

More Trucks and SUVs Make Standards More Important, Not Harder to Achieve

How flexible standards can mean big savings for all new vehicles

In 2012, the Environmental Protection Agency and the National Highway Traffic Safety Administration set standards for fuel economy and global-warming emissions for passenger cars and trucks built between 2017 and 2025, building upon the 2012–2016 standards set in 2010 (EPA and NHTSA 2010, 2012). The agencies are reviewing the standards for 2022–2025 to assess both industry progress and changes to the marketplace.

Booming Vehicle Sales, with SUVs on the Rise

When the federal government finalized the first phase of rules, the auto industry had sold 11 million passenger cars and trucks in the 2010 model year, the lowest total since 1983 (EPA 2015).¹ Since then, sales of new light-duty vehicles have taken off, with total sales on pace to reach historic highs.

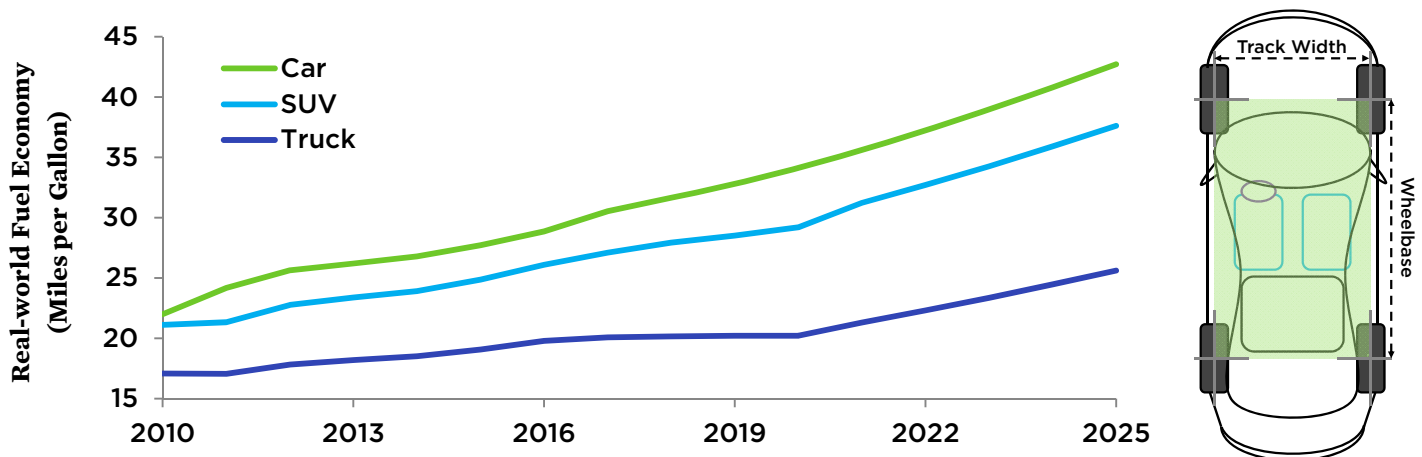
One recent trend is the growing proportion of consumers

who buy sport utility vehicles (SUVs).² This consumer shift significantly affects fuel use: the average SUV uses about 14 percent more fuel than a similarly sized car.³ Nevertheless, the standards are designed to ensure that *all* vehicles, including trucks and SUVs, continue to improve.

Consumer Demand: Fuel Efficiency for All Vehicles

Despite booming SUV sales, consumers do care about fuel economy. The latest data show that fuel economy is the single most important factor in the decision of which vehicle to purchase (NADA 2014, J.D. Power 2015, CFA 2016). This makes it even more important for manufacturers to offer more efficient vehicles across their entire lineup of cars and trucks and not just a few “green” models.

FIGURE 1. How footprint-based vehicle standards improve fuel economy of all vehicles



Vehicle efficiency standards are based upon the footprint of the vehicle (indicated by the highlighted region). Larger vehicles generally require more energy and therefore have lower regulatory targets. Fuel-economy targets based on the size of the most popular car, truck, and SUV show that while cars may have to achieve higher fuel-economy targets than trucks, all vehicles will improve greatly thanks to these standards.

Lines represent the estimated real-world fuel economy according to the prescribed light-duty vehicle standards corresponding to each year, including shortfall from lab tests, based on the footprints of the Toyota Camry (car), Honda CR-V (SUV), and Ford F-150 (truck).

SOURCES: EPA AND NHTSA 2010, 2012

Standards Tailored to Automakers and Consumers

Rather than setting a single fuel-economy target for the average vehicle sold by a manufacturer, which is what previous vehicle standards did, the latest vehicle standards consider the size and type of the vehicles sold (Figure 1). Designed in collaboration with automakers, the recent size-based standards take into account the average vehicle purchased from each manufacturer when assessing the target. For example, if Ford only sold its F-150 in 2025, the company's target would be just 34.1 mpg, much lower than the projected national average target of 54.5 mpg.⁴

This policy also encourages automakers to offer efficient vehicles in all sizes and types. A manufacturer whose vehicles achieve their respective targets is well positioned to comply with the regulations, regardless of sales volume in a given year. This means offering more efficient options for consumers across *all* vehicle types.

