Guidance for Implementing Section 141 of the Energy Independence and Security Act of 2007

Federal Vehicle Fleets and Low Greenhouse Gas-Emitting Vehicles

United States Environmental Protection Agency

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Table of Contents

Acronyms and Abbreviations ii
Background 1
I. What does EISA § 141 require of federal agencies? 1
II. Is my agency subject to EISA § 141? 2
III. Does EISA § 141 apply to all individual vehicle acquisitions or only vehicles associated with Federal fleets as defined by section 303(b)(3) of EPAct92 (42 U.S.C. § 13212(b)(3))? 2
IV. How does EPA quantify the tailpipe GHG emissions from light-duty motor vehicles? 3
V. What is a low GHG-emitting vehicle as it applies to EISA § 141? 4
VI. How do I find and identify low GHG-emitting vehicles? 6
VII. Why do some vehicles on EPA's federal fleets web site have two GHG emissions levels? . 6
VIII. What if a vehicle intended for acquisition is not listed on EPA's federal fleets web site? ... 7
IX. Will a vehicle's GHG emissions level ever change? 7
X. Are there exceptions to the requirement to acquire only low GHG-emitting vehicles? 7
A. How does the "functional needs" exception work? 9
B. How does the "alternative measures" exception work? 10
i. Under the alternative measures exception, can a federal agency assess the aggregate GHG emissions from all of its acquired vehicles to determine the quantity of emissions that must be reduced? 10
C. Are the aggregate GHG emissions for an agency's fleet nationwide or is it quantified based on a metropolitan statistical area (MSA) or consolidated metropolitan statistical area (CMSA)? 12
XI. What are Electric Vehicles (EVs) and how are they included in this guidance document? 13
XII. What if the vehicle that I am interested in purchasing only qualifies as a low GHG-emitting vehicle using an alternative fuel? 13
XIII. How do the requirements of EISA § 141 interact with the requirements of EPAct92 § 303(b) (42 U.S.C. § 13212(b))? 14
XIV. How are MDPVs addressed? 15
XV. Are government-owned contractor-operated vehicles included? 15
XVI. What about vehicles purchased in the United States and operated outside of the United States? 16
XVII. What if my agency wants to acquire vehicles that are from a model year prior to model year 2010? 16
XIX. What are the reporting requirements? 17
Appendix A 18
Appendix B 20

Acronyms and Abbreviations

AFV	Alternative Fuel Vehicle
C.F.R.	Code of Federal Regulations
CH_4	Methane
CMSA	Consolidated Metropolitan Statistical Area
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DOE	U.S. Department of Energy
E85	Fuel that is 85% ethanol, 15% gasoline
EIA	Energy Information Administration
EISA	Energy Independence and Security Act of 2007
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct2005	Energy Policy Act of 2005
EPAct92	Energy Policy Act of 1992
EV	Electric Vehicle
FAST	Federal Automotive Statistical Tool
FFV	Flexible Fuel Vehicle
FR	Federal Register
g/mi.	Grams Per Mile
GHG	Greenhouse Gas
GVWR	Gross Vehicle Weight Rating
GREET	Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation model
GSA	U.S. General Services Administration
HEV	Hybrid Electric Vehicle
HFC	Hydrofluorocarbons
kWh	Kilowatt Hour
Lbs.	Pounds
LPG	Liquefied Petroleum Gas (Propane)
MDPV	Medium Duty Passenger Vehicle
MPG	Miles Per Gallon
MPH	Miles Per Hour
MSA	Metropolitan Statistical Area
NDAA2008	National Defense Authorization Act of 2008
NEV	Neighborhood Electric Vehicle
NO_x	Oxides of Nitrogen
PHEV	Plug-in Hybrid Electric Vehicle
PM	Particulate Matter
THC	Total Hydrocarbons
U.S.C.	United States Code
VMT	Vehicle Miles Traveled

Background

Section 141 of the Energy Independence and Security Act of 2007 (EISA) entitled "Federal Vehicle Fleets," amends section 303 of the Energy Policy Act of 1992 (EPAct92) (42 U.S.C. § 13212). It supports the goal of reducing greenhouse gas (GHG) emissions by prohibiting federal agencies from acquiring light-duty motor vehicles and medium-duty passenger vehicles (MDPVs) that are not low GHG-emitting vehicles. This guidance document applies to federal agencies only. This guidance document does not apply to fuel provider fleets or state agency fleets subject to EPAct92 §§ 501 and 507.

In order to facilitate the purchase of low GHG-emitting vehicles by the federal government, EISA § 141 directs the Administrator of the Environmental Protection Agency (EPA) to define what a low GHG-emitting vehicle is and to identify annually the makes and models of such vehicles. This guidance explains the criteria EPA uses to identify low GHG-emitting vehicles, directs federal agencies to EPA's federal fleet web site for up-to-date information about light-duty motor vehicles certified for sale in the United States, and provides the necessary information and resources for federal agencies to implement EISA § 141. Mandatory language is not used in this guidance document except where the EPA is using such language to describe or interpret a statutory requirement.

I. What does EISA § 141 require of federal agencies?

Section 141 prohibits federal agencies from acquiring (purchasing, leasing, or acquiring through transfer, including replacement vehicles) light-duty motor vehicles and MDPVs that are not low GHG-emitting vehicles. Vehicles covered by EISA § 141 include only newly acquired motor vehicles and not an agency's existing mix of motor vehicles. This guidance document applies to acquisitions made after its issuance date. EISA § 141 does not apply to vehicles forfeited to or confiscated by law enforcement agencies. EISA § 141 also does not apply to used vehicles that the General Services Administration reassigns from one agency to another. A motor vehicle[1], as defined by 40 C.F.R. § 85.1703, is a vehicle that is self-propelled and capable of transporting a person, persons, any materials, or any permanently or temporarily affixed apparatus, and, among other things, is capable of exceeding 25 miles per hour (mph) over level, paved surfaces. Section 301(11) of EPAct92 (42 U.S.C. § 13211(11)) defines light-duty motor vehicle to include both light-duty vehicles and light-duty trucks as defined by 40 C.F.R. § 86.1803-01. Therefore, in this guidance document, the term light-duty motor vehicle includes passenger cars, and, depending on their gross vehicle weight rating (GVWR), pickup trucks, minivans, passenger vans and sport-utility vehicles. Examples of passenger cars include Buick Regal, Chevrolet Malibu, Ford Focus, Chrysler 300 and Dodge Charger. Examples of light-duty trucks, which includes both small and large SUVs, are Buick Enclave, GMC Terrain, Ford F150 and Jeep Compass. Please note that vehicles with a GVWR between 8,500 lbs. and 10,000 lbs. designed to transport primarily persons are MDPVs as defined by 40 C.F.R. § 86.1803-01. Examples of MDPVs include certain configurations of the Ford Expedition, Chevrolet Suburban and GMC Yukon. Heavy duty trucks

[1] All motor vehicles manufactured for sale in the U.S. are required to be certified in accordance with 40 C.F.R. Part 86 to show its ability to comply with federal vehicle emission standards.

(e.g., pickup trucks and non-passenger vans over 8,500 lbs. GVWR or 6,000 lbs. curb weight) are outside the scope of § 141 and, therefore, are not addressed by this guidance document.

II. Is my agency subject to EISA § 141?

Section 141 applies to all federal agencies, except for offices of the legislative branch, but includes the U.S. House of Representatives when vehicles are acquired using a Member's Representational Allowance. Federal agencies include offices of the judicial branch and executive branch including executive departments, independent establishments and government corporations.

For a list of federal agencies, please use *The United States Government Manual*, which can be found at https://www.usgovernmentmanual.gov/?AspxAutoDetectCookieSupport=1. For purposes of this guidance document, Members of the U.S. House of Representatives are included in the term "agency."

III. Does EISA § 141 apply to all individual vehicle acquisitions or only vehicles associated with Federal fleets as defined by section 303(b)(3) of EPAct92 (42 U.S.C. § 13212(b)(3))?

