Flooding source(s)	Location of referenced elevation	* Elevation in feet (NGVD) + Elevation in feet (NAVD) # Depth in feet above ground		Communities affected
		Effective	Modified	
Neenah Creek	Downstream side of County Highway CM	*783	*781	Columbia County (Unincorporated Areas).
	At confluence with Big Slough	*791	*790	
Spring Creek	Approximately ½ mile downstream of Fair Street	*806	*805	City of Lodi.
	Upstream side of Riddle Road	*833	*834	
Spring Creek Tributary A	At confluence with Spring Creek	*821	*821	City of Lodi.
	Approximately 1,300 feet upstream of Spring Street	*821	*821	
Wisconsin River	Downstream side of State Highway 60	*748	*748	City of Portage, City of Wisconsin Dells, Columbia County (Unincorporated Areas).
	Upstream side of Interstate 39	*795	*798	
	At upstream county boundary between Columbia and Adams counties.	*848	*848	

* National Geodetic Vertical Datum.
\# Depth in feet above ground.
\+ North American Vertical Datum.

ADDRESSES

Columbia County (Unincorporated Areas)

Maps are available for inspection at: Columbia County Planning and Zoning Department, 400 DeWitt St., Portage, WI 53901.
Send comments to: John Bluemke, Director of Planning and Zoning, 400 DeWitt St., Portage, WI 53901.

City of Lodi

Maps are available for inspection at: City Clerk's Office, 130 S. Main St., Lodi, WI 53555.
Send comments to: Zoning Administrator, 130 S. Main St., Lodi, WI 53555.

City of Portage

Maps are available for inspection at: City Hall, 115 W. Pleasant St., Portage, WI 53901.
Send comments to: City Administrator, 115 W. Pleasant St., Portage, WI 53901.

City of Wisconsin Dells

Maps are available for inspection at: City Hall, 300 La Crosse St., Wisconsin Dells, WI 53965.
Send comments to: Michael Horkan, Director of Public Works, 300 La Crosse St., Wisconsin Dells, WI 53965.

(Catalog of Federal Domestic Assistance No. 83.100, ''Flood Insurance.'')

Dated: February 20, 2007.

David I. Maurstad,

Director, Mitigation Division, Federal Emergency Management Agency, Department of Homeland Security.

[FR Doc. E7–3280 Filed 2–26–07; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Parts 531 and 533

[Docket No. NHTSA–2007–27350]

Corporate Average Fuel Economy—Request for Product Plan Information for Model Year 2007–2017 Passenger Cars and 2010–2017 Light Trucks

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Request for comments.

SUMMARY: The purpose of this request for comments is to acquire new and updated information regarding vehicle manufacturers' future product plans to aid in implementing the President's plan for reforming and increasing corporate average fuel economy (CAFE) standards for passenger cars and further increasing the already reformed light truck standards. Under this plan, the President set a goal of reducing the annual gasoline use in 2017 by up to 8.5 billion gallons.

More specifically, we are seeking information related to fuel economy improvements for MY 2007–2017 passenger cars and MY 2010–2017 light trucks. The agency is seeking information in anticipation of obtaining statutory authority to reform the passenger car CAFE program and to set standards under that structure for MY 2010–2017 passenger cars. The agency is also seeking this information in anticipation of setting standards for MY 2012–2017 light trucks. This information will help the agency in assessing, in greater detail, the potential levels of future standards under a reformed structure, and the impact of those standards on gasoline consumption, manufacturers, consumers, the economy, and motor vehicle safety.

DATES: Comments must be received on or before May 29, 2007.

ADDRESSES: You may submit comments [identified by DOT DMS Docket Number 2007–] by any of the following methods:

- *Web Site: http://dms.dot.gov.* Follow the instructions for submitting comments on the DOT electronic docket site.
- *Fax:* 1–202–493–2251.
- *Mail:* Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL–401, Washington, DC 20590–0001.
- *Hand Delivery:* Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.
- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the online instructions for submitting comments.

FOR FURTHER INFORMATION CONTACT: For non-legal issues, call Ken Katz, Lead Engineer, Fuel Economy Division, Office of International Vehicle, Fuel Economy and Consumer Standards at (202) 366–0846, facsimile (202) 493–2290, electronic mail *ken.katz@dot.gov.* For legal issues, call Steve Wood, Office of the Chief Counsel, at (202) 366–2992, electronic mail *steve.wood@dot.gov.*

SUPPLEMENTARY INFORMATION:

I. Introduction

In December 1975, during the aftermath of the energy crisis created by the oil embargo of 1973–74, Congress enacted the Energy Policy and Conservation Act (EPCA). The Act established an automotive fuel economy regulatory program by adding Title V, ''Improving Automotive Efficiency,'' to the Motor Vehicle Information and Cost Saving Act. Title V has been amended from time to time and codified without substantive change as Chapter 329 of Title 49 of the United States Code. Chapter 329 provides for the issuance of average fuel economy standards for passenger automobiles and automobiles that are not passenger automobiles (passenger cars).

Section 32902(a) of Chapter 329 states that the Secretary of Transportation shall prescribe by regulation corporate average fuel economy (CAFE) standards for passenger cars for each model year. That section also states that ''each standard shall be the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year.'' (The Secretary has delegated the authority to implement the automotive fuel economy program to the Administrator of NHTSA. (49 CFR 1.50(f))). Section 32902(f) provides that, in determining the maximum feasible average fuel economy level, we shall consider four criteria: technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy.

To assist the agency in analyzing vehicle manufacturers' future product plans NHTSA has included a number of questions, found in an appendix to this notice, directed primarily toward vehicle manufacturers. To facilitate our analysis, we are seeking detailed comments relative to the requests found in the appendix of this document. The appendix requests information from manufacturers regarding their product plans—including data about engines and transmissions—from MY 2007 through MY 2017 for passenger cars, and the assumptions underlying those plans. Regarding light trucks, the agency is asking manufacturers to update the information it provided previously regarding MYs 2010 and 2011 product plans and to provide information regarding future product plans for MYs 2012 to 2017. The appendix also asks manufacturers to assist the agency with its estimates of the future vehicle population and the fuel economy improvements and costs attributed to technologies.

To facilitate comments and to ensure the conformity of data received regarding manufacturers' product plans from MY 2007 through MY 2017, NHTSA has developed spreadsheet templates for manufacturers' use. The uniformity provided by these spreadsheets is intended to aid and expedite our review, integration, and analysis of the information provided. These templates are the preferred format for data submittal, and can be found on the Volpe National Transportation Systems Center (Volpe Center) Web site at: *ftp://ftpserver.volpe.dot.gov/pub/CAFE/templates/.* (If there are difficulties in downloading these templates, contact Ken Katz at (202) 366–0846.) The templates include an automated tool (*i.e.*, a macro) that performs some auditing to identify missing or potentially erroneous entries. The Appendix also includes sample tables that manufacturers may refer to when submitting their data to the Agency.

II. Comments

Submission of Comments

How Do I Prepare and Submit Comments?

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long. *(49 CFR 553.21)*. We established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Please submit two copies of your comments, including the attachments, to Docket Management at the address given above under **ADDRESSES**. Comments may also be submitted to the docket electronically by logging onto the Dockets Management System Web site at *http://dms.dot.gov.* Click on ''Help & Information'' or ''Help/Info'' to obtain instructions for filing the document electronically.

How Can I Be Sure That My Comments Were Received?

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

How Do I Submit Confidential Business Information?

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given above under **FOR FURTHER INFORMATION CONTACT**. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above under **ADDRESSES**. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation. (49 CFR part 512.)

Will the Agency Consider Late Comments?

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under **DATES**. We are issuing this notice now in the anticipation that Congress will act quickly on the President's request for statutory authority necessary to reform the CAFE standards for passenger cars. Accordingly, the agency may be very limited in its ability to consider comments filed after the comment closing date.

How Can I Read the Comments Submitted by Other People?

You may read the comments received by Docket Management at the address given above under **ADDRESSES**. The hours of the Docket are indicated above in the same location. You may also see the comments on the Internet. To read the comments on the Internet, take the following steps:

(1) Go to the Docket Management System (DMS) Web page of the Department of Transportation (*http://dms.dot.gov/*).

(2) On that page, click on ''search.''

(3) On the next page (*http://dms.dot.gov/search/searchFormSimple.cfm*), type in the

four-digit docket number shown at the beginning of this document. *Example:* If the docket number were ''NHTSA–1998–1234,'' you would type ''1234.'' After typing the docket number, click on ''search.''

(4) On the next page, which contains docket summary information for the docket you selected, click on the desired comments. You may download the comments. However, since the comments are imaged documents, instead of word processing documents, the downloaded comments are not word searchable. Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Accordingly, we recommend that you periodically check the Docket for new material.

