced first in China in the all-new Ford Mondeo, and is now available on the Fusion sedan in North America and the Mondeo in Europe.

- 1.0L I-3 EcoBoost:
  - We introduced the 1.0L three-cylinder EcoBoost engine in Europe on the European Ford Focus. In 2013 we migrated this engine into the B MAX, C MAX and all-new Mondeo.
  - In the U.S., we introduced the 1.0L EcoBoost on the 2014 Ford Fiesta.
  - In India, we introduced the 1.0L EcoBoost on the Ford EcoSport. This engine will also be available in vehicles in China and other regions.

These EcoBoost engines illustrate Ford's plans to use smaller-displacement, boosted engines to deliver improved fuel economy and performance throughout our vehicle lineup. As EcoBoost is a key element of our long-term powertrain strategy, we will continue to improve its efficiency and vehicle application potential through the further development of supporting advanced technologies.

Advanced Transmissions

Technology Overview

We have adopted fuel-efficient six-speed transmissions across our product portfolio. We are now improving the performance and operating efficiency of all our transmissions by optimizing their operation with EcoBoost engines and further reducing parasitic losses such as mechanical friction, and extraneous hydraulic and fluid pumping. We are also developing more advanced transmission concepts to support additional fuel-efficiency improvements and vehicle performance benefits. For example, in 2013 we announced that we will jointly develop with General Motors an all-new generation of advanced-technology nine- and 10-speed automatic transmissions for cars, crossovers, SUVs and trucks.

Benefits

The nine- and 10-speed transmissions we are developing will improve fuel economy by up to 5 percent over six-speed gear boxes, depending on the application. In addition, they provide better acceleration, smoother shifting and a quieter driving experience.

Deployment

We have completed our migration to six-speed gearboxes in North America and Europe. We plan to start deploying the next-generation nine- and 10-speed transmissions worldwide in a few years.

Electric Power-Assisted Steering

Technology Overview

Electric power-assisted steering (EPAS) uses a small electric motor instead of conventional hydraulic systems to assist steering.

Benefits

EPAS typically will reduce fuel consumption and decrease carbon dioxide emissions by up to 3.5 percent over traditional hydraulic systems, depending on the vehicle and powertrain application. On the 1.4L Duratorq® diesel Ford Fiesta, for example, which is available in Europe, EPAS provides a 3 to 4 percent improvement in fuel efficiency compared with a hydraulic-based power steering system. By combining EPAS with aerodynamic improvements, we improved the mileage of this vehicle by approximately 8 percent compared to the previous model year. These fuel efficiency improvements – and associated reductions in CO_2 emissions – help us deliver vehicles that qualify for lower emissions-related taxation brackets in some countries. EPAS also enables other advanced technologies such as "pull drift" compensation, which detects road conditions – such as a crowned road surface or crosswinds – and adjusts the EPAS steering system to help the driver compensate for pulling and drifting. EPAS also enables Active Park Assist, which helps drivers to parallel park.

Deployment

We already offer EPAS in the Ford Explorer, F-150, Mustang, Fusion, Flex, Taurus and Escape and the Lincoln MKS, MKT and MKZ Hybrid in North America; the Ford C MAX, Focus, Focus ST and Fiesta in North America and Europe; and the Ford Ka and Kuga in Europe. EPAS is also used in all of our new electrified vehicles.

Auto Start-Stop

Technology Overview

"Start-Stop" technology shuts down the engine when the vehicle is stopped and automatically restarts it before the accelerator pedal is pressed to resume driving. Start-Stop technology includes sensors to monitor functions such as cabin temperature, power supply state and steering input, so that vehicle functioning remains exactly the same to the driver as when the engine remains on continuously. If the system senses that a vehicle function has been reduced and will negatively impact the driver's experience, the engine will restart automatically.

Benefits

This technology maintains the same vehicle functionality as that offered in a conventional vehicle, but saves the fuel typically wasted when a car is standing and running at idle. Savings vary depending on driving patterns. On average, it improves fuel efficiency by 3.5 percent, but it can improve fuel efficiency even more in city driving. The technology can also reduce tailpipe emissions to zero while the vehicle is stationary – for example, when waiting at a stoplight.

Deployment

In the U.S., we introduced the technology on the all-new 2013 Ford Fusion with 1.6L engine and automatic transmissions. In 2014, it is available in the U.S. on the Ford Fusion with 1.5L EcoBoost engine. In Europe, Auto Start-Stop is already standard on the Ford Ka and certain versions of the Mondeo, S MAX, Galaxy, Focus, C MAX and Grand C MAX. By 2016, 90 percent of our vehicle nameplates globally will be available with Auto Start-Stop.

Weight Reductions

Technology Overview

We are also working to improve fuel economy by decreasing the weight of our vehicles – in particular by increasing our use of unibody vehicle designs, lighter-weight components and lighter-weight materials.

We are using lightweight materials, such as advanced high-strength steels, aluminum, magnesium, natural fibers, and nano-based materials to reduce vehicle weight. And, some of our advanced engine and transmission technologies, such as EcoBoost® and our dual-clutch PowerShift transmissions, further reduce overall vehicle weight.