Section 303(b)(3) of EPAct92 (42 U.S.C. § 13212(b)(3)), for applicability purposes, defines "Federal fleet" to mean "a group of 20 or more light-duty motor vehicles, located in a metropolitan statistical area or consolidated metropolitan statistical area, …, that are centrally fueled or capable of being centrally fueled and are owned, operated, leased, or otherwise controlled by or assigned to any Federal executive department, military department, Government corporation, independent establishment, or executive agency, the United States Postal Service, the Congress, the courts of the United States, or the Executive Office of the President. Such term does not include – (D) law enforcement motor vehicles; (E) emergency motor vehicles; and (F) motor vehicles acquired and used for military purposes that the Secretary of Defense has certified to the Secretary [of Energy] must be exempt for national security reasons;…"

However, EISA § 141, which amends EPAct92 § 303 (42 U.S.C. § 13212), is written in terms of individual "vehicles," not fleets. The central command of the provision prohibits the acquisition of individual "vehicles" that are not low GHG-emitting. Furthermore, the exceptions to the prohibition are written in terms of individual vehicles. If an agency elects to utilize one of the exceptions described in section X of this guidance document, the agency head is required to provide separate certification for each individual vehicle purchased, without regard to whether that vehicle is part of a fleet. In addition, the provision applies to medium-duty passenger vehicles, which are not included in a Federal fleet, and vehicles acquired by members of the U.S. House of Representatives, who do not operate a Federal fleet.

For these reasons, EPA's statement of individual vehicle applicability is permissible. EISA § 141 covers all individual light-duty motor vehicles and MDPVs acquired by a federal agency, regardless of the size and location of its fleet(s), or whether it is a law enforcement, emergency, or military vehicle.

IV. How does EPA quantify the tailpipe GHG emissions from light-duty motor vehicles?

The greenhouse gases carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) are emitted from most operating motor vehicles' tailpipes.[2] Factoring in the global warming potential of each gas provides a vehicle's CO_2 equivalent (CO_2e) emissions. CO_2 comprises the majority of tailpipe greenhouse gas emissions (approximately 99% of overall GHG emissions for new light-duty vehicles)[3] and is dependent on the amount of fuel combusted. A vehicle's CH_4 and N_2O emissions are largely dependent on the vehicle's emissions control equipment and miles traveled.

For model year (MY) 2012 and earlier, EPA quantified greenhouse gases as CO_2e using emissions factors that are based on vehicle emission test results and fuel characteristics. The CO_2e emission factors that were used are provided in Table 1 below.

Table 1: Tailpipe CO_2e Emissions Per Fuel Type			
	CO_2		CH_4 and N_2O
Fuel Type	Pounds/Gallon	Grams/Gallon	Grams/Mile
Gasoline	19.59	8,887[4]	1.9[5]
Diesel	22.44	10,180[6]	0.4[7]
E85	13.88	6,295[8]	4.0[9]
CNG	15.50	7,030[10]	6.8[11]

In MY 2013, EPA began using carbon dioxide (CO_2), and not CO_2e, as the basis for determining EISA 141 compliant vehicles. Why? The rulemaking "Revisions and Additions to Motor Vehicle Fuel Economy Label" requires that CO_2 emissions in grams per mile (g/mile) appear on the new motor vehicle fuel economy label beginning with MY 2013 vehicles.[12] Specific vehicle CO_2 emissions data is now available and publicized on the label and fuelconomy.gov. In order to provide consistent data and messaging to the public, EPA decided to base the EISA 141 compliant vehicle list on this publicly available CO_2 emissions data. Because emissions of N_2O and CH_4 are very low relative to CO_2, we do not believe accounting for them in the EISA 141 criteria would significantly increase our ability to differentiate between vehicles.

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[2] Electric vehicles and hydrogen fuel cell vehicles do not emit GHGs from the tailpipe.
[3] See 75 FR 25396.
[4] Value is based on indolene fuel, a specific EPA test fuel.
[5] U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*, Table A-90, EPA 430-R-09-004, April 15, 2009. Average value for Tier 2 passenger cars and light-duty trucks.
[6] Value calculated based on 40 C.F.R. 600.113 carbon content.
[7] U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*, Table A-90, EPA 430-R-09-004, April 15, 2009. Average value for advanced diesel passenger cars and light-duty trucks.
[8] Ethanol value is from the EPA's Final Mandatory Greenhouse Gas Reporting Rule for Petroleum Suppliers which uses the ethanol density value from the *CRC: Handbook of Chemistry and Physics, 89th Edition, 2008-2009, Editor -in-Chief - David R. Lide*; from Section 15: Density of Solvents as a function of temperature; and based the carbon share value on a calculation of the molecular weight of carbon in ethanol (C_2H_5OH) using the periodic table of elements. The table 1 value is comprised of 83% ethanol and 17% gasoline, accounts for 2% denaturant in ethanol.
[9] GREET v1.8b available in RFS2 docket # *EPA-HQ-OAR-2005-0161-0956* (spreadsheet "Vehicles").
[10] GREET v1.8b available in RFS2 docket # *EPA-HQ-OAR-2005-0161-0925.1* (spreadsheet "Emission Factors").
[11] GREET v1.8b available in RFS2 docket # *EPA-HQ-OAR-2005-0161-0956* (spreadsheet "Vehicles").
[12] See FR Doc No 2011-14291.

V. What is a low GHG-emitting vehicle as it applies to EISA § 141?

For MY 2012 and earlier, EISA 141 compliance was based on GHG scores available on EPA's Green Vehicle Guide. Any vehicle that achieved a GHG rating of 7 or higher was considered a low GHG-emitting vehicle. Because of the limited number of light-duty trucks and light-duty flexible fuel vehicles (FFVs) that achieved a GHG rating of 7 or higher, EPA concluded that for the early years of this program, it was appropriate to lower the minimum GHG rating for these vehicles as follows: light-duty trucks that operated with gasoline, diesel or CNG that achieved a GHG rating of 6 or higher qualify, flexible fuel light-duty passenger cars that achieved a GHG rating of 6 or higher when operated with alternative fuel qualify, and flexible fuel light-duty trucks that achieved a GHG rating of 5 or higher when operated with alternative fuel qualify. These adjustments increased options for federal agencies, while still maintaining relatively low GHG emissions performance for these vehicles.

Table 2. EPA GHG Ratings Needed to Qualify as a Low GHG-Emitting Vehicle for MY 2012 and earlier

Passenger cars	Light-Duty Trucks, MDPVs and FFV passenger cars	FFV light-duty trucks
7, 8, 9, or 10	6, 7, 8, 9, or 10	5, 6, 7, 8, 9, or 10

As of MY 2013, EISA 141 compliance levels are based on specific CO_2 g/mile maximum emissions levels. EPA will analyze the tailpipe CO_2 emissions from all light-duty motor vehicle configurations (cars and light-duty trucks) manufactured for sale in the U.S. for the prior model year in order to project the maximum allowable CO_2 emissions levels for the subsequent model year, with distinct designations for cars and LD trucks/MDPVs. The goal in determining the appropriate CO_2 emissions level threshold for any given model year will be to designate up to the top 25% (approximately) of lowest GHG-emitting cars and LD trucks/MDPVs as EISA 141 compliant (based on analysis of the previous model year vehicle data).

By statute, EPA cannot designate any vehicle as low-GHG emitting if its emissions are higher than the most stringent applicable standards.

> "The Administrator shall not identify any vehicle as a low greenhouse gas emitting vehicle if the vehicle emits greenhouse gases at a higher rate than such standards allow for the manufacturer's fleet average grams per mile of carbon dioxide-equivalent emissions for that class of vehicle, taking into account any emissions allowances and adjustment factors such standards provide" [13]

To meet this requirement, EPA will ensure that the maximum allowable CO_2 levels for EISA 141 are set at or below EPA's estimated projected industry fleet-wide tailpipe CO_2 emissions compliance levels for cars and trucks in the light-duty vehicle GHG standard applicable for that model year. Therefore, EPA will set the maximum CO_2 emissions levels at **either** the levels expected to result in 25% of cars and LD trucks/MDPVs qualifying as low GHG-emitting for

[13] See Appendix A for the full statutory language.

EISA 141 **or** at the estimated projected fleet-wide tailpipe compliance levels in the LD GHG standards, whichever are lower.[14,15]

Note that for MY 2013 - MY 2015, EPA continued to adjust the EISA 141 compliance levels for light-duty flexible fuel vehicles (FFVs) operating on E85. The maximum CO_2 (g/mi) levels for FFV passenger cars and FFV passenger trucks was set at 45 g/mi higher (equivalent to one point on GVG rating for earlier MYs) than the standard threshold for each class.