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://dms.dot.gov*.

Authority: 15 U.S.C. 2007; delegation of authority at 49 CFR 1.50.

Issued on: February 21, 2007.

Stephen R. Kratzke,

Associate Administrator for Rulemaking.

Appendix

I. Definitions

As used in this appendix—

1. ''Automobile,'' ''fuel economy,'' ''manufacturer,'' and ''model year,'' have the meaning given them in Section 32901 of Chapter 329 of Title 49 of the United States Code,49 U.S.C. 32901.

2. ''Cargo-carrying volume,'' ''gross vehicle weight rating'' (GVWR), and ''passenger-carrying volume'' are used as defined in 49 CFR 523.2.

3. ''Basic engine'' has the meaning given in 40 CFR 600.002–85(a)(21). When identifying a basic engine, respondent should provide the following information:

(i) Engine displacement (in liters). If the engine has variable displacement (i.e., cylinder deactivation) the respondent should provide both the minimum and maximum engine displacement.

(ii) Number of cylinders or rotors.

(iii) Number of valves per cylinder.

(iv) Cylinder configuration (V, in-line, etc.).

(v) Other engine characteristics, abbreviated as follows:

A—Atkinson cycle
AM—Atkinson/Miller cycle
D—Diesel cycle
M—Miller cycle
O—Otto cycle
OA—Otto/Atkinson cycle
V—V-shaped
I—Inline
R—Rotary
DI—Direct injection
IDI—Indirect injection
MPFI—Multipoint fuel injection
PFI—Port fuel injection
SEFI—Sequential electronic fuel injection
SIDI—Stoichiometric spark ignition direct injection
TBI—Throttle body fuel injection
NA—Naturally aspirated
T—Turbocharged
S—Supercharged
FFS—Feedback fuel system
2S—Two-stroke engines
C—Camless
OHV—Overhead valve
SOHC—Single overhead camshaft
DOHC—Dual overhead camshafts
VVT—Variable valve timing
VVLT—Variable valve lift and timing
VCT—Variable cam timing
CYDA—Cylinder deactivation
IVT—Intake valve throttling
CVA—Camless valve actuation
VCR—Variable compression ratio
LBFB—lean burn-fast burn combustion
DCL—Dual cam lobes
E—Exhaust continuous phasing
EIE—Equal continuous intake and exhaust phasing
ICP—Intake continuous phasing
IIE—Independent continuous intake and exhaust
CV—Continuously variable valve lift
F—Fixed valve lift
SVI—Stepped variable intake with 2 or more fixed profiles
SVIE—Stepped variable intake and exhaust with 2 or more fixed profiles

4. ''Domestically manufactured'' is used as defined in Section 32904(b)(2) of Chapter 329, 49 U.S.C. 32904(b)(2).

5. ''Footprint'' means the product of average track width (measured in inches and rounded to the nearest tenth of an inch) times wheelbase (measured in inches and rounded to the nearest tenth of an inch) divided by 144 and then rounded to the nearest tenth of a square foot. For purposes of this definition, track width is the lateral distance between the centerlines of the base tires at ground, including the camber angle. For purposes of this definition, wheelbase is the longitudinal distance between front and rear wheel centerlines.

6. ''Passenger car'' means an automobile of the type described in 49 CFR part 523.3 and 523.4.

7. A ''model'' of passenger car is a line, such as the Chevrolet Impala, Ford Fusion, Honda Accord, etc., which exists within a manufacturer's fleet.

8. ''Model Type'' is used as defined in 40 CFR 600.002–85(a)(19).

9. ''Percent fuel economy improvements'' means that percentage which corresponds to the amount by which respondent could improve the fuel economy of vehicles in a given model or class through the application of a specified technology, averaged over all vehicles of that model or in that class which feasibly could use the technology. Projections of percent fuel economy improvement should be based on the assumption of maximum efforts by respondent to achieve the highest possible fuel economy increase through the application of the technology. The baseline for determination of percent fuel economy improvement is the level of technology and vehicle performance with respect to acceleration and gradeability for respondent's 2007 model year passenger cars and light trucks in the equivalent class.

10. ''Percent production implementation rate'' means that percentage which corresponds to the maximum number of passenger cars of a specified class, which could feasibly employ a given type of technology if respondent made maximum efforts to apply the technology by a specified model year.

11. ''Production percentage'' means the percent of respondent's passenger cars of a specified model projected to be manufactured in a specified model year.

12. ''Project'' or ''projection'' refers to the best estimates made by respondent, whether or not based on less than certain information.

13. ''Redesign'' means any change, or combination of changes, to a vehicle that would change its weight by 50 pounds or more or change its frontal area or aerodynamic drag coefficient by 2 percent or more.

14. ''Relating to'' means constituting, defining, containing, explaining, embodying, reflecting, identifying, stating, referring to, dealing with, or in any way pertaining to.

15. ''Respondent'' means each manufacturer (including all its divisions) providing answers to the questions set forth in this appendix, and its officers, employees, agents or servants.

16. ''Test Weight'' is used as defined in 40 CFR 86.082–2.

17. ''Track Width'' means the lateral distance between the centerlines of the base tires at ground, including the camber angle.

18. ''Transmission class'' is used as defined in 40 CFR 600.002–85(a)(22). When identifying a transmission class, respondent also must indicate whether the type of transmission, and whether it is equipped with a lockup torque converter (LUTC), a split torque converter (STC), and/or a wide gear ratio range (WR) and specify the number of forward gears or whether the transmissions a continuously variable design (CVT). If the transmission is of a hybrid type, that should also be indicated. Other descriptive information may also be added, as needed.

19. ''Truckline'' means the name assigned by the Environmental Protection Agency to a different group of vehicles within a make or car division in accordance with that agency's 2001 model year pickup, van (cargo vans and passenger vans are considered separate truck lines), and special purpose vehicle criteria.

20. ''Variants of existing engines'' means versions of an existing basic engine that differ from that engine in terms of displacement, method of aspiration, induction system or that weigh at least 25 pounds more or less than that engine.

21. ''Wheelbase'' means the longitudinal distance between front and rear wheel centerlines.

II. Assumptions

All assumptions concerning emission standards, damageability regulations, safety standards, etc., should be listed and described in detail by the respondent.

III. Specifications—Passenger Car Data

Go to *ftp://ftpserver.volpe.dot.gov/pub/CAFE/templates/* for spreadsheet templates. (If there are difficulties in downloading these templates, contact Ken Katz at (202) 366–0846.)

1. Identify all passenger car models currently offered for sale in MY 2007 whose production you project discontinuing before MY 2010 and identify the last model year in which each will be offered.

2. Identify all basic engines offered by respondent in MY 2007 passenger cars which respondent projects it will cease to offer for sale in passenger cars before MY 2010, and identify the last model year in which each will be offered.

3. For each model year 2007–2017, list all projected car lines and provide the information specified below for each model type. Model types that are essentially identical except for their nameplates (e.g., Ford Fusion/Mercury Milan) may be combined into one item. Engines having the same displacement but belonging to different engine families are to be grouped separately. Within the fleet, the vehicles are to be sorted first by car line, second by basic engine, and third by transmission type. For each model type, a specific indexed engine and transmission are to be identified. As applicable, an indexed predecessor model type is also to be identified. Spreadsheet templates can be found at *ftp://ftpserver.volpe.dot.gov/pub/CAFE/templates/*. These templates include codes and definitions for the data that the agency is seeking, including, but not limited to the following:

a. General Information

1. Number—a unique number assigned to each model

2. Manufacturer—manufacturer abbreviation (e.g., TOY)

3. Model—name of model (e.g., Camry)

4. Nameplate—vehicle nameplate (e.g., Camry Solara)

5. Fuel Economy—measured in miles per gallon; weighted (FTP + highway) fuel economy

6. Actual FE (FFVs)—measured in miles per gallon; for flexible fuel vehicles, fuel economy when vehicle is operated on gasoline only

7. Engine Code—unique number assigned to each engine

A. Manufacturer—manufacturer abbreviation (e.g., GMC, FMC, HON)

B. Name—name of engine

C. Configuration—classified as V = V4, V6, V8, V10 or V12; I = inline; R = rotary

D. Fuel—classified as CNG = compressed natural gas, D = diesel, E = electricity, E85 = ethanol flexible-fuel, E100 = neat ethanol, G = gasoline, H = hydrogen, LNG = liquefied natural gas, LPG = propane, M85 = methanol flexible-fuel, M100 = neat methanol

E. Engine's country of origin

F. Engine Oil Viscosity—typical values as text include 0W20, 5W20, etc.; ratio between the applied shear stress and the rate of shear, which measures the resistance of flow of the engine oil (as per SAE Glossary of Automotive Terms)

