

National Highway Traffic Safety Administration

NHTSA AND EPA ESTABLISH NEW NATIONAL PROGRAM TO IMPROVE FUEL ECONOMY AND REDUCE GREENHOUSE GAS EMISSIONS FOR PASSENGER CARS AND LIGHT TRUCKS

The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) are issuing a joint final rule establishing a new National Program to regulate model year 2012 through 2016 passenger cars and light trucks in order to improve fuel economy and reduce greenhouse gas emissions. NHTSA is issuing Corporate Average Fuel Economy (CAFE) standards for MY 2012-2016 passenger cars and light trucks under the Energy Policy and Conservation Act (EPCA) and Energy Independence and Security Act (EISA). EPA is issuing national greenhouse gas (GHG) emissions standards under the Clean Air Act. While NHTSA has been setting fuel economy standards since the 1970s, today's action represents the first-ever joint final rule by NHTSA with another agency.

The CAFE standards will apply to passenger cars and light trucks – categories which span the range of vehicles from sedans to crossovers to pickup trucks to vans – manufactured in model years 2012 through 2016. They will require these vehicles to meet an estimated combined average mile per gallon (mpg) level of 34.1 by MY 2016. Together with EPA's standards, which also enable manufacturers to achieve compliance by improving the air conditioners of their vehicles, the National Program overall is expected to result in improvement levels equivalent to 35.5 mpg.¹

These rules were developed in response to President Obama's call for a National Fuel Efficiency Policy, a strong and coordinated federal fuel economy and GHG program for passenger cars and light trucks.² The rules represent a coordinated program that will achieve substantial improvements in fuel economy and reductions of greenhouse gas (GHG) emissions from the light-duty vehicle part of the transportation sector, based on technology that will be commercially available and that can be incorporated at a reasonable cost. The agencies' rule will also provide regulatory certainty and consistency for the automobile industry by setting harmonized national standards.

Why is it important to reduce fuel consumption by and GHG emissions from passenger cars and light trucks?

Improving vehicle fuel economy is one of the key ways of achieving energy independence, energy security, and a low carbon economy. Reducing total petroleum

¹ The 35.5 mpg number is equivalent to 250 grams of carbon dioxide per mile (gCO₂/mi). It represents what the required level would be if the automotive industry were to meet EPA's requirement entirely through fuel economy improvements.

² President Obama Announces National Fuel Efficiency Policy, The White House, May 19, 2009. Available at http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy/. Remarks by the President on National Fuel Efficiency Standards, The White House, May 19, 2009. Available at http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-national-fuel-efficiency-standards/.

use decreases our economy's vulnerability to oil price shocks. Reducing dependence on oil imports from regions with uncertain conditions enhances our energy security. The need to reduce energy consumption is more crucial today than it was when EPCA was enacted in the mid-1970s. Net petroleum imports now account for approximately 57 percent of U.S. domestic petroleum consumption, and the share of U.S. oil consumption for transportation is approximately 71 percent.³ Moreover, world crude oil production continues to be highly concentrated, exacerbating the risks of supply disruptions and their negative effects on both the U.S. and global economies.

Gasoline consumption in the U.S. has historically been relatively insensitive to fluctuations in both price and consumer income, and people in most parts of the country tend to view gasoline consumption as a non-discretionary expense. Thus, when gasoline's share in consumer expenditures rises, the public experiences fiscal distress. Additionally, since U.S. oil production is only affected by fluctuations in prices over a period of years, any changes in petroleum consumption (as through increased fuel economy) largely flow into changes in the quantity of imports. As a consequence, however, measures that reduce petroleum consumption, such as fuel economy standards, will flow directly into the balance-of-payments account, and strengthen the domestic economy to some degree.

The environmental need to improve fuel economy is manifest. The U.S. transportation sector is one of the largest contributors to total U.S. and global anthropogenic emissions of greenhouse gases. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past, which means that fuel economy improvements to reduce those emissions are crucial to addressing the risks of global climate change. The key effects of climate change observed to date and projected to occur in the future include, but are not limited to, more frequent and intense heat waves, more severe wildfires, degraded air quality, heavier and more frequent downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, continued ocean acidification, harm to agriculture, and harm to wildlife and ecosystems.