As of model year 2016, FFVs have the same thresholds as other cars and trucks.[16] However, agencies still need to determine if an FFV will be operated on gasoline or on E85 to find the applicable tailpipe CO_2 emissions level for that vehicle model (see section VII for more details.) Many FFVs have lower tailpipe CO_2 emissions when operated on E85 than on gasoline and this could result in certain vehicle models only qualifying as low GHG-emitting if operated on E85.

Table 3. Model Year 2019 & MY 2020 EISA 141 Compliance Thresholds (maximum CO_2 emissions level)

	MY2019	MY2020
Passenger cars	285 g CO_2/mile	275 g CO_2/mile
Light-Duty Trucks, MDPVs	370 g CO_2/mile	360 g CO_2/mile

The joint EPA/DOE web site fueleconomy.gov lists the CO_2 emissions in grams/mile for each light-duty motor vehicle model manufactured for sale in the United States.

EPA analyzes fleet data every model year. As a result, the compliance thresholds are subject to change. Additionally, EPA may choose to designate models as compliant that have the same engine, transmission, and chassis as qualified models, but due to test variability, did not qualify. Please check EPA's EISA 141/Federal Vehicle Acquisition page (https://www.epa.gov/regulations-emissions-vehicles-and-engines/federal-fleets-using-low-greenhouse-gas-emitting-vehicles) for program and compliance level updates.

[14] The estimated projected industry fleet-wide tailpipe CO_2 emissions compliance levels for cars and trucks are taken from the final column of Tables III-1 and III-2 of the rulemaking "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards" (see 77 FR 62771–62772.) We convert the projected 2-cycle CO_2 values in the tables to 5-cycle CO_2 estimates for EISA 141 purposes using the following equation where we have made the simplifying assumption that vehicles operate on gasoline: $CO_{2\,(5\text{-cycle})} = 8887 \times 0.0037 + 1.2067 \times CO_{2\,(2\text{-cycle})}$.

[15] We may round down to the nearest 5 g/mi increment when setting EISA 141 compliance thresholds.

[16] The rulemaking "Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards" provides credits for MY2012-MY2015 FFVs based, in part, on a downward adjustment to the vehicle's tailpipe CO_2 emissions rate when operating on alternative fuel (see 75 FR 25432). Because the EISA 141 statute allows EPA to take into account such emissions allowances and adjustments factors when determining whether to designate a vehicle as low-GHG emitting, EPA has determined it is permissible to set EISA141 maximum allowable CO_2 thresholds for FFVs operating on E85 higher than the projected fleet-wide compliance level through MY2015. However, the light-duty GHG emissions standards do not provide these credits to FFVs after MY 2015. Therefore EPA is also removing the 45 g CO_2/mi compliance break for FFVs under EISA section 141 starting with model year 2016.

VI. How do I find and identify low GHG-emitting vehicles?

EPA's federal fleets website provides agencies with up-to-date model year lists of all qualifying low GHG-emitting vehicles that are available for sale in the United States. Users can also use fueleconomy.gov to look up the tailpipe CO_2 g/mile emissions of any individual light-duty vehicle for sale in the U.S. and compare that to the applicable EISA 141 compliance threshold for either passenger cars or light-duty trucks and MDPVs to see if the vehicle qualifies as low GHG-emitting. For purposes of this program, passenger cars include two-seaters, mini-compacts, subcompacts, compacts, midsize sedans, large sedans, and station wagons. The light-duty truck and medium-duty passenger vehicle category includes light trucks, SUVs, minivans, vans, and special purpose vehicles.[17]

Beginning in MY 2013, vehicle manufacturers were required to provide the CO_2 (g/mi) emissions for all applicable vehicles, including any optional equipment which may alter the emissions, in U.S. General Services Administration's (GSA) AutoChoice. If an agency selects optional equipment, which includes but is not limited to engines and transmissions, the corresponding CO_2 (g/mi) emissions rate for the selected vehicle will be shown. For any vehicle where OEM CO_2 (g/mi) emissions are unavailable in AutoChoice, this information may be obtained from fueleconomy.gov.

If "N/A" is associated with a vehicle's CO_2 emissions, this indicates that the manufacturer is not required to report the GHG emissions and fuel economy data to EPA, which is currently the case for light duty large trucks with a gross vehicle weight over 8500 lbs.

The GHG emissions of motor vehicles varies across vehicle models as well as across different configurations within a vehicle model. Therefore, it is imperative that an agency verify the specific vehicle's CO_2 emissions using EPA's federal fleets web site or fueleconomy.gov prior to acquiring the vehicle.

EPA's federal fleets web site and fueleconomy.gov are updated regularly to reflect new emissions data submitted by vehicle manufacturers throughout the model year. For the most up-to-date list of available low GHG-emitting vehicles, an agency should always reference the EPA's federal fleets web site.

VII. Why do some vehicles on EPA's federal fleets web site have two GHG emissions levels?

Each fuel has a different chemical composition, carbon content, and heating value, which are factors in a vehicle's tailpipe emissions. These differences are accounted for in the CO_2 emission rates in Table 1. For example, FFVs that operate with either gasoline or an alternative fuel (e.g., E85) will list two emissions levels, one that reflects the use of gasoline and another that reflects

[17] ''Light-duty vehicle,'' ''light-duty truck,'' and ''medium-duty passenger vehicle'' are defined in 40 CFR 86.1803–01. Generally, the term ''light-duty vehicle'' means a passenger car, the term ''light duty truck'' means a pick-up truck, sport-utility vehicle, or minivan of up to 8,500 lbs gross vehicle weight rating, and ''medium-duty passenger vehicle'' means a sport-utility vehicle or passenger van from 8,500 to 10,000 lbs gross vehicle weight rating.

the use of the alternative fuel. In some instances, a vehicle may qualify as a low GHG-emitting vehicle on one fuel and not the other. When acquiring a FFV, agencies should pay particular attention to the GHG emissions level for the type of fuel on which the vehicle will be operated.

VIII. What if a vehicle intended for acquisition is not listed on EPA's federal fleets web site?

EPA's federal fleets web site is updated throughout the year. Vehicle manufacturers submit data to EPA to coincide with a vehicle model's planned introduction into commerce. In some instances, a vehicle may be introduced earlier than planned and EPA's federal fleets web site may not reflect this earlier release date. These instances are not typical and an agency should contact EPA using the contact information provided in section XX of this guidance document when it encounters such an occurrence.

IX. Will a vehicle's GHG emissions level ever change?

An agency should document a motor vehicle's GHG emissions[18] at the time a vehicle is acquired. This will avoid any question of a vehicle's GHG emissions level for reporting purposes. When an agency acquires a vehicle through GSA, the point of acquisition occurs when the agency orders the vehicle from GSA.

Occasionally, a vehicle manufacturer may update or modify its vehicle certification data submitted to EPA as described in section IV of this guidance document. These updates or modifications may result in an updated GHG emissions level. This should occur only rarely and, as stated above, federal agencies should use the GHG emissions information assigned to the vehicle at the time of acquisition.

Each model year EPA will evaluate the fleet's GHG emissions and the definitions for low GHG emissions performance to ensure that this program is identifying the appropriate vehicles as low GHG-emitting vehicles. Additionally, vehicle manufacturers are adding advanced technology and other improvements to existing vehicle models that will likely improve their GHG emissions performance. EPA expects that the GHG emissions threshold for designating low GHG vehicles will change from one model year to the next. GHG emissions for those vehicles in which more advanced engine technology is added will likely decrease. As a result, a vehicle with similar GHG emissions performance as previous model years is not guaranteed to be designated low GHG gas emitting each subsequent model year.

In any instance, federal agencies should document a vehicle's GHG emissions performance at the time a vehicle is acquired since § 141 only applies at the point of acquisition.

X. Are there exceptions to the requirement to acquire only low GHG-emitting vehicles?

Section 141 specifically prohibits the acquisition of light-duty motor vehicles and MDPVs that are not low GHG-emitting vehicles as defined by this guidance document. Recognizing that

[18] For MY2013 and later, the term GHG emissions should be understood as referring to CO_2 emissions.

federal agencies need some flexibility to acquire vehicles for diverse applications, EISA § 141 allows for two exceptions to the prohibition.