G. Cycle—combustion cycle of engine. Classified as A = Atkinson, AM = Atkinson/Miller, D = Diesel, M = Miller, O = Otto, OA = Otto/Atkinson

H. Air/Fuel Ratio—the weighted (FTP + highway) air/fuel ratio (mass): a number generally around 14.7

I. Fuel System—mechanism that delivers fuel to engine. Classified as DI = direct injection, IDI = indirect injection, MPFI = multipoint fuel injection, PFI = port fuel injection, SEFI = sequential electronic fuel injection, SIDI = Stoichiometric spark ignition direct injection, TBI = throttle body fuel injection

J. Aspiration—based on breathing or induction process of engine (as per SAE Automotive Dictionary). Classified as NA = naturally aspirated,S = supercharged, T = turbocharged

K. Valvetrain Design—describes design of the total mechanism from camshaft to valve of an engine that actuates the lifting and closing of a valve (as per SAE Glossary of Automotive Terms). Classified as C = camless, DOHC = dual overhead cam, OHV = overhead valve,SOHC = single overhead cam

L. Valve Actuation/Timing—based on valve opening and closing points in the operating cycle (as per SAE J604). Classified as CC = continuously controlled, EIE = equal continuous intake and exhaust phasing,DCL = dual cam lobes, E = exhaust continuous phasing, F = fixed, ICP = intake continuous phasing, IIE = independent continuous intake and exhaust phasing, or other designation, VCT = variable cam timing, VVTE = variable valve timing, exhaust

M. Valve Lift—describes the manner in which the valve is raised during combustion (as per SAE Automotive Dictionary). Classified as CV = continuously variable (throttled), F = fixed, SVI = stepped variable intake with 2 or more fixed profiles, SVIE = stepped variable intake and exhaust with 2 or more fixed profiles, or other designation

N. Cylinders—the number of engine cylinders. An integer equaling 3, 4, 5, 6, 8, 10 or 12

O. Valves/Cylinder—the number of valves per cylinder. An integer from 2 through 5

P. Deactivation—weighted (FTP + highway) aggregate degree of deactivation. For example, enter 0.25 for deactivation of half the cylinders over half the drive cycle, and enter 0 for no valve deactivation

Q. Displacement—total volume displaced by a piston in a single stroke, measured in liters

R. Compression Ratio (min)—typically a number around 8; for fixed CR engines, should be identical to maximum CR

S. Compression Ratio (max)—a number between 8 and 14; for fixed CR engines, should be identical to minimum CR

T. Horsepower—the maximum power of the engine, measured as horsepower

U. Torque—the maximum torque of the engine, measured as ft-lb.

8. Transmission Code—an integer; unique number assigned to each transmission

A. Manufacturer—manufacturer abbreviation (e.g., GMC, FMC, HON)
B. Name—name of transmission
C. Country of origin—where the transmission is manufactured
D. Type—type of transmission. Classified as C = clutch, CVT1 = belt or chain CVT, CVT2 = other CVT, T = torque converter
E. Number of Forward Gears—integer indicating number of forward gears (or blank or ''CVT'' for CVT)
F. Control—classified as A = automatic, M = manual; ASMT would be coded as Type = C, Control = A
G. Logic—indicates aggressivity of automatic shifting. Classified as A = aggressive, C = conventional U.S.

9. Origin—classification (under CAFE program) as domestic or import, listed as D = domestic, I = import

b. Sales—actual and projected U.S. production for MY2007 to MY 2017 inclusive, measured in number of vehicles

c. Vehicle Information

1. Style—classified as Sedan; Coupe; Hatchback; Wagon; or Convertible
2. Class—classified as Two-Seater Car; Mini-Compact Car; Subcompact Car; Compact Car; Midsize Car; Large Car; Small Station Wagon; Midsize Station Wagon; or Large Station Wagon
3. Structure—classified as either Ladder or Unibody
4. Drive—classified as A = all-wheel drive; F = front-wheel drive; R = rear-wheel-drive; 4 = 4-wheel drive
5. Length—measured in inches; defined per SAE J1100, L103 (Sept. 2005)
6. Width—measured in inches; defined per SAE J1100, W116 (Sept. 2005)
7. Wheelbase—measured in inches; defined per SAE J1100, L101 (Sept. 2005)
8. Track Width (front)—measured in inches; defined per SAE J1100, W101–1 (Sept. 2005), and clarified above
9. Track Width (rear)—measured in inches; defined per SAE J1100, W101–2(Sept. 2005), and clarified above
10. Footprint—wheelbase times average track width; measured in square feet, clarified above
11. Running Clearance—measured in centimeters; defined per 49 CFR 323.5
12. Front Axle Clearance—measured in centimeters; defined per 49 CFR 323.5
13. Rear Axle Clearance—measured in centimeters; defined per 49 CFR 323.5
14. Angle of Approach—measured in degrees; defined per 49 CFR 323.5
15. Breakover Angle—measured in degrees; defined per 49 CFR 323.5
16. Angle of Departure—measured in degrees; defined per 49 CFR 323.5
17. Curb Weight—total weight of vehicle including batteries, lubricants, and other expendable supplies but excluding the driver, passengers, and other payloads, measured in pounds; per SAE J1100 (Sept. 2005)
18. Test Weight—weight of vehicle as tested, including the driver, operator (if necessary), and all instrumentation (as per SAE J1263); measured in pounds
19. GVWR—Gross Vehicle Weight Rating; maximum weight of loaded vehicle, including passengers and cargo; measured in pounds
20. Towing Capacity (Standard)—measured in pounds
21. Towing Capacity (Maximum)—measured in pounds
22. Payload—measured in pounds
23. Cargo volume behind the front row—measured in cubic feet, defined per Table 28 of SAE J1100 (Sept. 2005)
24. Cargo volume behind the second row—measured in cubic feet, defined per Table 28 of SAE J1100 (Sept. 2005)
25. Cargo volume behind the third row—measured in cubic feet, defined per Table 28 of SAE J1100 (Sept. 2005)
26. Enclosed Volume—measured in cubic feet
27. Passenger Volume—measured in cubic feet; the volume measured using SAE J1100 as per EPA Fuel Economy regulations (40 CFR 600.315–82, ''Classes of Comparable Automobiles''). This is the number that manufacturers calculate and submit to EPA.
28. Cargo Volume Index—defined per Table 28 of SAE J1100 (Sept. 2005)
29. Luggage Capacity—measured in cubic feet; defined per SAE J1100, V1 (Sept. 2005)
30. Frontal Area—a measure of the wind profile of the vehicle, typically calculated as the height times width of a vehicle body, e.g. 35 square feet.
31. Aerodynamic Drag Coefficient, C_d—an experimentally derived, dimensionless coefficient that relates the motion resistance force created by the air drag over the entire surface of a moving vehicle to the force of dynamic air pressure acting only over the vehicle's frontal area e.g., 0.25.
32. Tire Rolling Resistance, C_{rr}—an experimentally derived, dimensionless coefficient that relates the motion resistance force force due to tire energy losses (e.g., deflection, scrubbing, slip, and air drag) to a vehicle's weight e.g., 0.0012.
33. Seating (max)—number of usable seat belts before folding and removal of seats (where accomplished without special tools); provided in integer form
34. Fuel Capacity—measured in gallons of diesel fuel or gasoline; MJ (LHV) of other fuels (or chemical battery energy)
35. Electrical System Voltage—measured in volts, e.g., 12 volt, 42 volts 2005)

d. MSRP—measured in dollars (2007); actual and projected average MSRP (sales-weighted, including options) for MY2007 to MY 2017 inclusive

e. Hybridization

1. Type of hybridization of the vehicle, if any—classified as E = electric, H = hydraulic
2. Voltage (volts) or, for hydraulic hybrids, pressure (psi)
3. Energy storage capacity—measured in MJ
4. Battery type—Classified as NiMH = Nickel Metal Hydride; Li-ion = Lithium Ion
5. Percentage of breaking energy recovered and stored
6. Percentage of maximum motive power provided by stored energy system

f. Planning and Assembly

1. US/Canadian/Mexican Content—measured as a percentage; overall percentage, by value, that originated in U.S., Canada and Mexico
2. Final Assembly City
3. Final Assembly State/Province (if applicable)
4. Final Assembly Country
5. Predecessor—number and name of model upon which current model is based, if any
6. Last Freshening—model year
7. Next Freshening—model year
8. Last Redesign—model year; where redesign means any change, or combination of changes to a vehicle that would change its weight by 50 pounds or more or change its frontal area or aerodynamic drag coefficient by 2 percent or more.
9. Next Redesign—model year
10. Employment Hours Per Vehicle—number of hours of U.S. labor applied per vehicle produced

The agency also requests that each manufacturer provide an estimate of its overall passenger car CAFE for each model year. This estimate should be included as an entry in the spreadsheets that are submitted to the agency.