Benefits

In general, reducing vehicle weight reduces fuel use. To achieve our fuel-efficiency goals, we need to reduce the weight of our vehicles by 250 to 750 pounds, without compromising vehicle size, safety, performance or customer-desired features. Weight reductions alone may have relatively small impacts on fuel economy. By itself, a 10 percent reduction in weight results in approximately a 3 percent improvement in fuel efficiency. However, if vehicle weights can be reduced even more substantially, it becomes possible to downsize the powertrains required to run the vehicle. Weight reductions combined with powertrain rematching not only improves fuel economy, but helps maintain overall performance (compared to a heavier vehicle with a larger engine).

Many lightweight materials also have benefits beyond fuel-efficiency gains. To learn more about the benefits of natural fiber materials, please see the Sustainable Materials section.

Deployment

The all-new 2015 Ford F-150 represents our most extensive use of lightweight materials ever. Overall, this truck is up to 700 pounds lighter than the outgoing model thanks to extensive use of high-strength

steels and aluminum alloys. This significant weight reduction not only results in better fuel economy, it also allows the new F-150 to tow more, haul more, and accelerate and stop more quickly. To accomplish this weight reduction, we increased the use of high-strength steel in the all-new Ford F-150 frame from 23 percent to 77 percent to create a pickup frame that is stronger, more durable and structurally more rigid than the previous generation F-150, while saving up to 60 pounds of weight. The F-150's body also uses new applications of aluminum alloys, which not only reduce weight but also improve the dent resistance and overall durability of the truck body. The specific materials used were carefully tested and analyzed based on their durability, overall performance, and life cycle environmental impact. For more information on our use of life cycle analysis in choosing materials for this vehicle, please see the Life Cycle Analysis section. For more detail on our development of this vehicle and what it means to our company, please see our F-150 case study.

Other examples of our use of lighter-weight materials in a range of vehicles and parts applications, include:

- In 2012, we announced that the all new Transit Van will replace the E-series van in the United States. This van makes extensive use of lighter-weight high-strength steel and boron steel. It has an average of 25 percent better fuel economy and haul at least 300 pounds more than today's E-Series.
- In 2012, we introduced a new, lightweight, injection-molded plastic technology called MuCell on the all-new Ford Escape. Manufacturing MuCell involves the highly controlled use of a gas such as carbon dioxide or nitrogen in the injection-molding process, which creates millions of micron-sized bubbles in uniform configurations, lowering the weight of the plastic part by more than one pound per vehicle. This is the first time MuCell has been used in an instrument panel. In addition to reducing weight, the MuCell microcellular foam saves money and production time. On the 2012 Escape, MuCell saves an estimated $3 per vehicle versus solid injection molding, and molding cycle time is reduced 15 percent. This plastic was the Grand Award winner at the 2011 Society of Plastics Engineers competition in the "Most Innovative Use of Plastics Award" category.
- The Lincoln MKT crossover has an advanced lightweight magnesium and aluminum liftgate, which is more than 20 pounds, or 40 percent, lighter than a similar part made from standard steel.
- The Ford Explorer makes extensive use of high-strength steels. Nearly half of the vehicle's structure – including the A-pillars, rocker panels and front beams – are comprised of high- strength steels, such as boron. The Explorer also has an aluminum hood.
- In the Ford Focus, more than 55 percent of the vehicle shell is made from high-strength steel and more than 26 percent of the vehicle's structure is formed from ultra-high-strength boron steels. The Focus combines these high-strength steels with innovative manufacturing methods. For example, the vehicle's B-pillar reinforcement, a key structural part, is made from ultra-high-strength boron steel that has been produced using an innovative tailor-rolling process. The process allows the thickness of the steel sheet to be varied along its length, so the component has increased strength in the areas that are subjected to the greatest loads. The tailor-rolled B-pillar has eight different gauge thicknesses, to improve side-impact crash performance while saving more than three pounds per vehicle.
- We are also expanding our use of aluminum engine parts and all-aluminum engines. The current Mustang, for example, has an aluminum engine.
- By using high-strength steels, the European Ford Fiesta weighs approximately 40 kilograms less, depending on engine choice, even though it stands on virtually the same footprint as the previous model and has 10 kilograms of new safety features and sound insulation.

Ford researchers are also investigating additional new lightweight materials. For example, we are investigating and developing:

- New types of steel that are up to three times stronger than current steels and improve manufacturing feasibility because they can be formed into parts more easily.
- Polymeric plastic strengthening foams that are strong enough to stabilize bodywork in an accident but light enough to float on water. These foams are being used to reinforce sections of the steel auto body, such as the B-pillars.
- Surface coatings that reduce engine friction and remain intact even under the most adverse conditions.
- Alternative (copper-based) wire harness technologies that will enable significant weight reductions.
- Nanotechnology to model material properties and performance at the nano-scale, which will allow us to develop better materials more quickly and with lower research and development costs.
- Nano-filler materials in metal and plastic composites, to reduce their weight while increasing their strength. For example, we are developing the ability to use nano-clays that can replace glass fibers as structural agents in reinforced plastics. Early testing shows plastic reinforced with 5 percent nano-filler instead of the typical 30 percent glass filler has strength and lightweight properties that are better than glass-reinforced plastics.