The first exception applies in cases where no low GHG-emitting vehicle is available that meets the **functional needs** of the agency. The second exception applies where an agency has taken specific **alternative measures** to reduce petroleum consumption and GHG emissions. When an agency utilizes these exceptions, EISA § 141 requires that the head of the agency certify in writing that either a specific functional need cannot be met by a low GHG-emitting vehicle or that the agency has implemented cost-effective alternative measures that result in an equivalent amount of petroleum consumption and GHG emission reductions.

Agencies are permitted to establish roles in line with their current motor vehicle management program. For example, it would be reasonable for the head of an agency to delegate certain responsibilities, including the certification requirement, to the individuals within the agency that select vehicles for acquisition. However, EPA recommends that each federal agency consolidate the responsibility for the EISA § 141 certifications in one office to maintain consistency and facilitate program oversight and recordkeeping.

The statute does not authorize EPA to approve use of either exception to the prohibition. Therefore, agencies should not request approval from EPA to exercise the **functional need** or **alternative measure** exceptions.

A. How does the "functional needs" exception work?

Section 141 states that the requirements to purchase low GHG-emitting vehicles "shall not apply…if the head of the agency certifies in writing, in a separate certification for each individual vehicle purchased,...that no low greenhouse gas emitting vehicle is available to meet the functional needs of the agency and details in writing the functional needs that could not be met with a low greenhouse gas emitting vehicle…"

The head of the federal agency, or his or her designee(s), is responsible for making such a determination. EPA cannot make this determination, since it is not authorized to do so. EPA recommends that each agency establish an agency-wide process for exercising the functional need exception as appropriate. The process should include identification of functional needs, evaluation of available low GHG-emitting vehicles and, when appropriate, a determination that no low GHG-emitting vehicle is available to meet a functional need. An agency's determinations must be detailed in writing. Records of such determinations should be maintained for at least five years and/or in accordance with agency-specific recordkeeping requirements.

EPA believes it is reasonable for an agency to aggregate the individual vehicles acquired to satisfy a specific functional need into a single list or grouping for certification by the head of each agency, or his or her designee(s), rather than preparing vehicle-by-vehicle justifications. For example, an agency can draft a cover sheet appropriately describing the functional need or needs that a low GHG-emitting vehicle cannot meet and attach a list of vehicles acquired to perform the services that satisfy the functional need or needs identified. The list would be updated as vehicles are acquired.

Each agency will define its own functional needs. However, it is reasonable that this exception would apply to many law enforcement motor vehicles, emergency motor vehicles, military tactical vehicles and vehicles used for protective services, among others. EPA recognizes that certain federal law enforcement agencies require vehicles with specialized attributes to meet functional needs related to routine law enforcement or other time critical activities, for which there may be no low GHG-emitting vehicle options. These activities include, but are not limited to, prisoner transport, high speed pursuit, border security, disaster response, immigration enforcement, counterterrorism and undercover investigation. A vehicle acquired to perform such services or any vehicle acquired that could reasonably be expected to perform such services, appears to merit an exception based upon the functional need for expanded interior volume, larger engine size, camouflage, specialized on-board equipment or other specialized vehicle attributes. In accordance with the statute, an agency or group within a law enforcement agency must identify the routine law enforcement and/or time critical activities, the basis for the functional need exception and maintain a list of vehicles acquired to perform the activities identified. Advance recognition of these functional needs and grouping vehicles under a single certification will expedite a law enforcement agency's vehicle acquisition process.

Section 141 applies to all individual light-duty vehicles and MDPVs; therefore, the guidance regarding vehicles acquired for law enforcement and/or other time critical activities in this section should not be considered an exclusion from EISA § 141. If a low GHG-emitting vehicle is available that meets any of the needs of a law enforcement agency, EPA would expect an agency to acquire the low GHG-emitting vehicle.

B. How does the "alternative measures" exception work?

Section 141 states that the requirement to purchase low GHG-emitting vehicles "shall not apply…if the head of the agency certifies in writing, in a separate certification for each individual vehicle purchased…that the agency has taken specific more cost-effective measures to reduce petroleum consumption that (I) have reduced a measured and verified quantity of greenhouse gas emissions equal to or greater than the quantity of greenhouse gas reductions that would have been achieved through acquisition of a low greenhouse gas emitting vehicle over the lifetime of the vehicle; or (II) will reduce each year a measured and verifiable quantity of greenhouse gas emissions equal to or greater than the quantity of greenhouse gas reductions that would have been achieved each year through the acquisition of a low greenhouse gas emitting vehicle."

This exception allows an agency to acquire a vehicle that is not a low GHG-emitting vehicle if it offsets the incremental increase of petroleum consumption and GHG emissions compared to a low GHG-emitting vehicle. A range of offsetting reduction strategies can be contemplated, such as reducing vehicle miles traveled (VMT), reducing the number of vehicles owned and operated, acquiring neighborhood electric vehicles (NEVs) to replace conventional vehicles not being used on public roads or highways, or reducing winter temperatures in buildings heated by oil. More information and resources on alternative measures are provided on EPA's federal fleets web site at https://www.epa.gov/regulations-emissions-vehicles-and-engines/federal-fleets-using-low-greenhouse-gas-emitting-vehicles.

The head of the federal agency, or his or her designee(s), is responsible for determining the appropriate cost-effective alternative measure(s) and for quantifying the GHG emission reductions associated with the measure. Federal agencies are not required to consult with or receive approval from EPA. EPA recommends that each agency establish an agency-wide method for documenting the basis for its determination and maintain records of such determinations for at least five years and/or in accordance with agency-specific recordkeeping requirements.

i. Under the alternative measures exception, can a federal agency assess the aggregate GHG emissions from all of its acquired vehicles to determine the quantity of emissions that must be reduced?

The **alternative measures** exception requires that agencies quantify the total GHG emissions that will result from acquiring vehicles that do not meet EPA's definition of a low GHG-emitting vehicle. The alternative measures exception

further requires that agencies compare the GHG emissions performance of a vehicle that does NOT meet EPA's definition of a low GHG-emitting vehicle to the GHG emissions performance of a low GHG-emitting vehicle and offset the difference. To most effectively use the alternative measures exception and determine the necessary offsets, EPA believes that agencies should assess the aggregate GHG emissions from their light-duty motor vehicle and MDPV acquisitions annually.

Allowing federal agencies to assess the aggregate GHG emissions from the vehicles they acquire will enable them to obtain the mix of vehicles they need while creating an incentive to acquire vehicles with the highest GHG ratings.

To help federal agencies quantify and verify the aggregate GHG emissions as required by the alternative measures exception, EPA developed the Federal Vehicle GHG Emission Assessment Tool. The Assessment Tool can be downloaded from EPA's federal fleets web site. The Assessment Tool is a spreadsheet-based calculator that assists federal agencies with tracking, verifying and quantifying the GHG emissions associated with the vehicles they acquire or plan to acquire. To satisfy the § 141 certification requirement, the head of an agency, or his or her designee(s), should certify that the Assessment Tool properly and accurately accounts for all applicable motor vehicle acquisitions completed in a fiscal year or other acquisition cycle specified by the agency.

To calculate the aggregate GHG emissions from an agency's motor vehicles, a user simply inputs the GHG g/mile emissions for each light duty motor vehicle and MDPV they intend to acquire during the period specified by the agency into the Federal Vehicle GHG Emissions Calculator in the Assessment Tool. An agency should only enter FFVs in the FFV columns if the FFV will be operated with the alternative fuel. The Federal Vehicle GHG Emissions Calculator performs three main functions based on the number of vehicles entered in the calculator:

1. It quantifies the agency's aggregate GHG emissions.
2. It calculates the agency's EISA 141 GHG emissions limit.
3. It compares the agency's aggregate GHG emissions to its EISA 141 GHG emissions limit.

If an agency's aggregate GHG emissions are less than its EISA GHG emissions limit, the agency complies with § 141. If an agency's aggregate GHG emissions exceed its EISA GHG emissions limit, the agency must implement further GHG emission reduction measures to offset the excess GHG emissions consistent with the alternative measures exception or re-evaluate its vehicle acquisition mix.

An agency can also use the Assessment Tool to quantify its GHG emissions if it chooses to implement other mobile source-related GHG emission reduction measures, such as reducing VMT or replacing conventionally fueled vehicles with

NEVs. To quantify emission reductions associated with reducing VMT, the user would modify the average annual mileage value used to calculate the agency's aggregate GHG emissions.