4. Does respondent project introducing any variants of existing basic engines or any new basic engines, other than those mentioned in your response to Question 3, in its passenger car fleets in MYs 2007–2017? If so, for each basic engine or variant indicate:

a. The projected year of introduction,

b. Type (e.g., spark ignition, direct injection diesel, 2-cycle, alternative fuel use),

c. Displacement (If engine has variable displacement, please provide the minimum and maximum displacement),

d. Type of induction system (e.g., fuel injection with turbocharger, naturally aspirated),

e. Cylinder configuration (e.g., V–8, V–6, I–4),

f. Number of valves per cylinder (e.g., 2, 3, 4),

g. Valvetrain design (e.g., overhead valve, overhead camshaft),

h. Valve technology (e.g., variable valve timing, variable valve lift and timing, intake valve throttling, camless valve actuation, etc.),

i. Horsepower and torque ratings,

j. Models in which engines are to be used, giving the introduction model year for each model if different from ''a,'' above.

5. Relative to MY 2007 levels, for MYs 2007–2017, please provide information, by carline and as an average effect on a manufacturer's entire passenger car fleet, on the weight and/or fuel economy impacts of the following standards or equipment:

a. Federal Motor Vehicle Safety Standard (FMVSS 208) Automatic Restraints,

b. FMVSS 201 Occupant Protection in Interior Impact,

c. Voluntary installation of safety equipment (e.g., antilock brakes),

d. Environmental Protection Agency regulations,

e. California Air Resources Board requirements,

f. Other applicable motor vehicle regulations affecting fuel economy.

6. For each of the model years 2007–2017, and for each passenger car model projected to be manufactured by respondent (if answers differ for the various models), provide the requested information on new technology applications for each of items ''6a'' through ''6r'' listed below:

(i) description of the nature of the technological improvement;

(ii) the percent fuel economy improvement averaged over the model;

(iii) the basis for your answer to 6(ii), (e.g., data from dynamometer tests conducted by respondent, engineering analysis, computer simulation, reports of test by others);

(iv) the percent production implementation rate and the reasons limiting the implementation rate;

(v) a description of the 2007 baseline technologies and the 2007 implementation rate; and

(vi) the reasons for differing answers you provide to items (ii) and (iv) for different models in each model year. Include as a part of your answer to 6(ii) and 6(iv) a tabular presentation, a sample portion of which is shown in Table III–A.

a. Improved automatic transmissions. Projections of percent fuel economy improvements should include benefits of lock-up or bypassed torque converters, electronic control of shift points and torque converter lock-up, and other measures which should be described.

b. Improved manual transmissions. Projections of percent of fuel economy improvement should include the benefits of increasing mechanical efficiency, using improved transmission lubricants, and other measures (specify).

c. Overdrive transmissions. If not covered in ''a'' or ''b'' above, project the percentage of fuel economy improvement attributable to overdrive transmissions (integral or auxiliary gear boxes), two-speed axles, or other similar devices intended to increase the range of available gear ratios. Describe the devices to be used and the application by model, engine, axle ratio, etc.

d. Use of engine crankcase lubricants of lower viscosity or with additives to improve friction characteristics or accelerate engine break-in, or otherwise improved lubricants to lower engine friction horsepower. When describing the 2007 baseline, specify the viscosity of and any fuel economy-improving additives used in the factory-fill lubricants.

e. Reduction of engine parasitic losses through improvement of engine-driven accessories or accessory drives. Typical engine-driven accessories include water pump, cooling fan, alternator, power steering pump, air conditioning compressor, and vacuum pump.

f. Reduction of tire rolling losses, through changes in inflation pressure, use of materials or constructions with less hysteresis, geometry changes (e.g., reduced aspect ratio), reduction in sidewall and tread deflection, and other methods. When describing the 2007 baseline, include a description of the tire types used and the percent usage rate of each type.

g. Reduction in other driveline losses, including losses in the non-powered wheels, the differential assembly, wheel bearings, universal joints, brake drag losses, use of improved lubricants in the differential and wheel bearing, and optimizing suspension geometry (e.g., to minimize tire scrubbing loss).

h. Reduction of aerodynamic drag.

i. Turbocharging or supercharging.

j. Improvements in the efficiency of 4-cycle spark ignition engines including (1) increased compression ratio; (2) leaner air-to-fuel ratio; (3) revised combustion chamber configuration; (4) fuel injection; (5) electronic fuel metering; (6) interactive electronic control of engine operating parameters (spark advance, exhaust gas recirculation, air-to-fuel ratio); (8) variable valve timing or valve lift; (9) multiple valves per cylinder; (10) cylinder deactivation; (11) friction reduction by means such as low tension piston rings and roller cam followers; (12) higher temperature operation; and (13) other methods (specify).

k. Direct injection gasoline engines.

l. Naturally aspirated diesel engines, with direct or indirect fuel injection.

m. Turbocharged or supercharged diesel engines with direct or indirect fuel injection.

n. Stratified-charge reciprocating or rotary engines, with direct or indirect fuel injection.

o. Two cycle spark ignition engines.

p. Use of hybrid drivetrains.

q. Use of fuel cells; provide a thorough description of the fuel cell technology employed, including fuel type and power output.

r. Other technologies for improving fuel economy or efficiency.

7. For each model of respondent's passenger car fleet projected to be manufactured in each of MYs 2007–2017, describe the methods used to achieve reductions in average test weight. For each specified model year and model, describe the extent to which each of the following methods for reducing vehicle weight will be used. Separate listings are to be used for 4x2 passenger cars, 4x4 passenger cars, and all-wheel drive passenger cars.

a. Substitution of materials.

b. ''Downsizing'' of existing vehicle design to reduce weight while maintaining interior roominess and comfort for passengers, and utility, i.e., the same or approximately the same, payload and cargo volume, using the same basic body configuration and driveline layout as current counterparts.

c. Use of new vehicle body configuration concepts, which provides reduced weight for approximately the same payload and cargo volume.

8. Indicate any MY 2007–2017 passenger car model types that have higher average test weights than comparable MY 2006 model types. Describe the reasons for any weight increases (e.g., increased option content, less use of premium materials) and provide supporting justification.

9. For each new or redesigned vehicle identified in response to Question 3 and each new engine or fuel economy improvement identified in your response to Questions 3, 4, 5, and 6, provide your best estimate of the

following, in terms of constant 2007 dollars:

(a) Total capital costs required to implement the new/redesigned model or improvement according to the implementation schedules specified in your response. Subdivide the capital costs into tooling, facilities, launch, and engineering costs.

(b) The maximum production capacity, expressed in units of capacity per year, associated with the capital expenditure in (a) above. Specify the number of production shifts on which your response is based and define ''maximum capacity'' as used in your answer.

(c) The actual capacity that is planned to be used each year for each new/redesigned model or fuel economy improvement.

(d) The increase in variable costs per affected unit, based on the production volume specified in (b) above.

(e) The equivalent retail price increase per affected vehicle for each new/redesigned model or improvement. Provide an example describing methodology used to determine the equivalent retail price increase.

10. Please provide respondent's actual and projected U.S. passenger car sales, 4x2 and 4x4, 0–8,500 lbs. GVWR for each model year from 2007 through 2017, inclusive. Please subdivide the data into the following vehicle categories:

i. Two-Seater Car (e.g., Chevrolet Corvette, Honda S2000, Porsche Boxter)
ii. Mini-Compact Car (e.g., Audi TT, Mitsubishi Eclipse, Mini Cooper)
iii. Compact Car (e.g., Ford Focus, VW Golf, Kia Rio)
iv. Midsize Car (e.g., Chevrolet Malibu, Honda Accord, Toyota Camry)
v. Large Car (e.g., Ford Crown Victoria, Cadillac DTS, Mercedes Maybach)
vi. Small Station Wagon (e.g., BMW 325 Sport Wagon, Subaru Impreza Wagon, Pontiac Vibe/Toyota Matrix)
vii. Midsize Station Wagon (e.g., Saab 9–5 Wagon, Volvo V70 Wagon, Jaguar X-Type Wagon)
viii. Large Station Wagon (e.g., Mercedes E-Class Wagon, Dodge Magnum, BMW 530 XiT Wagon)

See Table III–B for a sample format.

11. Please provide your estimates of projected *total industry* U.S. passenger car sales for each model year from 2007 through 2017, inclusive. Please subdivide the data into 4x2, 4x4 and all-wheel drive sales and into the vehicle categories listed in the sample format in Table III–C.

