



U.S. ENERGY AND CLIMATE ROADMAP · CHAPTER BRIEF

# Four Proposals to Improve Fuel Economy Standards

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Policymakers can make fuel economy standards more efficient and effective by eliminating distinctions between vehicles of different sizes and types to remove an implicit incentive for automakers to build bigger vehicles; by establishing a formal, transparent market to trade emissions credits to help industry reduce emissions at the lowest possible cost; and by promulgating new rules to bring emissions testing under the direct supervision of regulators and tough penalties for violations to deter cheating and increase trust.

## The Challenge

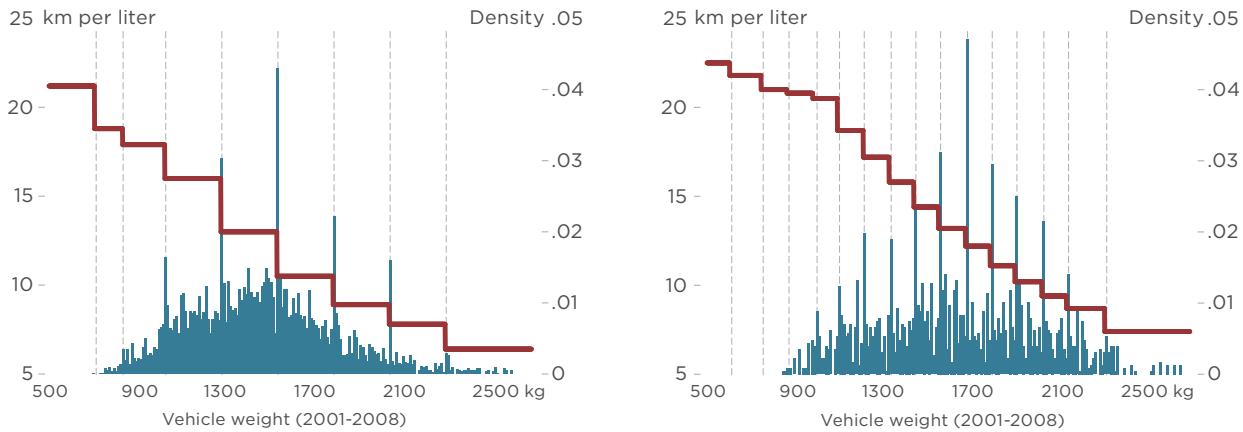
Transportation makes up the largest portion of energy-related greenhouse gas emissions in the United States. Sixty percent of those emissions come from cars and light trucks. Fuel economy standards are the single most important U.S. policy regulating fuel consumption and emissions in the transportation sector. But the program delivered fuel savings that are more than one-third smaller than projected, in part because of two trends: Americans are driving more light trucks and SUVs than expected (52 percent of the market in 2018 versus a projected 36 percent) and vehicles are getting larger, instead of smaller, as projected. As a result, in 2018 and 2019, transportation emissions were among the highest they've been in U.S. history.

## Policy Context

The United States enacted its first Corporate Average Fuel Economy Standards (CAFE) in response to the 1973-1974 oil embargo, which caused oil prices to triple. The program—created by the Department of Transportation (DOT), administered by the National Highway Transportation Safety Administration (NHTSA), and assessed by the

Environmental Protection Agency (EPA)—established one national fuel economy standard for passenger cars and another laxer standard for light trucks. In 2007, again amid high oil prices, the program was updated to include a credit trading scheme that allows automakers to transfer credits between its passenger cars and light trucks categories, sell them to other manufacturers, or bank and borrow them across years. This scheme allows investments to be made where the cost of improvement is lowest. Further, the system of “corporate averaging” was replaced with targets adjusted to a vehicle’s footprint with larger vehicles receiving looser targets and each automaker given its own annual target based on the fleet of vehicles it sold. Finally, in 2011, following a Supreme Court decision that EPA had the authority to regulate greenhouse gas emissions under the Clean Air Act, a new set of tailpipe greenhouse gas emissions standards was created for cars and light trucks. Administered by EPA and NHTSA, its initial set of standards covers model years 2012-2025.

## Fuel Economy Standards and Vehicle Characteristics



Source: Ito and Salle (2018)

● Fuel Economy Standard ● Density of Vehicles in the Market

### Recommendations

Redesigning key elements of the standards can increase the net benefits of the policy and better achieve the goals of reducing fuel usage and emissions at the lowest cost.

- **Eliminate footprint-based regulations.** Fuel economy standards are currently required to be based on one or more vehicle attributes. However, evidence from Japan shows that such attribute-based standards can incentivize automakers to increase the size of their cars just enough to reach the next attribute category. The incoming administration should therefore work with Congress to amend the law, eliminating the requirement for standards to be based on vehicle attributes.
- **Eliminate the distinction between cars and light trucks.** The Energy Policy and Conservation Act empowered NHTSA to set separate standards for passenger cars and light trucks, incentivizing companies—as with the footprint-based standards—to shift sales from cars to SUVs and pickups. The law is less clear, however, on whether the standards need to be different. The administration can either work with Congress to amend the law and create a single standard for all passenger vehicles, or DOT can take advantage of the ambiguity to establish separate but identical fuel standards.
- **Facilitate trading of compliance credits.** While companies are banking and borrowing their own credits, little trading has occurred between firms, partly because trades occur on a one-to-one basis and the transaction details are kept secret. Congress can create a transparent auction market mechanism, similar to what is used in wholesale electricity markets. Automakers would use the market to submit their selling and purchasing bids on compliance credits, making compliance trading more transparent and efficient.
- **Prevent automakers from manipulating their fuel economy ratings.** Official fuel economy ratings may be overstated by as much as 50 percent compared to actual, on-road fuel economy ratings. To prevent automakers from manipulating their fuel economy ratings, the Biden administration can take three critical steps: 1) DOT can work with EPA and automakers to design a fuel efficiency test cycle that better reflects real-world driving conditions, 2) Congress can amend the law to require either EPA or DOT to oversee testing directly instead of conducting it by audit, and 3) EPA and DOT can create a significant financial penalty for deviation from official standards in on-road performance.



#### FURTHER READING

### The Economics of Attribute-Based Regulation: Theory and Evidence from Fuel Economy Standards

The Review of Economics and Statistics, Volume 100, No. 2

Attribute-based standards incentivize automakers to increase the weight of their vehicles. And, while the attribute-based standards are more efficient than a flat standard alone, they are twice as costly as a flat standard accompanied by credit trading.