Section 141 applies when a vehicle is acquired; therefore, EPA recommends that an agency calculate its EISA GHG emissions limit and aggregate GHG emissions when developing its annual acquisition plan. The Assessment Tool can be downloaded, maintained and updated as vehicle acquisitions are made throughout the year to ensure an agency does not exceed its EISA GHG emissions limit. An agency's EISA GHG emissions limit and aggregate GHG emissions will update as vehicles are added to the tool. EPA also recommends that an agency calculate its final EISA GHG emissions limit and aggregate GHG emissions for a fiscal year or acquisition cycle after all vehicle acquisition activity is completed. The period covered and timing will depend on each agency's purchasing practices and can be done in coordination with Federal Management Regulation requirements (41 C.F.R. § 102). The period covered should be discreet (i.e., a fiscal year or calendar year).

The GHG emissions from vehicles acquired under the "functional needs" exception described above in this section should not be included in an agency's aggregate GHG emissions. To avoid overuse of the functional need exception, agencies may consider including all of their vehicles in the Assessment Tool and exercising the alternative measure exception.

EPA will continue to evaluate the impact of aggregating motor vehicle GHG emissions and may make adjustments or refinements in a future guidance document. EPA plans to address additional GHG emissions accounting opportunities in the future.

C. Are the aggregate GHG emissions for an agency's fleet nationwide or is it quantified based on a metropolitan statistical area (MSA) or consolidated metropolitan statistical area (CMSA)?

All light-duty motor vehicles and MDPVs acquired by a federal agency are covered by EISA § 141; therefore, an agency should consider all of its light-duty motor vehicles and MDPVs and not just those located in a MSA or CMSA. However, since the head of each agency is permitted to designate a person or person(s) to be responsible for implementing EISA § 141, as stated in this section above, geographic clusters of vehicles can result. In these instances an agency head, or his or her designee(s), can decide that the GHG emissions for each geographic cluster of vehicles can be aggregated independently if the agency elects to utilize the alternative measures exception.

XI. What are Electric Vehicles (EVs) and how are they included in this guidance document?

An electric vehicle, as defined by 10 C.F.R. § 474.2, is a vehicle that is powered by an electric motor drawing current from rechargeable storage batteries or other portable electrical energy storage devices. Recharge energy is drawn from a source off the vehicle - they are plugged into an external electrical source to charge their batteries. Plug-in hybrid electric vehicles (PHEVs) can be charged by a source off the vehicle like an EV and can also be operated on a conventional fuel like gasoline.

EVs are considered zero-emissions vehicles because they do not produce tailpipe CO_2 emissions. As a result, they are considered low GHG-emitting vehicles for EISA 141. PHEVs do produce tailpipe emissions from operation on gasoline. As for other vehicles, fleet managers can determine the CO_2 (g/mi) emissions for HEVs and PHEVs on EPA's federal fleets web site.

Similar to conventionally fueled vehicles, as described in section IV of this guidance document, manufacturers must properly certify EVs and PHEVs with EPA before introducing these vehicles into commerce.

XII. What if the vehicle that I am interested in purchasing only qualifies as a low GHG-emitting vehicle using an alternative fuel?

As stated in section V, the GHG emissions requirements for MY 2015 and earlier FFVs to be considered low GHG-emitting vehicles when operated with E85 are less stringent than for dedicated gasoline-fueled vehicles. If a vehicle only qualifies as a low GHG-emitting vehicle when operated with E85, the vehicle must be operated with E85 in order to be considered a low GHG-emitting vehicle. As of model year 2016, FFVs have the same thresholds as other cars and trucks. However, agencies still need to determine if an FFV will be operated on gasoline or on E85 to find the applicable tailpipe CO_2 emissions level for that vehicle model. Many FFVs have lower tailpipe CO_2 emissions when operated on E85 than on gasoline and this could result in certain vehicle models only qualifying as low GHG-emitting if operated on E85. The fuel type used to determine the GHG emissions level is clearly identified on EPA's federal fleet website.

To use the GHG emissions threshold based on an alternative fuel, agencies must demonstrate that the alternative fuel is available within a 5 mile radius or 15 minutes of the vehicle's garaged location and demonstrate that the vehicle will be operated with the alternative fuel. These are similar criteria that agencies use to determine whether a fuel waiver is appropriate under section 701 of the Energy Policy Act of 2005 (EPAct2005). Therefore, if an agency intends to request a fuel waiver for a FFV, the agency should use the GHG rating associated with operating the vehicle with gasoline. Furthermore, as required by EPAct2005 § 701, an agency can only operate this FFV with gasoline under a fuel waiver issued by DOE. If an agency decides to utilize the aggregate GHG emissions assessment tool described in section X(B)(i) above, the appropriate GHG emissions level for each vehicle is the GHG emissions g/mile that corresponds to the fuel on which the vehicle will be operated. If an agency intends to request a fuel waiver for a FFV and operate the vehicle with gasoline, then the agency would include it in the Federal Vehicle

GHG Emissions Calculator within the GHG emissions level that corresponds to operating the vehicle with gasoline.

This guidance does not address instances of an agency relocating an alternative fuel vehicle (AFV) to an area where the alternative fuel is not readily available. This circumstance is beyond the scope of EISA § 141, which applies at the time of vehicle acquisition. However, agencies should consider EISA § 142 and Executive Order (E.O.) 13423 fuel use requirements when deciding to relocate an AFV to an area where the alternative fuel is not available.

To find the locations of fueling stations dispensing alternative fuels, please visit www.eere.energy.gov/afdc/stations/find_station.php.

XIII. How do the requirements of EISA § 141 interact with the requirements of EPAct92 § 303(b) (42 U.S.C. § 13212(b))?

As explained above, EISA § 141 requires that federal agencies acquire low GHG-emitting light-duty motor vehicles and MDPVs. Federal agencies are also required to comply with the EPAct92 § 303(b) AFV acquisition requirement, which requires that 75% of the total number of vehicles acquired by a federal agency for its fleet(s) be AFVs. Federal agencies are required to comply with both statutes.

Many AFVs -- particularly FFVs that are capable of operating on both gasoline and E85 -- do not qualify as low GHG-emitting vehicles, especially if the agency operates or intends to operate the vehicle with gasoline. Even with the less stringent GHG emissions requirement for light-duty FFVs, the availability of vehicle configurations that qualify under both EISA § 141 and EPAct92 § 303(b) may lead to concerns that federal agencies will be unable to comply with both statutes. However, section 2862 of the National Defense Authorization Act of 2008 (NDAA 2008) (Pub. L. 110-181, Jan. 28, 2008) contains a provision which integrates EISA § 141 and EPAct92 § 303(b) in a manner that enables agencies to more easily comply with both statutory requirements. Section 2862 of NDAA 2008 amends EPAct92 § 301(3) (42 U.S.C. § 13211(3)) by expanding the definition of an AFV to include the following vehicles:

1. A new qualified fuel cell motor vehicle (as defined by 26 U.S.C. 30B(b)(3));
2. A new advanced lean burn technology motor vehicle (as defined by 26 U.S.C. 30B(c)(3));
3. A new qualified hybrid motor vehicle (as defined by 26 U.S.C. 30B(d)(3)); and
4. Any other type of vehicle that the Administrator of the Environmental Protection Agency demonstrates to the Secretary of Energy would achieve a significant reduction in petroleum consumption.

In accordance with NDAA 2008 § 2862, in a December 12, 2008 letter to DOE (Appendix B), EPA demonstrated that operating a low GHG-emitting vehicle, as defined in this guidance document, would achieve a significant reduction in petroleum consumption consistent with item four above. EPA's demonstration showed that low GHG-emitting vehicles achieve a significant reduction in petroleum consumption similar to or greater than the other newly defined AFVs that

are commercially available (i.e., advanced lean burn and hybrid vehicles), and a significant reduction in petroleum consumption compared to existing FFVs operating on gasoline.

Based on the demonstration EPA made to DOE and the objectives of the EPAct92 AFV program, any low GHG-emitting vehicle acquired in lieu of a FFV that an agency reasonably determines qualifies for a fuel waiver under EPAct2005 § 701 is now included in the expanded definition of an AFV. Each agency head, or his or her designee(s), determines if its FFVs would qualify for a fuel waiver based on the criteria established by DOE. Unless an exception is utilized as described in section X of this guidance document, any light-duty vehicle or MDPV acquired is required to be a low GHG-emitting vehicle.