12. Please provide your company's assumptions for U.S. gasoline and diesel fuel prices during 2007 through 2017.

13. Please provide projected production capacity available for the North American market (at standard production rates) for each of your company's passenger carline designations during MYs 2007–2017.

14. Please provide your estimate of production lead-time for new models, your expected model life in years, and the number of years over which tooling costs are amortized.

Note: The parenthetical numbers in Tables III–A refer to the items in Section III, *Specifications.*

TABLE III–A.—TECHNOLOGY IMPROVEMENTS

Technological improvement	Baseline technology	Percent fuel economy improvement, %	Basis for improvement estimate	Models on which technology is applied	Production share of model with technological improvement				
					2007	2008	2009	2010	2011+
(6a.) Improved Auto Trans:									
A5	....	4.0	....	....	20	35	50	60	80
A6	....	4.5	....	....	15	20	30	40	55
A7	....	5.0	....	....	0	0	15	25	35
(6b.) Improved Manual Trans:									
M5	....	1.0	....	....	12	15	20	25	32
M6	....	0.7	....	....	0	0	0	8	10

TABLE III–B.—ACTUAL AND PROJECTED U.S. PASSENGER CAR SALES

Amalgamated Motors passenger car sales projections						
Model line	Model year					
	2007	2008	2009	2010	2011	2012+
Two-Seater	43,500	....	....	....	....	....
Mini-Compact	209,340	....	....	....	....	....
Subcompact	120,000	....	....	....	....	....
Compact	60,000	....	....	....	....	....
Midsize	20,000	....	....	....	....	....
Large	29,310	....	....	....	....	....
Small Station Wagon	54,196	....	....	....	....	....
Midsize Station Wagon	38,900	....	....	....	....	....
Large Station Wagon	24,000	....	....	....	....	....
Total	TBD	....	....	....	....	....

TABLE III–C.—TOTAL U.S. PASSENGER CAR SALES

Model type	2007	2008	2009	2010	2011	2012+
Two-Seater	....	....	....	....	....	....
Mini-Compact	....	....	....	....	....	....
Subcompact	....	....	....	....	....	....

TABLE III–C.—TOTAL U.S. PASSENGER CAR SALES—Continued

Model type	2007	2008	2009	2010	2011	2012+
Compact						
Midsize						
Large						
Small Station Wagon						
Midsize Station Wagon						
Large Station Wagon						
Total						

IV. Specifications—Light Truck Data

Go to *ftp://ftpserver.volpe.dot.gov/pub/CAFE/templates/* for spreadsheet templates. (If there are difficulties in downloading these templates, contact Ken Katz at (202) 366–0846.)

1. Identify all light truck models currently offered for sale in MY 2007 whose production you project discontinuing before MY 2010 and identify the last model year in which each will be offered.

2. Identify all basic engines offered by respondent in MY 2007 light trucks which respondent projects it will cease to offer for sale in light trucks before MY 2010, and identify the last model year in which each will be offered.

3. For each model year 2010–2017, list all projected light truck lines and provide the information specified below for each model type. Model types that are essentially identical except for their nameplates (e.g., Chrysler Town & Country/Dodge Caravan) may be combined into one item. Engines having the same displacement but belonging to different engine families are to be grouped separately. Within the fleet, the vehicles are to be sorted first by truck line, second by basic engine, and third by transmission type. For each model type, a specific indexed engine and transmission are to be identified. As applicable, an indexed predecessor model type is also to be identified. Spreadsheet templates can be found at *ftp://ftpserver.volpe.dot.gov/pub/CAFE/templates/.* These templates include codes and definitions for the data that the Agency is seeking, including, but not limited to the following:

a. General Information

1. Number—a unique number assigned to each model

2. Manufacturer—manufacturer abbreviation (e.g., GMC)

3. Model—name of model (e.g., Escalade)

4. Nameplate—vehicle nameplate (e.g., Escalade ESV)

5. Fuel Economy—measured in miles per gallon; weighted (FTP + highway) fuel economy

6. Actual FE (FFVs)—measured in miles per gallon; for flexible fuel vehicles, fuel economy when vehicle is operated on gasoline only

7. Engine Code—unique number assigned to each engine

A. Manufacturer—manufacturer abbreviation (e.g., GMC, FMC, HON)
B. Name—name of engine
C. Configuration—classified as V = V4, V6, V8, V10 or V12; I = inline; R = rotary
D. Fuel—classified as CNG = compressed natural gas, D = diesel, E = electricity, E85 = ethanol flexible-fuel, E100 = neat ethanol, G = gasoline, H = hydrogen, LNG = liquefied natural gas, LPG = propane,M85 = methanol flexible-fuel, M100 = neat methanol
E. Engine's country of origin
F. Engine Oil Viscosity—typical values as text include 0W20, 5W20, etc.; ratio between the applied shear stress and the rate of shear, which measures the resistance of flow of the engine oil (as per SAE Glossary of Automotive Terms)
G. Cycle—combustion cycle of engine. Classified as A = Atkinson, AM = Atkinson/Miller, D = Diesel, M = Miller, O = Otto, OA = Otto/Atkinson
H. Air/Fuel Ratio—the weighted (FTP + highway) air/fuel ratio (mass): a number generally around 14.7
I. Fuel System—mechanism that delivers fuel to engine. Classified as DI = direct injection, IDI = indirect injection, MPFI = multipoint fuel injection, PFI = port fuel injection, SEFI = sequential electronic fuel injection, SIDI = Stoichiometric spark ignition direct injection, TBI = throttle body fuel injection
J. Aspiration—based on breathing or induction process of engine (as per SAE Automotive Dictionary). Classified as NA = naturally aspirated, S = supercharged, T = turbocharged
K. Valvetrain Design—describes design of the total mechanism from camshaft to valve of an engine that actuates the lifting and closing of a valve (as per SAE Glossary of Automotive Terms). Classified as C = camless, DOHC = dual overhead cam, OHV = overhead valve, SOHC = single overhead cam
L. Valve Actuation/Timing—based on valve opening and closing points in the operating cycle (as per SAE J604). Classified as CC = continuously controlled, EIE = equal continuous intake and exhaust phasing,DCL = dual cam lobes, E = exhaust continuous phasing, F = fixed, ICP = intake continuous phasing, IIE = independent continuous intake and exhaust phasing, or other designation, VCT = variable cam timing, VVTE = variable valve timing, exhaust
M. Valve Lift—describes the manner in which the valve is raised during combustion (as per SAE Automotive Dictionary). Classified as CV = continuously variable (throttled), F = fixed, SVI = stepped variable intake with 2 or more fixed profiles, SVIE = stepped variable intake and exhaust with 2 or more fixed profiles, or other designation
N. Cylinders—the number of engine cylinders. An integer equaling 3, 4, 5, 6, 8, 10 or 12
O. Valves/Cylinder—the number of valves per cylinder. An integer from 2 through 5
P. Deactivation—weighted (FTP + highway) aggregate degree of deactivation. For example, enter 0.25 for deactivation of half the cylinders over half the drive cycle, and enter 0 for no valve deactivation
Q. Displacement—total volume displaced by a piston in a single stroke, measured in liters
R. Compression Ratio (min)—typically a number around 8; for fixed CR engines, should be identical to maximum CR
S. Compression Ratio (max)—a number between 8 and 14; for fixed CR engines, should be identical to minimum CR
T. Horsepower—the maximum power of the engine, measured as horsepower.
U. Torque—the maximum torque of the engine, measured as ft-lb.

8. Transmission Code—an integer; unique number assigned to each transmission

A. Manufacturer—manufacturer abbreviation (e.g., GMC, FMC, HON)
B. Name—name of transmission
C. Country of origin—where the transmission is manufactured
D. Type—type of transmission. Classified as C = clutch, CVT1 = belt or chain CVT, CVT2 = other CVT, T = torque converter
E. Number of Forward Gears—integer indicating number of forward gears (or blank or ''CVT'' for CVT)
F. Control—classified as A = automatic, M = manual; ASMT would be coded as Type = C, Control = A
G. Logic—indicates aggressivity of automatic shifting. Classified as A = aggressive, C = conventional U.S.

