

petroleum consumption. World crude oil production is highly concentrated, exacerbating the risks of supply disruptions and price shocks. Tight global oil markets led to prices over \$100 per barrel in 2008, with gasoline reaching as high as \$4 per gallon in many parts of the U.S., causing financial hardship for many families. The export of U.S. assets for oil imports continues to be an important component of the historically unprecedented U.S. trade deficits. Transportation accounts for about two-thirds of U.S. petroleum consumption. Light-duty vehicles account for about 60 percent of transportation oil use, which means that they alone account for about 40 percent of all U.S. oil consumption.

1. Building Blocks of the National Program

The National Program is both needed and possible because the relationship between improving fuel economy and reducing CO₂ tailpipe emissions is a very direct and close one. The amount of those CO₂ emissions is essentially constant per gallon combusted of a given type of fuel. Thus, the more fuel efficient a vehicle is, the less fuel it burns to travel a given distance. The less fuel it burns, the less CO₂ it emits in traveling that distance.¹¹ While there are emission control technologies that reduce the pollutants (*e.g.*, carbon monoxide) produced by imperfect combustion of fuel by capturing or converting them to other compounds, there is no such technology for CO₂. Further, while some of those pollutants can also be reduced by achieving a more complete combustion of fuel, doing so only increases the tailpipe emissions of CO₂. Thus, there is a single pool of technologies for addressing these twin problems, *i.e.*, those that reduce fuel consumption and thereby reduce CO₂ emissions as well.

a. DOT's CAFE Program

In 1975, Congress enacted the Energy Policy and Conservation Act (EPCA), mandating that NHTSA establish and implement a regulatory program for motor vehicle fuel economy to meet the various facets of the need to conserve energy, including ones having energy independence and security, environmental and foreign policy implications. Fuel economy gains since 1975, due both to the standards and market factors, have resulted in saving

¹¹ Panel on Policy Implications of Greenhouse Warming, National Academy of Sciences, National Academy of Engineering, Institute of Medicine, "Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base," National Academies Press, 1992. p. 287.

billions of barrels of oil and avoiding billions of metric tons of CO₂ emissions. In December 2007, Congress enacted the Energy Independence and Securities Act (EISA), amending EPCA to require substantial, continuing increases in fuel economy standards.

The CAFE standards address most, but not all, of the real world CO₂ emissions because a provision in EPCA as originally enacted in 1975 requires the use of the 1975 passenger car test procedures under which vehicle air conditioners are not turned on during fuel economy testing.¹² Fuel economy is determined by measuring the amount of CO₂ and other carbon compounds emitted from the tailpipe, not by attempting to measure directly the amount of fuel consumed during a vehicle test, a difficult task to accomplish with precision. The carbon content of the test fuel¹³ is then used to calculate the amount of fuel that had to be consumed per mile in order to produce that amount of CO₂. Finally, that fuel consumption figure is converted into a miles-per-gallon figure. CAFE standards also do not address the 5–8 percent of GHG emissions that are not CO₂, *i.e.*, nitrous oxide (N₂O), and methane (CH₄) as well as emissions of CO₂ and hydrofluorocarbons (HFCs) related to operation of the air conditioning system.

b. EPA's GHG Standards for Light-duty Vehicles

Under the Clean Air Act EPA is responsible for addressing air pollutants from motor vehicles. On April 2, 2007, the U.S. Supreme Court issued its opinion in *Massachusetts v. EPA*,¹⁴ a case involving EPA's a 2003 denial of a petition for rulemaking to regulate GHG emissions from motor vehicles under section 202(a) of the Clean Air Act (CAA).¹⁵ The Court held that GHGs fit within the definition of air pollutant in the Clean Air Act and further held that the Administrator must determine whether or not emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. The Court further ruled that, in making these decisions, the EPA Administrator is required to follow the language of section 202(a) of the CAA. The Court

¹² Although EPCA does not require the use of 1975 test procedures for light trucks, those procedures are used for light truck CAFE standard testing purposes.

¹³ This is the method that EPA uses to determine compliance with NHTSA's CAFE standards.

¹⁴ 549 U.S. 497 (2007).

¹⁵ 68 FR 52922 (Sept. 8, 2003).

rejected the argument that EPA cannot regulate CO₂ from motor vehicles because to do so would *de facto* tighten fuel economy standards, authority over which has been assigned by Congress to DOT. The Court stated that "[b]ut that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public's 'health' and 'welfare', a statutory obligation wholly independent of DOT's mandate to promote energy efficiency." The Court concluded that "[t]he two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency."¹⁶ The case was remanded back to the Agency for reconsideration in light of the Court's decision.¹⁷

On December 15, 2009, EPA published two findings (74 FR 66496): That emissions of GHGs from new motor vehicles and motor vehicle engines contribute to air pollution, and that the air pollution may reasonably be anticipated to endanger public health and welfare.

c. California Air Resources Board Greenhouse Gas Program

In 2004, the California Air Resources Board approved standards for new light-duty vehicles, which regulate the emission of not only CO₂, but also other GHGs. Since then, thirteen states and the District of Columbia, comprising approximately 40 percent of the light-duty vehicle market, have adopted California's standards. These standards apply to model years 2009 through 2016 and require CO₂ emissions for passenger cars and the smallest light trucks of 323 g/mi in 2009 and 205 g/mi in 2016, and for the remaining light trucks of 439 g/mi in 2009 and 332 g/mi in 2016. On June 30, 2009, EPA granted California's request for a waiver of preemption under the CAA.¹⁸ The granting of the waiver permits California and the other states to proceed with implementing the California emission standards.

In addition, to promote the National Program, in May 2009, California announced its commitment to take several actions in support of the National Program, including revising its

¹⁶ 549 U.S. at 531–32.

¹⁷ For further information on *Massachusetts v. EPA* see the July 30, 2008 Advance Notice of Proposed Rulemaking, "Regulating Greenhouse Gas Emissions under the Clean Air Act", 73 FR 44354 at 44397. There is a comprehensive discussion of the litigation's history, the Supreme Court's findings, and subsequent actions undertaken by the Bush Administration and the EPA from 2007–2008 in response to the Supreme Court remand. Also see 74 FR 18886, at 1888–90 (April 24, 2009).

¹⁸ 74 FR 32744 (July 8, 2009).