The expanded AFV definition described above provides federal agencies flexibility to achieve the greatest reductions of petroleum consumption and GHG emissions. An agency can acquire any vehicle included in the expanded AFV definition that is a low GHG-emitting vehicle. Where alternative fuel is available or will become available, an agency can acquire any FFV or AFV that is a low GHG-emitting vehicle. Where alternative fuel is not available, an agency can acquire any low GHG-emitting vehicle.

Including low GHG-emitting vehicles in the expanded AFV definition does not preclude an agency from acquiring AFVs in areas where the alternative fuel is not available. To drive the demand for alternative fuel, an agency should consider acquiring FFVs that qualify as low GHG-emitting when operated with either conventional fuel or alternative fuel. If an agency is confident that alternative fuel will be available within a reasonable amount of time, an agency should consider exercising the alternative measure exception described in section X(B) to acquire vehicles that only qualify when operated with alternative fuel.

Including low GHG-emitting vehicles in the expanded definition of an AFV does not alter the definition of an alternative fuel as defined by EPAct92 § 301(2) (42 U.S.C. § 13211(2)) and federal agencies must continue to increase their overall use of alternative fuels as required by EISA § 142 and E.O. 13423.

XIV. How are MDPVs addressed?

MDPVs are covered vehicles under EISA § 141. As defined by 40 C.F.R. § 86.1803-01, a MDPV has a GVWR of greater than 8,500 lbs. (or a curb weight greater than 6,000 lbs.) but less than 10,000 lbs. and is designed primarily to transport less than 12 passengers or less than 9 passengers rearward of the driver's seat. In addition, it is not equipped with an open cargo area of 72 inches in interior length or more. Corporate average fuel economy standards did not apply to MDPVs until model year 2011; therefore, EPA has only limited data on their GHG emissions prior to model year 2011.

XV. Are government-owned contractor-operated vehicles included?

Yes, government-owned contractor-operated vehicles are subject to the provisions of EISA § 141. Executive Order 13149, Sec. 505 (42 U.S.C. § 13212) states that "Agencies must ensure that all Government-owned contractor-operated vehicles comply with all applicable goals and

other requirements of [the E.O.] and that these goals and requirements are incorporated into each contractor's management contract." Executive Order 13423 (72 FR 17, January 26, 2007) requires that agencies "ensure that contracts entered into…for contractor operation of government-owned…vehicles require the contractor to comply with the provisions of [the E.O.] with respect to…vehicles to the same extent as the agency would be required to comply if the agency operated the…vehicles." Both Executive Orders include government-owned contractor-operated vehicles in order to improve the environmental performance of vehicles owned by the federal government. Therefore, EPA believes the requirement to purchase low GHG-emitting vehicles, as defined by this guidance document, should be included in each contractor's management contract, as appropriate. An agency is permitted to utilize the exceptions in sections X(A) and (B), as appropriate. An agency should include these vehicles in the Federal Vehicle GHG Emissions Calculator if it elects to aggregate its GHG emissions as described in section X(B)(i). This requirement does not apply to contracts entered into by the U.S. House of Representatives or its Office of the Chief Administrative Officer.

XVI. What about vehicles purchased in the United States and operated outside of the United States?

EISA § 141 requires that in determining which vehicles are low GHG-emitting, EPA consider standards "applicable to and enforceable against motor vehicle manufacturers for vehicles sold anywhere in the United States." This means that EISA § 141 applies to the acquisition of vehicles manufactured for sale in the U.S., including territories and possessions of the U.S., but shipped overseas for operation. An agency should include these vehicles in the Federal Vehicle GHG Emissions Calculator if it elects to aggregate its GHG emissions. Vehicles manufactured for sale outside the U.S. are beyond the scope of EISA § 141. As a general note, federal agencies should verify that other countries in which vehicles manufactured for the U.S. market will operate have a supply of the fuels needed to ensure proper performance of the vehicle's advanced emission control equipment. Some fuels available in certain other countries will compromise the emission control equipment of vehicles manufactured for operation in the U.S.

XVII. What if my agency wants to acquire vehicles that are from a model year prior to model year 2010?

EPA's federal fleets web site provides vehicle information for the 3 most recent model years. For acquisition of older vehicles, please contact EPA to ensure that the vehicle is compliant. The GHG emissions thresholds established in model year 2010, the first year of EISA 141 implementation, were used as the basis for determining low GHG emitting vehicles for model 2009.

XVIII. What are the recordkeeping requirements?

Section 141 requires that agency heads, or his or her designee(s), "certify in writing, for each individual vehicle purchased" when a non-low GHG-emitting vehicle is acquired under the **"functional needs"** or **"alternative measures"** exceptions described in section X of this guidance document. Agencies should also maintain records documenting the use of the Assessment Tool as described in section X(B). EPA recommends federal agencies develop

agency-specific methods for maintaining the data or information demonstrating compliance with EISA § 141, including which vehicles were acquired under each exception. The method could utilize a spreadsheet or other format and should include, but not be limited to, the make and model of each individual vehicle, model year, fuel on which the vehicle is operated and GHG g/mile emissions.

XIX. What are the reporting requirements?

Section 141 imposes no specific reporting requirements on federal agencies. However, there are existing requirements that agencies report vehicle acquisition data. For example, 41 C.F.R. § 102-34.75, Motor Vehicle Management, requires that agencies provide GSA, on an annual basis, a synopses of their motor vehicle leases and purchases. This is currently accomplished through use of the Federal Automotive Statistical Tool (FAST). In addition, each year agencies submit annual reports to Congress that indicate compliance with vehicle acquisition, petroleum consumption and alternative fuel consumption requirements.

As of fiscal year 2011, DOE requires federal agencies to include information regarding the acquisition of low GHG-emitting vehicles in the Federal Automotive Statistical Tool (FAST) on an annual basis. EPA anticipates reviewing the information annually to evaluate implementation of EISA § 141. In particular, EPA will assess the use of the exceptions described in sections X(A) and (B) of this guidance document.

XX. Contact Information

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Appendix A

PUBLIC LAW 110–140—DEC. 19, 2007 121 STAT. 1517

Subtitle C—Federal Vehicle Fleets

SEC. 141. FEDERAL VEHICLE FLEETS.

Section 303 of the Energy Policy Act of 1992 (42 U.S.C. 13212) is amended—

(1) by redesignating subsection (f) as subsection (g); and

(2) by inserting after subsection (e) the following new subsection:

"(f) VEHICLE EMISSION REQUIREMENTS.—

"(1) DEFINITIONS.— In this subsection:

"(A) FEDERAL AGENCY.—The term 'Federal agency' does not include any office of the legislative branch, except that it does include the House of Representatives with respect to an acquisition described in paragraph (2)(C).

"(B) MEDIUM DUTY PASSENGER VEHICLE.—The term 'medium duty passenger vehicle' has the meaning given that term section 523.2 of title 49 of the Code of Federal Regulations, as in effect on the date of enactment of this paragraph.

"(C) MEMBER'S REPRESENTATIONAL ALLOWANCE.—The term 'Member's Representational Allowance' means the allowance described in section 101(a) of the House of Representatives Administrative Reform Technical Corrections Act (2 U.S.C. 57b(a)).

"(2) PROHIBITION.—

"(A) IN GENERAL.— Except as provided in subparagraph (B), no Federal agency shall acquire a light duty motor vehicle or medium duty passenger vehicle that is not a low greenhouse gas emitting vehicle.

"(B) EXCEPTION.— The prohibition in subparagraph (A) shall not apply to acquisition of a vehicle if the head of the agency certifies in writing, in a separate certification for each individual vehicle purchased, either—

"(i) that no low greenhouse gas emitting vehicle is available to meet the functional needs of the agency and details in writing the functional needs that could not be met with a low greenhouse gas emitting vehicle; or

"(ii) that the agency has taken specific alternative more cost-effective measures to reduce petroleum consumption that—

"(I) have reduced a measured and verified quantity of greenhouse gas emissions equal to or greater than the quantity of greenhouse gas reductions that would have been achieved through acquisition of a low greenhouse gas emitting vehicle over the lifetime of the vehicle; or

"(II) will reduce each year a measured and verified quantity of greenhouse gas emissions equal to or greater than the quantity of greenhouse gas reductions that would have been achieved each year through acquisition of a low greenhouse gas emitting vehicle.