9. Origin—classification (under CAFE program) as domestic or import, listed as D = domestic, I = import

b. Sales—Actual and Projected U.S. Production for MY2010 to MY 2017 Inclusive, Measured in Number of Vehicles

c. Vehicle Information

1. Style—classified as Crossover; Pickup; Sport Utility; or Van
2. Class—classified as Cargo Van; Crossover Vehicle; Large Pickup; Midsize Pickup; Minivan; Passenger Van; Small Pickup; Sport Utility Vehicle; or Sport Utility Truck
3. Structure—classified as either Ladder or Unibody
4. Drive—classified as A = all-wheel drive; F = front-wheel drive; R = rear-wheel-drive; 4 = 4-wheel drive
5. Length—measured in inches; defined per SAE J1100, L103 (Sept. 2005)
6. Width—measured in inches; defined per SAE J1100, W116 (Sept. 2005)
7. Wheelbase—measured in inches; defined per SAE J1100, L101 (Sept. 2005)
8. Track Width (front)—measured in inches; defined per SAE J1100, W101–1 (Sept. 2005), and clarified above
9. Track Width (rear)—measured in inches; defined per SAE J1100, W101–2(Sept. 2005), and clarified above
10. Footprint—wheelbase times average track width; measured in square feet, clarified above
11. Running Clearance—measured in centimeters; defined per 49 CFR 323.5
12. Front Axle Clearance—measured in centimeters; defined per 49 CFR 323.5
13. Rear Axle Clearance—measured in centimeters; defined per 49 CFR 323.5
14. Angle of Approach—measured in degrees; defined per 49 CFR 323.5
15. Breakover Angle—measured in degrees; defined per 49 CFR 323.5
16. Angle of Departure—measured in degrees; defined per 49 CFR 323.5
17. Curb Weight—total weight of vehicle including batteries, lubricants, and other expendable supplies but excluding the driver, passengers, and other payloads, measured in pounds; per SAE J1100 (Sept. 2005)
18. Test Weight—weight of vehicle as tested, including the driver, operator(if necessary), and all instrumentation (as per SAE J1263); measured in pounds
19. GVWR—Gross Vehicle Weight Rating; maximum weight of loaded vehicle, including passengers and cargo; measured in pounds
20. Towing Capacity (Standard)—measured in pounds
21. Towing Capacity (Maximum)—measured in pounds
22. Payload—measured in pounds
23. Cargo volume behind the front row—measured in cubic feet, defined per Table 28 of SAE J1100 (Sept. 2005)
24. Cargo volume behind the second row—measured in cubic feet, defined per Table 28 of SAE J1100 (Sept. 2005)
25. Cargo volume behind the third row—measured in cubic feet, defined per Table 28 of SAE J1100 (Sept. 2005)
26. Enclosed Volume—measured in cubic feet
27. Passenger Volume—measured in cubic feet; the volume measured using SAE J1100 as per EPA Fuel Economy regulations (40 CFR 600.315–82, ''Classes of Comparable Automobiles''). This is the number that manufacturers calculate and submit to EPA.
28. Cargo Volume Index—defined per Table 28 of SAE J1100 (Sept. 2005)
29. Luggage Capacity—measured in cubic feet; defined per SAE J1100, V1 (Sept. 2005)
30. Frontal Area—a measure of the wind profile of the vehicle, typically calculated as the height times width of a vehicle body, e.g. 35 square feet.
31. Aerodynamic Drag Coefficient, C_d—an experimentally derived, dimensionless coefficient that relates the motion resistance force created by the air drag over the entire surface of a moving vehicle to the force of dynamic air pressure acting only over the vehicle's frontal area e.g., 0.25.
32. Tire Rolling Resistance, Cr_{rr}—an experimentally derived, dimensionless coefficient that relates the motion resistance force force due to tire energy losses (e.g., deflection, scrubbing, slip, and air drag) to a vehicle's weight e.g., 0.0012.
33. Seating (max)—number of usable seat belts before folding and removal of seats (where accomplished without special tools); provided in integer form
34. Fuel Capacity—measured in gallons of diesel fuel or gasoline; MJ (LHV) of other fuels (or chemical battery energy)
35. Electrical System Voltage—measured in volts, e.g., 12 volt, 42 volts 2005

d. MSRP—Measured in Dollars (2007); Actual and Projected Average MSRP (Sales-Weighted, Including Options) for MY2010 to MY 2017 Inclusive

e. Hybridization

1. Type of hybridization of the vehicle, if any—classified as E = electric, H = hydraulic
2. Voltage (volts) or, for hydraulic hybrids, pressure (psi)
3. Energy storage capacity—measured in MJ
4. Battery type—Classified as NiMH = Nickel Metal Hydride; Li-ion = Lithium Ion
5. Percentage of breaking energy recovered and stored
6. Percentage of maximum motive power provided by stored energy system

f. Planning and Assembly

1. U.S./Canadian/Mexican Content—measured as a percentage; overall percentage, by value, that originated in U.S., Canada and Mexico
2. Final Assembly City
3. Final Assembly State/Province (if applicable)
4. Final Assembly Country
5. Predecessor—number and name of model upon which current model is based, if any
6. Last Freshening—model year
7. Next Freshening—model year
8. Last Redesign—model year; where redesign means any change, or combination of changes to a vehicle that would change its weight by 50 pounds or more or change its frontal area or aerodynamic drag coefficient by 2 percent or more.
9. Next Redesign—model year
10. Employment Hours Per Vehicle—number of hours of U.S. labor applied per vehicle produced

The agency also requests that each manufacturer provide an estimate of its overall light truck CAFE for each model year. This estimate should be included as an entry in the spreadsheets that are submitted to the agency.

4. Does respondent project introducing any variants of existing basic engines or any new basic engines, other than those mentioned in your response to Question 3, in its light truck fleets in MYs 2010–2017? If so, for each basic engine or variant indicate:

a. The projected year of introduction,

b. Type (e.g., spark ignition, direct injection diesel, 2-cycle, alternative fuel use),

c. Displacement (If engine has variable displacement, please provide the minimum and maximum displacement),

d. Type of induction system (e.g., fuel injection with turbocharger, naturally aspirated),

e. Cylinder configuration (e.g., V–8, V–6, I–4),

f. Number of valves per cylinder (e.g., 2, 3, 4),

g. Valvetrain design (e.g., overhead valve, overhead camshaft)

h. Valve technology (e.g., variable valve timing, variable valve lift and timing, intake valve throttling, camless valve actuation, etc.)

i. Horsepower and torque ratings,

j. Models in which engines are to be used, giving the introduction model year for each model if different from ''a,'' above.

5. Relative to MY 2007 levels, for MYs 2010–2017, please provide information, by truckline and as an average effect on a manufacturer's entire light truck fleet, on the weight and/or fuel economy impacts of the following standards or equipment:

a. Federal Motor Vehicle Safety Standard (FMVSS 208) Automatic Restraints

b. FMVSS 201 Occupant Protection in Interior Impact

c. Voluntary installation of safety equipment (e.g., antilock brakes)

d. Environmental Protection Agency regulations

e. California Air Resources Board requirements

f. Other applicable motor vehicle regulations affecting fuel economy.

6. For each of the model years 2010–2017, and for each light truck model projected to be manufactured by respondent (if answers differ for the various models), provide the requested information on new technology applications for each of items ''6a'' through ''6r'' listed below:

(i) description of the nature of the technological improvement;

(ii) the percent fuel economy improvement averaged over the model;

(iii) the basis for your answer to 6(ii), (e.g., data from dynamometer tests conducted by respondent, engineering analysis, computer simulation, reports of test by others);

(iv) the percent production implementation rate and the reasons limiting the implementation rate;

(v) a description of the 2007 baseline technologies and the 2007 implementation rate; and

(vi) the reasons for differing answers you provide to items (ii) and (iv) for different models in each model year. Include as a part of your answer to 6(ii) and 6(iv) a tabular presentation, a sample portion of which is shown in Table III–A.

a. Improved automatic transmissions. Projections of percent fuel economy improvements should include benefits of lock-up or bypassed torque converters, electronic control of shift points and torque converter lock-up, and other measures which should be described.

b. Improved manual transmissions. Projections of percent of fuel economy improvement should include the benefits of increasing mechanical efficiency, using improved transmission lubricants, and other measures (specify).

c. Overdrive transmissions. If not covered in ''a'' or ''b'' above, project the percentage of fuel economy improvement attributable to overdrive transmissions (integral or auxiliary gear boxes), two-speed axles, or other similar devices intended to increase the range of available gear ratios. Describe the devices to be used and the application by model, engine, axle ratio, etc.

d. Use of engine crankcase lubricants of lower viscosity or with additives to improve friction characteristics or accelerate engine break-in, or otherwise improved lubricants to lower engine friction horsepower. When describing the 2007 baseline, specify the viscosity of and any fuel economy-improving additives used in the factory-fill lubricants.

e. Reduction of engine parasitic losses through improvement of engine-driven accessories or accessory drives. Typical engine-driven accessories include water pump, cooling fan, alternator, power steering pump, air conditioning compressor, and vacuum pump.

f. Reduction of tire rolling losses, through changes in inflation pressure, use of materials or constructions with less hysteresis, geometry changes (e.g., reduced aspect ratio), reduction in sidewall and tread deflection, and other methods. When describing the 2007 baseline, include a description of the tire types used and the percent usage rate of each type.