Using vehicle technology to improve fuel economy is one of the three main methods of reducing tailpipe emissions of CO₂. The two other methods for reducing the tailpipe emissions of CO₂ are switching to vehicle fuels with lower carbon content and changing driver behavior, *i.e.*, inducing people to drive less.

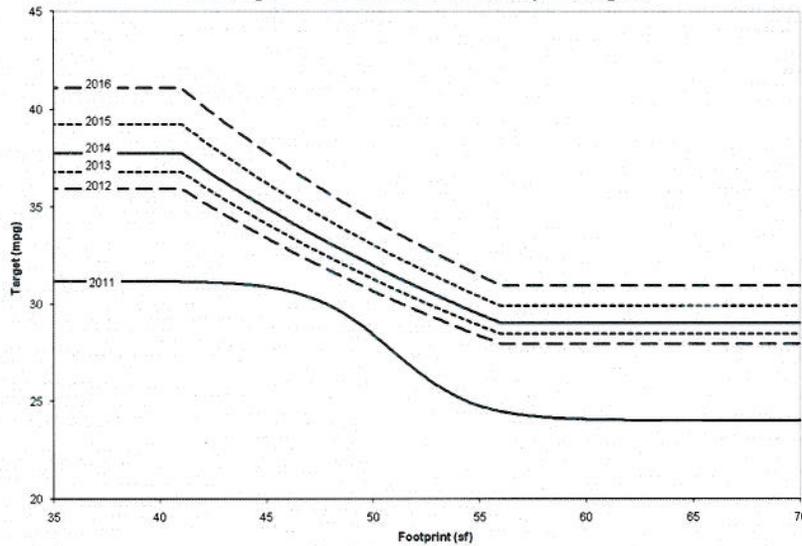
What are the final standards?

NHTSA is issuing CAFE standards that are, like the standards NHTSA promulgated in March 2009 for MY 2011, expressed as mathematical functions depending on vehicle footprint. Footprint is one measure of vehicle size, and is

³ Energy Information Administration, Crude and Petroleum Products Explained, Data & Statistics, Petroleum Statistics, updated January 2010. Available at <http://www.eia.doe.gov/basics/quickoil.html> (last accessed March 30, 2010).

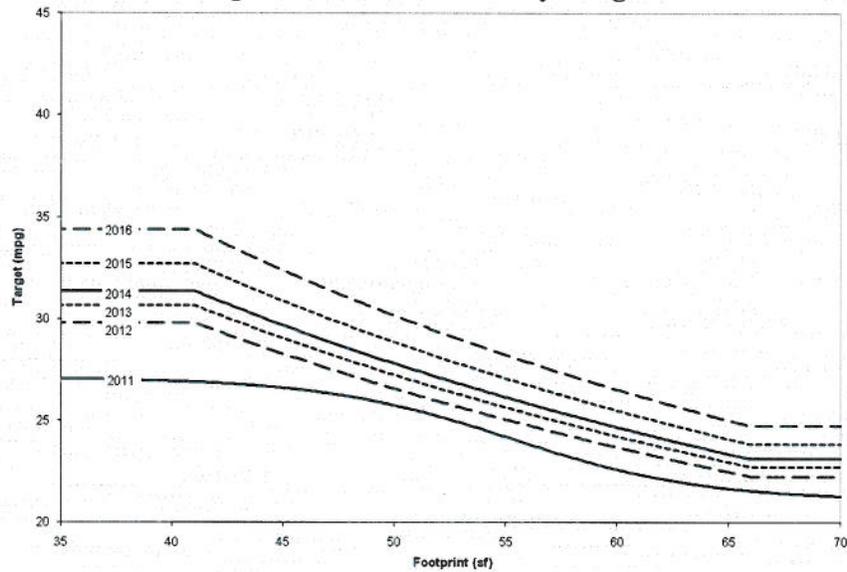
determined by multiplying the vehicle's wheelbase by the vehicle's average track width.⁴ Under the CAFE standards, each light vehicle model produced for sale in the United States will have a fuel economy target. The CAFE levels that must be met by the fleet of each manufacturer will be determined by computing the sales-weighted harmonic average of the targets applicable to each of the manufacturer's passenger cars and light trucks. These targets appear as follows when the values of the targets are plotted versus vehicle footprint – Figure 1 is for passenger cars, and Figure 2 is for light trucks:

Figure 1. Final MY 2011 and MY 2012-2016 Passenger Car Fuel Economy Targets



⁴ See 49 CFR 523.2 for the exact definition of "footprint."

**Figure 2. Final MY 2011 and MY 2012-2016
Light Truck Fuel Economy Targets**



Under these footprint-based CAFE standards, the CAFE levels required of individual manufacturers will depend, as noted above, on the mix of vehicles sold.

It is important to note that NHTSA’s CAFE standards and EPA’s GHG standards will both be in effect, and each will lead to increases in average fuel economy and CO₂ emissions reductions. The two agencies’ standards together comprise the National Program, and this discussion of costs and benefits of NHTSA’s CAFE standards does not change the fact that both the CAFE and GHG standards, jointly, are the source of the benefits and costs of the National Program.

Based on the forecast developed of the MYs 2012-2016 vehicle fleet, NHTSA estimates that the targets shown above will require passenger cars and light trucks to meet an estimated combined average of 34.1 mpg in MY 2016. This represents an average annual increase of 4.3 percent from the 27.3 mpg combined fuel economy level in MY 2011. Table 1 below presents the estimated required levels by model year:

**Table 1. Average Required Fuel Economy (mpg)
under the Standards**

	2012	2013	2014	2015	2016
Passenger Cars	33.3	34.2	34.9	36.2	37.8
Light Trucks	25.4	26.0	26.6	27.5	28.8
Combined	29.7	30.5	31.3	32.6	34.1

For the reader’s reference, these estimated required mpg levels are equivalent to the following in gallons per 100 miles for passenger cars and light trucks:

Table 2. Gallon/100 miles Equivalent to Average Required mpg under the Standards

	2012	2013	2014	2015	2016
Passenger Cars	2.9988	2.9277	2.8624	2.7628	2.6483
Light Trucks	3.9370	3.8472	3.7622	3.6298	3.4766
Combined	3.3634	3.2783	3.1931	3.0699	2.9329

Manufacturers will have flexibilities under the CAFE program to make it easier and less costly for them to comply with the standards. Manufacturers can earn credits by over complying with a standard in a given model year, and can either apply those credits to achieve compliance in any of the three model years before or five model years after the year in which they were earned. They can also transfer the credits from the manufacturer's car fleet to the truck fleet or vice versa; or trade (*i.e.*, sell) them to another manufacturer. Additionally, manufacturers can continue to earn credits for producing alternative or dual-fueled (flex-fueled) vehicles, although Congress has provided for the phase-out of that flexibility by MY 2019.

What are the benefits and costs of the standards?

Over the lifetimes of the passenger cars and light trucks sold in MYs 2012-2016, NHTSA projects that the CAFE standards will save 61.0 billion gallons of fuel and reduce carbon dioxide (CO₂) emissions by 654.7 million metric tons (mmt).

NHTSA estimates that the lifetime benefits of the CAFE standards will total over \$182 billion, including fuel savings, while the net costs of the standards total approximately \$52 billion. For the National Program as a whole (that is, NHTSA's standards and EPA's standards), the agencies estimate that the lifetime benefits will total over \$240 billion. NHTSA attributes most of these benefits—about \$157 billion—to reductions in fuel consumption, valuing fuel savings (for societal purposes) at future pretax prices projected in the Energy Information Administration's (EIA's) reference case forecast from Annual Energy Outlook (AEO) 2010 Early Release.