"(C) SPECIAL RULE FOR VEHICLES PROVIDED BY FUNDS CONTAINED IN MEMBERS' REPRESENTATIONAL ALLOWANCE.— This paragraph shall apply to the acquisition of a light duty motor vehicle or medium duty passenger vehicle using any portion of a Member's Representational Allowance, including an acquisition under a long-term lease.

"(3) GUIDANCE.—

"(A) IN GENERAL.— Each year, the Administrator of the Environmental Protection Agency shall issue guidance identifying the makes and model numbers of vehicles that are low greenhouse gas emitting vehicles.

"(B) CONSIDERATION.— In identifying vehicles under subparagraph (A), the Administrator shall take into account the most stringent standards for vehicle greenhouse gas emissions applicable to and enforceable against motor vehicle manufacturers for vehicles sold anywhere in the United States.

"(C) REQUIREMENT.—The Administrator shall not identify any vehicle as a low greenhouse gas emitting vehicle if the vehicle emits greenhouse gases at a higher rate than such standards allow for the manufacturer's fleet average grams per mile of carbon dioxide-equivalent emissions for that class of vehicle, taking into account any emissions allowances and adjustment factors such standards provide.".

Appendix B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 1 2 2008

OFFICE OF
AIR AND RADIATION

Mr. John Mizroch
Acting Assistant Secretary
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy
Room 6a-013/Forrestal Building
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Mr. Mizroch:

On December 19, 2007, the President signed the Energy Independence and Security Act of 2007 (EISA). Section 141 of EISA amends section 303 of the Energy Policy Act of 1992 (EPAct92) (42 U.S.C. § 13212) and requires the Environmental Protection Agency (EPA) to define low greenhouse gas (GHG) emitting vehicles and to annually provide federal agencies a list of low GHG-emitting vehicles, which the federal agencies must then acquire. As you know, EPAct92 § 303(b) already requires federal agencies to purchase alternative fueled vehicles (AFVs) for 75% of their federal fleet (42 U.S.C. § 13212(b)). The coexistence of these two requirements may cause some uncertainty as to which vehicles agencies should acquire.

However, staff in EPA's Office of Transportation and Air Quality and in the Department of Energy's (DOE's) Federal Energy Management Program have worked together to develop a solution that integrates and reconciles the two requirements and creates a more flexible, cohesive EPAct92 program that allows agencies to acquire the most appropriate vehicles for very diverse applications and geographic areas, while at the same time reducing petroleum consumption. This solution utilizes a provision of the National Defense Authorization Act for Fiscal Year 2008 (NDAA 2008) that amends EPAct92. Section 2862 of NDAA 2008 (42 U.S.C. § 13211(3)) expands the definition of AFVs and provides DOE the flexibility to include low GHG-emitting vehicles in the expanded definition. To take advantage of this flexibility, EPA must demonstrate to DOE that low GHG-emitting vehicles would achieve a significant reduction in petroleum consumption.

This letter serves as EPA's demonstration to DOE that low GHG-emitting vehicles, as defined in EPA's enclosed draft guidance, achieve a significant reduction in petroleum consumption.

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BACKGROUND:

In 2006, EPA developed a GHG scoring system that assigns every car and light truck a GHG score from 0 to 10 (where 10 indicates the best GHG performance). EPA will use this existing scoring system to implement section 141 of EISA. We intend to define low GHG-emitting vehicles to be any passenger car that achieves a GHG score of 7 or higher and any light duty truck or medium duty passenger vehicle that achieves a GHG score of 6 or higher. A more detailed description of EPA's GHG scoring system is included in the enclosed draft guidance document titled 'Guidance for Federal Agencies: Federal Vehicle Fleets, Energy Independence and Security Act of 2007.'

During the course of developing this EISA guidance, we have talked to numerous federal agencies about how the new EISA § 141 requirements will be integrated into their existing EPAct92 program that requires the acquisition of AFVs. Many AFVs – particularly flexible fuel vehicles (FFVs) that are capable of operating with both gasoline and E85 – will not qualify as low GHG-emitting vehicles, especially if the agency intends to operate the vehicle with gasoline[1].

As stated earlier, the best opportunity for integrating the two requirements relies on section 2862 of NDAA 2008 which adds several new types of vehicles to the definition of an AFV. Newly defined AFVs include the following:

1) a new qualified fuel cell motor vehicle (as defined by 26 U.S.C. 30B(b)(3))
2) a new advanced lean burn technology motor vehicle (as defined by 26 U.S.C. 30B(c)(3));
3) a new qualified hybrid motor vehicle (as defined by 26 U.S.C. 30B(d)(3)); and
4) any other type of vehicle that the Administrator [of EPA] demonstrates to the Secretary [of Energy] would achieve a significant reduction in petroleum consumption.

The fourth type of vehicle described above provides DOE the flexibility to include low GHG-emitting vehicles in the definition of an AFV. If low GHG-emitting vehicles reduce petroleum consumption as much as those vehicles defined by any of the first three examples then it is reasonable to conclude that low GHG-emitting vehicles would also achieve a "significant reduction in petroleum consumption" for purposes of section 2862 of NDAA 2008. EPA demonstrates below that low GHG-emitting vehicles, as defined in EPA's draft guidance, satisfy this measure.

EPA's DEMONSTRATION:

For DOE to include low GHG-emitting vehicles as AFVs, NDAA 2008 specifically requires that EPA demonstrate to DOE that these vehicles achieve a significant reduction in petroleum consumption. Below we compare the petroleum consumption of low GHG-emitting

[1] Only one 2009 model year FFV qualifies as a low GHG-emitting vehicle when operated with gasoline – the Chevrolet HHR, which is a light duty truck

vehicles to the first three types of vehicles now considered AFVs as a result of NDAA 2008 and to traditional AFVs currently acquired by many federal agencies, specifically FFVs.

1. Comparision of low GHG-emitting vehicles to the first three types of vehicles now considered AFVs as a result of NDAA 2008

The first three vehicle types are defined by the Internal Revenue Service (IRS) for purposes of the Alternative Motor Vehicle Credit (26 U.S.C. § 30B). Both advanced lean burn technology and hybrid vehicles are commercially available to the general consumer and to federal agencies. At this time, no fuel cell vehicles are commercially available. Annually, the IRS provides a list of eligible vehicles[2], which are provided in Table 1 along with their associated fuel consumption and GHG performance.

EPA's definition of a low GHG-emitting light-duty truck requires a minimum combined gasoline fuel economy of 22 MPG (25 MPG for diesel powered trucks). EPA's definition of a low GHG-emitting passenger car requires a minimum combined gasoline fuel economy of 24 MPG (28 MPG for diesel powered cars). Of the 25 hybrid and advanced lean burn technology truck and passenger car models that qualify as AFVs under NDAA 2008, 8 models (32%) have combined fuel economy values less than the minimum needed to qualify as low GHG-emitting vehicles. Therefore, all low GHG-emitting vehicles provide better fuel consumption performance than 32% of the qualifying hybrid and advanced lean burn technology AFVs. In addition, there are at least 13 traditional gasoline powered low GHG-emitting vehicles with a combined fuel economy of at least 30 MPG, including the Chevrolet Aveo and Cobalt, Pontiac G3 and G5, Toyota Corolla and Yaris, and the Honda Fit. Each of these 13 models has better fuel economy than 16 of the 25 (64%) hybrid and advanced lean burn technology models.

Based on the above comparison, low GHG-emitting vehicles reduce petroleum consumption as much, and in many cases more, than qualifying hybrid and advanced lean burn technology vehicles already defined by NDAA 2008 as AFVs. As a result, we believe that low GHG-emitting vehicles achieve a significant reduction in petroleum consumption and should qualify as AFVs under section 2862 of NDAA 2008.