g. Reduction in other driveline losses, including losses in the non-powered wheels, the differential assembly, wheel bearings, universal joints, brake drag losses, use of improved lubricants in the differential and wheel bearing, and optimizing suspension geometry (e.g., to minimize tire scrubbing loss).

h. Reduction of aerodynamic drag.

i. Turbocharging or supercharging.

j. Improvements in the efficiency of 4-cycle spark ignition engines including (1) increased compression ratio; (2) leaner air-to-fuel ratio; (3) revised combustion chamber configuration; (4) fuel injection; (5) electronic fuel metering; (6) interactive electronic control of engine operating parameters (spark advance, exhaust gas recirculation, air-to-fuel ratio); (8) variable valve timing or valve lift; (9) multiple valves per cylinder; (10) cylinder deactivation; (11) friction reduction by means such as low tension piston rings and roller cam followers; (12) higher temperature operation; and (13) other methods (specify).

k. Direct injection gasoline engines.

l. Naturally aspirated diesel engines, with direct or indirect fuel injection.

m. Turbocharged or supercharged diesel engines with direct or indirect fuel injection.

n. Stratified-charge reciprocating or rotary engines, with direct or indirect fuel injection.

o. Two cycle spark ignition engines.

p. Use of hybrid drivetrains.

q. Use of fuel cells; provide a thorough description of the fuel cell technology employed, including fuel type and power output.

r. Other technologies for improving fuel economy or efficiency.

7. For each model of respondent's light truck fleet projected to be manufactured in each of MYs 2010–2017, describe the methods used to achieve reductions in average test weight. For each specified model year and model, describe the extent to which each of the following methods for reducing vehicle weight will be used. Separate listings are to be used for 4x2 light trucks, 4x4 light trucks, and all-wheel drive light trucks.

a. Substitution of materials.

b. ''Downsizing'' of existing vehicle design to reduce weight while maintaining interior roominess and comfort for passengers, and utility, i.e., the same or approximately the same, payload and cargo volume, using the same basic body configuration and driveline layout as current counterparts.

c. Use of new vehicle body configuration concepts, which provides reduced weight for approximately the same payload and cargo volume.

8. Indicate any MY 2010–2017 light truck model types that have higher average test weights than comparable MY 2007 model types. Describe the reasons for any weight increases (e.g., increased option content, less use of premium materials) and provide supporting justification.

9. For each new or redesigned vehicle identified in response to Question 3 and each new engine or fuel economy improvement identified in your response to Questions 3, 4, 5, and 6, provide your best estimate of the

following, in terms of constant 2007 dollars:

(a) Total capital costs required to implement the new/redesigned model or improvement according to the implementation schedules specified in your response. Subdivide the capital costs into tooling, facilities, launch, and engineering costs.

(b) The maximum production capacity, expressed in units of capacity per year, associated with the capital expenditure in (a) above. Specify the number of production shifts on which your response is based and define ''maximum capacity'' as used in your answer.

(c) The actual capacity that is planned to be used each year for each new/redesigned model or fuel economy improvement.

(d) The increase in variable costs per affected unit, based on the production volume specified in (b) above.

(e) The equivalent retail price increase per affected vehicle for each new/redesigned model or improvement. Provide an example describing methodology used to determine the equivalent retail price increase.

10. Please provide respondent's actual and projected U.S. light truck sales, 4x2 and 4x4, 0–8,500 lbs. GVWR, and 8,501–10,000 lbs. GVWR for each model year from 2010 through 2017, inclusive. Please subdivide the data into the following vehicle categories:

i. Compact Pickup (e.g., Ford Ranger, Chevrolet Colorado, Nissan Frontier)
ii. Standard Pickup—Light (e.g., Ford F150, Chevrolet Silverado, Toyota Tundra)
iii. Standard Pickup—Heavy (e.g., Ford F250/350, Dodge Ram 2500/3500)
iv. Standard Cargo Van—Light (e.g., Chevrolet Savana, Ford E–150)
v. Standard Cargo Van—Heavy (e.g., Chevrolet G2500, Ford E–250/350, Dodge Sprinter)
vi. Compact Passenger Van/Minivan (e.g., Toyota Sienna, Dodge Caravan, Nissan Quest)
vii. Standard Passenger Van—Light (e.g., GMC Express, Ford E–150)
viii. Standard Passenger Van—Heavy (e.g., Ford E–250/350, Dodge Sprinter)
ix. Compact Sport Utility (e.g., Jeep Wrangler, Toyota RAV4)
x. Mid-size Sport Utility (e.g., Chevrolet Trailblazer, Ford Explorer, Toyota 4Runner)
xi. Full-size Sport Utility (e.g., Chevrolet Tahoe, Ford Expedition, Nissan Titan)
xii. Crossover Vehicle (e.g., Toyota RX 330, Nissan Murano, Acura MDX)
xiii. Sport Utility Truck (e.g., Cadillac Escalade EXT, Honda Ridgeline)

See Table III–B for a sample format.

11. Please provide your estimates of projected *total industry* U.S. light truck sales for each model year from 2010 through 2017, inclusive. Please subdivide the data into 4x2, 4x4, and all-wheel drive sales and into the vehicle categories listed in the sample format in Table III–C.

12. Please provide your company's assumptions for U.S. gasoline and diesel fuel prices during 2010 through 2017.

13. Please provide projected production capacity available for the North American market (at standard production rates) for each of your company's light truckline designations during MYs 2010–2017.

14. Please provide your estimate of production lead-time for new models, your expected model life in years, and the number of years over which tooling costs are amortized.

Note: The parenthetical numbers in Tables IV–A refer to the items in Section IV, *Specifications*.

TABLE IV–A.—TECHNOLOGY IMPROVEMENTS

Technological improvement	Baseline technology	Percent fuel economy improvement, %	Basis for improvement estimate	Models on which technology is applied	Production share of model with technological improvement				
					2010	2011	2012	2013	2014+
(6a.) Improved Auto Trans.:									
A5	....	4.0	....	....	20	35	50	60	80
A6	....	4.5	....	....	15	20	30	40	55
A7	....	5.0	....	....	0	0	15	25	35
(6b.) Improved Manual Trans.:									
M5	....	1.0	....	....	12	15	20	25	32
M6	....	0.7	....	....	0	0	0	8	10

TABLE IV–B.—ACTUAL AND PROJECTED U.S. LIGHT TRUCK SALES

Amalgamated Motors light truck sales projections						
Model line	Model year					
	2010	2011	2012	2013	2014	2015+
Compact Pickup	43,500	....	....	....	....	....
Standard Pickup—Light	209,340	....	....	....	....	....
Standard Pickup—Heavy	120,000	....	....	....	....	....
Standard Cargo Van—Light	20,000	....	....	....	....	....
Standard Cargo Van—Heavy	29,310	....	....	....	....	....
Compact Passenger Van/Minivan	54,196	....	....	....	....	....
Standard Passenger Van—Light	38,900	....	....	....	....	....
Standard Passenger Van—Heavy	24,000	....	....	....	....	....
Compact Sport Utility	125,000	....	....	....	....	....
Mid-size Sport Utility	221,000	....	....	....	....	....
Full-size Sport Utility	165,000	....	....	....	....	....
Crossover Vehicle	98,000	....	....	....	....	....
Sport Utility Truck	10,000	....	....	....	....	....
Total	TBD	....	....	....	....	....

TABLE IV–C.—TOTAL U.S. LIGHT TRUCK SALES

Model type	2010	2011	2012	2013	2014	2015	2016+
Compact Pickup	....	....	....	....	....	....	....
Standard Pickup—Light	....	....	....	....	....	....	....
Standard Pickup—Heavy	....	....	....	....	....	....	....
Standard Cargo Van—Light	....	....	....	....	....	....	....
Standard Cargo Van—Heavy	....	....	....	....	....	....	....
Compact Passenger Van/Minivan	....	....	....	....	....	....	....
Standard Passenger Van—Light	....	....	....	....	....	....	....
Standard Passenger Van—Heavy	....	....	....	....	....	....	....
Compact Sport Utility	....	....	....	....	....	....	....
Mid-size Sport Utility	....	....	....	....	....	....	....
Full-size Sport Utility	....	....	....	....	....	....	....
Crossover Vehicle	....	....	....	....	....	....	....
Sport Utility Truck	....	....	....	....	....	....	....
Total	....	....	....	....	....	....	....

V. Cost and Potential Fuel Economy Improvements of Technologies

The agency requests that each manufacturer and other interested parties provide estimates of the range of costs and fuel economy improvements of available fuel economy technologies. These estimates should follow the format provided by Tables V–A through V–D. For comparison purposes the agency has listed the technologies included in the NAS report, together with the range (low and high) of fuel economy improvement and cost estimates for all of the technologies included in the report.