Costs, in turn, represent necessary increases in technology application that will involve considerable monetary outlays. Because of these costs (and to a much less extent, civil penalties that some companies are expected to pay for noncompliance), the agency estimates that the standards will lead to increases in average new vehicle prices, ranging from \$434 per vehicle in MY 2012 to \$926 per vehicle in MY 2016.

NHTSA notes that there will be benefits and costs beyond those quantified in the agency's analysis—for example, NHTSA has not monetized reductions in toxic air pollutants due to the standards (a benefit), nor potential reductions in vehicle performance or utility (a cost) that might result from the standards. However, by any metric, NHTSA expects that the benefits of the standards will vastly outweigh the costs.

Has NHTSA conducted an environmental analysis for these standards?

As it did for the MY 2011 CAFE standards, NHTSA has developed an Environmental Impact Statement as required by the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (CEQ) and NHTSA. On April 1, 2009, NHTSA published a notice of intent to prepare an EIS for this rulemaking and requested scoping comments. (74 FR 14857) The notice invited Federal, State, and local agencies, Indian tribes, and the public to participate in the scoping process and to help identify the environmental issues and reasonable alternatives to be examined in the EIS. Concurrent with issuance of the proposed standards, NHTSA released a Draft Environmental Impact Statement (DEIS).

NHTSA prepared and issued a Final Environmental Impact Statement (FEIS) in late February to analyze and disclose the potential environmental impacts of the MY 2012-2016 CAFE standards for the total fleet of passenger cars and light trucks and reasonable alternative standards for the NHTSA CAFE Program. The FEIS compares the potential environmental impacts of alternative mile per gallon (mpg) levels that considered by NHTSA for the final rule. It also analyzes direct, indirect, and cumulative impacts and analyzes impacts in proportion to their significance. The FEIS also describes potential environmental impacts to a variety of resources. Resources that may be affected by the action and alternatives include energy use, air quality, climate, water resources, biological resources, land use and development, safety, hazardous materials and regulated wastes, noise, and environmental justice.

Although the alternatives have the potential to decrease GHG emissions substantially compared to the adopted standards, they do not prevent climate change. They do, however, result in reductions in the anticipated increases in CO₂ concentrations, temperature, precipitation, and sea level that are otherwise projected to occur. Estimated CO₂ concentrations for 2100 range from 778.4 ppm under the most stringent alternative to 783.0 ppm under the No Action Alternative. For 2100, the reduction in temperature increase, in relation to the No Action Alternative, ranges from 0.007 °C to 0.018 °C. Given that all the action alternatives reduce temperature increases slightly in relation to the No Action Alternative, they also slightly reduce predicted increases in precipitation. Although these effects are small, they occur on a global scale and are long-lived. They would also, to a small degree, delay the point at which certain temperature increases and other physical effects stemming from increased GHG emissions would occur. NHTSA presumes that these reductions in climate effects will be reflected in reduced impacts on affected resources.

What opportunity was provided for public input on these standards?

We provided 60 days for the public to comment on the joint Notice of Proposed Rulemaking, and 45 days to comment on the DEIS.

In addition, NHTSA held three public hearings jointly with EPA regarding the proposed standards, one in Detroit, Michigan, on October 21, 2009, one in New York, New York, on October 23, 2009, and one in Los Angeles, California, on October 27,

2009. NHTSA also held a separate public hearing for the DEIS in Washington, DC on October 30, 2009.

Where can I find more information?

You can access the rule and related documents, including the FEIS, the Final Regulatory Impact Analysis (FRIA), the computer model used in NHTSA's analysis, the model documentation, and all of the input and output files from the model on NHTSA's website, at <http://www.nhtsa.gov> (click on "Fuel Economy Standards (CAFE)" on the left of the page). Additionally, for information about EPA's standards, you can visit <http://www.epa.gov/otaq/climate/regulations.htm>. You can also check the rulemaking dockets (NHTSA-2009-0059) (EPA-HQ-OAR-2009-0472) for materials posted by the agencies, as well as comments submitted by the public.