[2] www.irs.gov/newsroom/article/0,,id=157632,00.html

Table 1. Available Hybrid and Advanced Lean Burn Technology Vehicles

Make	Model	Fuel Type	Technology Type	Combined MPG MY 2009	Annual Average Gallons Consumed (Based on 10,000 Miles Driven)	GHG score	Qualify As EPA low GHG Emitting Vehicle?
Trucks							
Mercury	Mariner Hybrid 2WD	Gasoline	Hybrid	33	303	8	Yes
Ford	Escape Hybrid 2WD	Gasoline	Hybrid	33	303	8	Yes
Mazda	Tribute 2WD	Gasoline	Hybrid	32	313	8	Yes
Mazda	Tribute 4WD	Gasoline	Hybrid	28	357	8	Yes
Mercury	Mariner Hybrid 4WD	Gasoline	Hybrid	28	357	8	Yes
Ford	Escape Hybrid 4WD	Gasoline	Hybrid	28	357	8	Yes
Saturn	Vue Green Line	Gasoline	Hybrid	28	357	8	Yes
Toyota	Highlander Hybrid 4WD	Gasoline	Hybrid	26	385	7	Yes
Lexus	RX 400h 2WD and 4WD	Gasoline	Hybrid	25	400	7	Yes
Chevrolet	Tahoe Hybrid 2WD	Gasoline	Hybrid	21	476	5	No
GMC	Yukon Hybrid	Gasoline	Hybrid	21	476	5	No
Chevrolet	Tahoe Hybrid 4WD	Gasoline	Hybrid	20	500	5	No
GMC	Yukon Hybrid	Gasoline	Hybrid	20	500	5	No
Mercedes-Benz	R320 BLUE TEC	Diesel	Lean Burn	20	500	4	No
Mercedes-Benz	ML320 BLUE TEC	Diesel	Lean Burn	20	500	4	No
Mercedes-Benz	GL320 BLUE TEC	Diesel	Lean Burn	19	526	3	No
Passenger Cars							
Toyota	Prius	Gasoline	Hybrid	46	217	10	Yes
Honda	Civic CVT	Gasoline	Hybrid	42	238	10	Yes
Nissan	Altima Hybrid	Gasoline	Hybrid	34	294	9	Yes
Toyota	Camry Hybrid	Gasoline	Hybrid	34	294	9	Yes
Volkswagen	2009 Sportwagen –2.0L TDI	Diesel	Lean Burn	34	294	8	Yes
Volkswagen	2009 Jetta –2.0L TDI Sedan	Diesel	Lean Burn	33	303	8	Yes
Chevrolet	Malibu Hybrid	Gasoline	Hybrid	29	345	8	Yes
Saturn	Aura hybrid	Gasoline	Hybrid	29	345	8	Yes
Lexus	LS 600h L Hybrid	Gasoline	Hybrid	21	476	5	No

2. Comparison of low GHG-emitting vehicles to traditional AFVs currently acquired by many federal agencies, specifically FFVs

In general, FFVs currently offered by manufacturers are larger, more powerful types of passenger cars and light-duty trucks. When run on gasoline, only one FFV model qualifies as a low GHG-emitting vehicle, the Chevrolet HHR (a light duty truck). As a result, when federal agencies acquire FFVs and place them in areas where the appropriate alternative fuel (usually E85) is not available, they are forced to operate them with gasoline, thereby consuming more petroleum than if they had acquired low GHG-emitting vehicles.

For example, the most fuel efficient passenger car FFV, when run on gasoline, is the Chevrolet Impala. However, it does not qualify as a low GHG-emitting vehicle when run on gasoline because it only achieves a combined fuel economy of 23 MPG. A low GHG-emitting vehicle, such as the Chevrolet Cobalt or the Pontiac G5, uses significantly less petroleum. The Cobalt and G5 both achieve a combined fuel economy of 30 MPG. Operating a Cobalt or G5 (or any similar low GHG-emitting vehicle) 10,000 miles per year would achieve a petroleum reduction of 102 gallons per year compared to operating the Impala FFV with gasoline.

Table 2 shows a broad comparison of the fuel consumption of a variety of low GHG-emitting vehicles compared to FFVs. All low GHG-emitting vehicles consume less petroleum than FFVs running on gasoline.

Table 2. Low GHG-Emitting Vehicles Compared to FFVs Running on Gasoline

Make	Model	Technology Type	Combined Gasoline MPG MY 2009	Annual Average Gallons Consumed (Based on 10,000 Miles Driven)	Petroleum Savings Using Low GHG Emitting Vehicles* (gallons/year)	GHG score	Qualify As EPA low GHG Emitting Vehicle?
Trucks							
Jeep	Compass	Gasoline	25	400	126	7	Yes
Jeep	Patriot	Gasoline	25	400	126	7	Yes
Nissan	Rogue	Gasoline	24	417	110	7	Yes
Ford	Escape	Gasoline	24	417	110	7	Yes
Mazda	5	Gasoline	24	417	110	7	Yes
Ford	Ranger	Gasoline	23	435	92	6	Yes
Mercury	Mariner	Gasoline	23	435	92	6	Yes
Subaru	Outback Wagon	Gasoline	22	455	72	6	Yes
Mitsubishi	Outlander	Gasoline	22	455	72	6	Yes
Honda	CR-V	Gasoline	22	455	72	6	Yes
Saturn	Vue	Gasoline	22	455	72	6	Yes
Chevrolet	HHR	FFV	24	417	110	7	Yes
Dodge	Caravan**	FFV	19	526	0	5	No
Chrysler	Town and Country	FFV	19	526	0	5	No
Chevrolet	Tahoe	FFV	17	588	-62	3	No
GMC	Sierra	FFV	17	588	-62	3	No
GMC	Yukon	FFV	16	625	-99	3	No
Ford	Expedition	FFV	16	625	-99	3	No
Ford	F150	FFV	16	625	-99	3	No
Passenger Cars							
Chevrolet	Cobalt	Gasoline	30	333	102	8	Yes
Chevrolet	Aveo	Gasoline	30	333	102	8	Yes
Pontiac	G3	Gasoline	30	333	102	8	Yes
Pontiac	G5	Gasoline	30	333	102	8	Yes
Honda	Fit	Gasoline	31	323	112	8	Yes
Chevrolet	Malibu	Gasoline	26	385	50	7	Yes
Dodge	Caliber	Gasoline	27	370	65	7	Yes
Mazda	3	Gasoline	27	370	65	7	Yes
Chevrolet	Impala**	FFV	23	435	0	5	No
Lincoln	Town Car	FFV	19	526	92	5	No
Mercedes-Benz	G300	FFV	21	476	41	5	No
Mercury	Grand Marquis	FFV	19	526	92	5	No
Ford	Crown Victoria	FFV	19	526	92	5	No
Buick	Lucerne	FFV	21	476	41	5	No

* Petroleum savings compared to best FFV that does not qualify as a low GHG-emitting vehicle

** Best FFV that does not qualify as a low GHG-emitting vehicle

In addition, we understand that DOE issued approximately 70,000 fuel waivers in FY 2007 to operate FFVs on gasoline. If these 70,000 vehicles were low GHG-emitting vehicles like the Chevrolet Cobalt or Pontiac G5 instead of the Impala, federal agencies could have saved approximately 7.1 million gallons of gasoline (170,000 barrels of petroleum) and avoided approximately 86,205 tons of CO_2e emissions.

As demonstrated here, on both an individual vehicle comparison and a fleet-wide comparison, low GHG-emitting vehicles achieve a significant reduction in petroleum consumption compared to FFVs operating on gasoline. We believe it is reasonable to conclude that low GHG-emitting vehicles should qualify as AFVs under section 2862 of NDAA 2008.

SUMMARY:

Based on comparisons of low GHG-emitting vehicles to hybrids and advanced lean burn technology motor vehicles, which are both now considered AFVs as a result of NDAA 2008, and to traditional AFVs currently acquired by many federal agencies, EPA has demonstrated that low GHG-emitting vehicles, as defined in EPA's draft guidance, achieve a significant reduction in

petroleum consumption. Operating low GHG-emitting vehicles, where a stable supply of appropriate alternative fuel is not available, will allow federal agencies to reduce their petroleum consumption, save money on capital and fuel costs, and create a more flexible and cohesive EPAct92 program that allows agencies to acquire the most appropriate vehicles for their very diverse applications and geographic areas.

We believe this demonstration of the ability of low GHG-emitting vehicles to achieve a significant reduction in petroleum consumption provides DOE the flexibility to include low GHG-emitting vehicles in the expanded definition of AFVs under section 2862 of NDAA 2008.

Please let me know if this demonstration is sufficient to include low GHG-emitting vehicles in the expanded definition of AFVs. If you have any questions about this demonstration, please do not hesitate to contact me. Additionally, for more information, your staff can contact Mitchell Greenberg, Manager of EPA's SmartWay Transport Partnership, at (202) 343-9269.

Sincerely,

Robert J. Meyers
Principal Deputy Assistant Administrator

Enclosure

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Mr. Christopher Calamita
U.S. DOE, Office of General Counsel

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U.S. EPA, Office of General Counsel