The agency has also added some technologies to these tables as well as separate rows for the cost and fuel economy improvement estimates when technologies are applied to engines having a different number of cylinders or when they are applied to vehicles with different numbers of gears. Thus, for example, if a manufacturer or other interested party has different cost and fuel economy improvement estimates for the application of a technology to a 4-cylinder and a 6-cylinder engine, these estimates should be represented as separate rows on its table. Likewise, for example, if a manufacturer or other interested party has different cost and fuel economy improvement estimates for using 6-speed automatic transmission versus a 4-speed and a 5-speed automatic transmission, these estimates should be represented as separate rows on its table.

The agency is also interested in whether different cost and fuel economy improvement estimates apply to different vehicle classes. Thus, the agency is asking for any information regarding the effectiveness and cost of fuel economy technologies on a vehicle class basis. Passenger car vehicle classes are listed in Tables III–B and III–C.

If respondents have information that breaks out the cost and fuel economy improvement estimates by vehicle classes, the agency asks that in addition to providing charts which provide a respondent's complete range of estimates, that respondents provide separate charts for each vehicle class following the example of Tables V–B and V–D. Spreadsheet templates for these tables can be found at *ftp://ftpserver.volpe.dot.gov/pub/cafe/templates/*. (If there are difficulties in downloading these templates, contact Ken Katz at (202) 366–0846.) If a manufacturer or other interested party has fuel economy improvement and cost estimates for technologies not included on these tables, the agency asks the manufacturer or other interested party to provide that information to the agency.

TABLE V–A.—ESTIMATES OF FUEL ECONOMY IMPROVEMENT OF FUEL ECONOMY TECHNOLOGIES FOR ALL VEHICLE CLASSES

	NAS		Amalgamated	
	Low	High	Low	High
Production-Intent Engine Technology				
Engine Friction Reduction	1.0%	5.0%	[1.0%]c	[6.0%]c
Low Friction Lubricants	1.0%	1.0%	[0.5%]c	[1.0%]c
Multi-Valve, Overhead Camshaft	2.0%	5.0%	[2.5%]c	[3.6%]c
Variable Valve Timing	2.0%	3.0%	[2.0%]c	[3.2%]c
—4 cylinder engine	2.0%	3.0%	[2.5%]c	[3.2%]c
—6 cylinder engine	2.0%	3.0%	[2.0%]c	[3.0%]c
—8 cylinder engine	2.0%	3.0%	[2.0%]c	[2.5%]c
Variable Valve Lift & Timing	1.0%	2.0%	[1.0%]c	[1.5%]c
Cylinder Deactivation	3.0%	6.0%	[4.0%]c	[6.5%]c
—6 cylinder engine	3.0%	6.0%	[4.0%]c	[4.5%]c
—8 cylinder engine	3.0%	6.0%	[5.5%]c	[6.5%]c
Engine Accessory Improvement	1.0%	2.0%	[0.5%]c	[2.5%]c
Engine Supercharging & Downsizing	5.0%	7.0%	....	....
Production-Intent Transmission Technology				
5–Speed Automatic Transmission	2.0%	3.0%	[2.0%]c	[2.8%]c
Continuously Variable Transmission	4.0%	8.0%	[5.0%]c	[6.5%]c
Automatic Transmission w/Aggressive Shift Logic	1.0%	3.0%	....	....

TABLE V–A.—ESTIMATES OF FUEL ECONOMY IMPROVEMENT OF FUEL ECONOMY TECHNOLOGIES FOR ALL VEHICLE CLASSES—Continued

	NAS		Amalgamated	
	Low	High	Low	High
6–Speed Automatic Transmission (vs. 5-speed automatic)	1.0%	2.0%	[1.0%]c	[2.7%]c
6–Speed Automatic Transmission (vs. 4-speed automatic)	3.0%	5.0%	[3.5%]c	[4.0%]c
Production-Intent Vehicle Technology				
Aero Drag Reduction	1.0%	2.0%	[0.9%]c	[2.0%]c
Improve Rolling Resistance	1.0%	1.5%	[0.8%]c	[1.5%]c
Emerging Engine Technology				
Intake Valve Throttling	3.0%	6.0%	[4.0%]c	[7.0%]c
Camless Valve Actuation	5.0%	10.0%	[6.0%]c	[9.0%]c
Variable Compression Ratio	2.0%	6.0%	[2.5%]c	[5.5%]c
Direct Injection	N/A	N/A	[2.0%]c	[2.5%]c
Diesel Engine	N/A	N/A	[15%]c	[40%]c
Emerging Transmission Technology				
Automatic Shift Manual Transmission (AST/AMT)	3.0%	5.0%	[4.0%]c	[5.0%]c
Advanced CVTs	0.0%	2.0%	[1.0%]c	[1.0%]c
Emerging Vehicle Technology				
42 Volt Electrical Systems	1.0%	2.0%	[1.0%]c	[3.0%]c
Integrated Starter/Generator	4.0%	7.0%	[5.0%]c	[8.5%]c
Electric Power Steering	1.5%	2.5%	[1.0%]c	[2.0%]c
Vehicle Weight Reduction	3.0%	4.0%	[2.0%]c	[6.0%]c
Integrated Motor Assist	N/A	N/A	[15%]c	[20%]c
Dual-Mode Hybrid	N/A	N/A	[20%]c	[30%]c
Full Hybrid	N/A	N/A	[35%]c	[55%]c

TABLE V–B.—COST ESTIMATES FOR FUEL ECONOMY TECHNOLOGIES FOR ALL VEHICLE CLASSES

Technology	NAS		Amalgamated	
	Low	High	Low	High
Production-Intent Engine Technology				
Engine Friction Reduction	$35	$140	[$30]c	[$90]c
Low Friction Lubricants	$8	$11	[$1]c	[$5]c
Multi-Valve, Overhead Camshaft	$105	$140	[$110]c	[$180]c
Variable Valve Timing	$35	$140	[$30]c	[$130]c
—4 cylinder engine	$35	$140	[$40]c	[$110]c
—6 cylinder engine	$35	$140	[$30]c	[$100]c
—8 cylinder engine	$35	$140	[$60]c	[$130]c
Variable Valve Lift & Timing	$70	$210	[$50]c	[$190]c
Cylinder Deactivation	$112	$252	[$80]c	[$280]c
—6 cylinder engine	$112	$252	[$200]c	[$280]c
—8 cylinder engine	$112	$252	[$80]c	[$150]c
Engine Accessory Improvement	$84	$112	[$5]c	[$5]c
Engine Supercharging & Downsizing	$350	$560	[$500]c	[$750]c
Production-Intent Transmission Technology				
5-Speed Automatic Transmission	$70	$154	[$90]c	[$140]c
Continuously Variable Transmission	$140	$350	[$500]c	[$500]c
Automatic Transmission w/Aggressive Shift Logic	$—	$70		
6-Speed Automatic Transmission (vs. 5-speed automatic)	$140	$280	[$110]c	[$225]c
6-Speed Automatic Transmission (vs. 4-speed automatic)	N/A	N/A	[$200]c	[$350]c
Production-Intent Vehicle Technology				
Aero Drag Reduction	$—	$140	[$100]c	[$100]c
Improve Rolling Resistance	$14	$56	[$6]c	[$6]c
Emerging Engine Technology				
Intake Valve Throttling	$210	$420	[$220]c	[$380]c
Camless Valve Actuation	$280	$560		
Variable Compression Ratio	$210	$490		
Direct Injection	N/A	N/A	[$210]c	[$315]c
Diesel Engine	N/A	N/A	[$1,500]c	[$5,000]c
Emerging Transmission Technology				
Automatic Shift Manual Transmission (AST/AMT)	$70	$280	[$90]c	[$240]c
Advanced CVTs	$350	$840	[$390]c	[$640]c

TABLE V–B.—COST ESTIMATES FOR FUEL ECONOMY TECHNOLOGIES FOR ALL VEHICLE CLASSES—Continued

Technology	NAS		Amalgamated	
	Low	High	Low	High
Emerging Vehicle Technology				
42 Volt Electrical Systems	$70	$280	[$80]c	[$190]c
Integrated Starter/Generator	$210	$350	[$190]c	[$340]c
Electric Power Steering	$105	$150	[$100]c	[$140]c
Vehicle Weight Reduction	$210	$350	[$150]c	[$250]c
Integrated Motor Assist	N/A	N/A	[$1500]c	[$2000]c
Dual-Mode Hybrid	N/A	N/A	[$4200]c	[$10000]c
Full Hybrid	N/A	N/A	[$3000]c	[$8000]c

[ ]c = Confidential.

[FR Doc. 07–878 Filed 2–22–07; 12:19 pm]
BILLING CODE 4910–59–P