Ford is also working to understand the health and safety issues that may be posed by nano-materials. Ford has joined with other automakers under the U.S. Council for Automotive Research umbrella to sponsor research into nano-materials' potential impact on human health and the environment. This research has addressed many health- and environment-related questions so that we can focus our nano-materials research and development in areas that will be most beneficial.

Battery Management Systems

Technology Overview and Benefits

Electrical systems are another area in which we are making progress. By reducing vehicle electrical loads and increasing the efficiency of a vehicle's electrical power generation system, we can improve fuel efficiency. Our Battery Management Systems (BMSs), for example, control the power supply system (in particular the alternator) to maximize the overall efficiency of the electrical system and reduce its negative impacts on fuel economy. This is accomplished by maximizing electricity generation during the most fuel-efficient situations, such as vehicle deceleration. In less fuel-efficient situations, the alternator's electricity generation is minimized to conserve fuel.

Deployment

BMSs have already been launched globally on a majority of our vehicle platforms. We will continue to implement BMSs on remaining vehicles and will continue to optimize its functionality to further improve benefits. We have also introduced more efficient alternators, which improve fuel economy.

Aggressive Deceleration Fuel Shut-Off

Technology Overview

Aggressive Deceleration Fuel Shut-Off (ADFSO) allows fuel supply to the engine to be shut off during vehicle deceleration and then automatically restarted when needed for acceleration or when the vehicle's speed approaches zero. This advancement builds on the Deceleration Fuel Shut-Off technology available in our existing vehicles by extending the fuel shutoff to lower speeds and more types of common driving conditions, without compromising driving performance or emissions.

Benefits

This improved fuel shutoff technology will increase fuel economy by an average of 1 percent. An additional benefit is increased deceleration rates, which should extend brake life and improve speed control on undulating roads.

Deployment

Starting in 2008, ADFSO was implemented on the Ford Flex, F-150, Expedition and Escape and the Lincoln MKS and Navigator. We are continuing to implement it as we bring out new vehicles. The ADFSO technology will be a standard feature in all of our North American vehicles by 2015, and we will continue to expand implementation globally.

Active Grille Shutters

Technology Overview and Benefits

Active Grille Shutter technology is one of our key aerodynamics improvements. It reduces aerodynamic drag by up to 6 percent, thereby increasing fuel economy and reducing carbon dioxide (CO_2) emissions. When fully closed, the reduction in drag means that the Active Grille Shutter can reduce CO_2 emissions by 2 percent.

Deployment

We implemented Active Grille Shutter technology first on our European vehicles. In the U.S., we have implemented it on the 2012 Ford Focus and Edge, the 2013 Ford Escape and the all-new 2013 Ford Fusion.

Smaller Vehicles

Technology Overview and Benefits

Smaller vehicles provide consumers with another way to get better fuel economy. Simply by being smaller and lighter, smaller vehicles can significantly reduce fuel use and related emissions.

Deployment

We are launching more small cars to provide more fuel-efficient options. For example:

- We introduced the all-new Ford Fiesta, our global subcompact vehicle commonly referred to as "B-car," Ford Fiesta globally.
- We are introducing a wide range of new vehicles in the U.S. and other markets based on our global

"C-platform," or compact sedan. In the next few years, we are introducing 10 new vehicles based on this C-platform. For example, in North America, our C-car platform underpins the gasoline-fueled Ford Focus, the battery-electric Focus Electric, the C MAX Hybrid and C MAX Energi, a plug-in hybrid.

- We are continuing to introduce new variations of the Transit Connect small commercial van in North America. This vehicle fills an unmet need in the U.S. market by offering the large cargo space that small business owners need in a fuel-efficient, maneuverable, durable and flexible vehicle package.
- In 2012 we revealed the all-new Ford EcoSport compact SUV, which will ultimately be available in nearly 100 markets globally, including India and Brazil. This vehicle is part of our global commitment to deliver fuel-efficient vehicles that customers truly want and value.

We have loaded these smaller vehicles with features and options commonly found on larger or luxury vehicles to make them attractive, thus encouraging customers to choose more fuel-efficient cars and trucks.

All of these smaller vehicles illustrate Ford's actions to provide consumers with a wider range of fuel-efficient options, as well as our efforts to leverage the best of our global products to offer new choices to customers in all of our regions worldwide.

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Climate Change and the Environment

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Migration to Alternative Fuels and Powertrains

Our migration to alternative fuels and powertrains includes introducing electrified vehicles – including hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs) – as well as advanced Clean Diesel Technologies and vehicles that run on renewable biofuels. We are also working to advance hydrogen fuel cell vehicle (FCV) technologies.

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

Advanced Clean Diesel

Hybrid Electric Vehicles (HEVs)

Battery Electric Vehicles (BEVs)

Plug-in Hybrid Electric Vehicles (PHEV)

Renewable Biofueled Vehicles

CNG/LPG Vehicles

Hydrogen Fuel Cell Vehicles (FCVs)

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