Saving Fuel, Avoiding Emissions

Truck sales have boomed before. In the late 1990s, fuel economy went backward as consumers bought large, truck-based SUVs while vehicle standards remained constant.

Today's challenge is similar, but size-based standards that get stronger over time ensure that vehicle efficiency will improve despite changing consumer preferences. Thanks to the standards now in place out to 2025, emissions will fall by more than 600 million metric tons in 2040, even with higher SUV sales (Figure 2). Without today's strong, flexible standards, the country would again move backward.

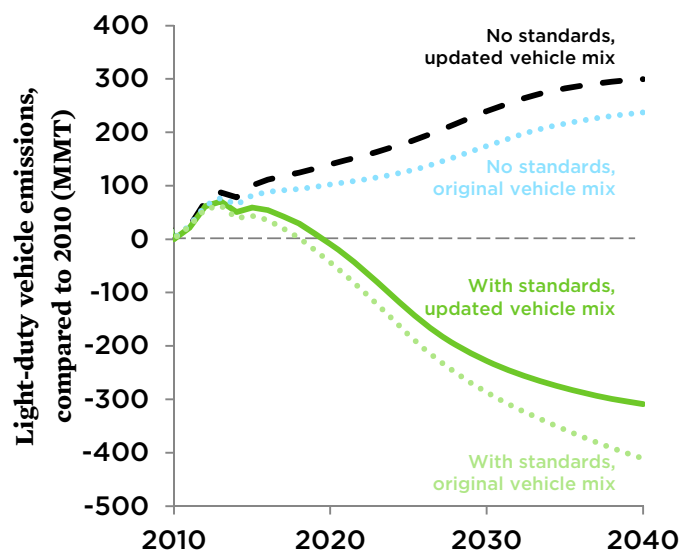
Doing Well by Doing Better

Since the vehicle standards went into effect, innovation has made it possible for manufacturers to achieve even greater fuel efficiency in conventional, fossil-fueled vehicles, even as they introduce electric vehicles. In fact, manufacturers are well ahead of current standards (EPA 2015). More than 10 percent of the vehicles sold last year, including many popular trucks and

SUVs, already meet standards for 2020–2025 (UCS 2015).

Maintaining current regulations will yield a tremendous drop in fuel usage and global-warming emissions—but still not enough to achieve initial projections (Figure 2). However, updating standards to reflect recent advances in technology could help put us back on course, even with higher sales of trucks and SUVs. Stronger standards will provide consumers with choices of efficient vehicles while helping the country achieve its goals for reducing emissions and oil consumption.

FIGURE 2. Global warming emissions reductions under light-duty vehicle standards, compared to 2010



Without strong fuel-economy standards in place, global-warming emissions from passenger vehicles would skyrocket (black dashed line) to levels even higher than anticipated in 2012 (blue dotted line). Flexible standards help reduce emissions (green solid line); however, consumers buying more trucks and SUVs means that a stronger rule will be necessary to achieve the agencies' original projected level of improvement (green dotted line).

2010 emissions = 1,341 million metric tons (MMT)

SOURCES: UCS ANALYSIS, BASED ON EIA 2015 AND EPA AND NHTSA 2010, 2012

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ENDNOTES

- 1 Passenger cars and trucks are defined here as light-duty cars, light-duty trucks, and medium-duty passenger vehicles. This includes all vehicles with a gross vehicle weight rating (GVWR) less than 8,500 pounds, as well as SUVs and passenger vans with a GVWR less than 10,000 pounds. This excludes sales of heavy-duty pick-ups (e.g., Ford F-250 and F-350), which are considered commercial vehicles, with different regulations.
- 2 In 2010, cars made up 55 percent of all sales (EPA 2015). Today, that has dropped below 45 percent, with SUVs rising from 29 percent to 39 percent of the passenger-vehicle market (WardsAuto 2016a, 2016b). These figures exclude sales of commercial vehicles.
- 3 This value is based on a sales-weighted assessment comparing the fuel economy of SUVs with that of cars based on the same platform, adjusting for differences in footprint but not weight.
- 4 When the agencies crafted the regulations, they anticipated that 2025 vehicles would have to meet a global-warming emissions target equivalent to 54.5 mpg. The equivalent value is based on EPA's global-warming emissions standard and assumes achieving all improvements through improved fuel economy, as measured in lab tests. However, part of achieving EPA's standard will be accomplished by improved efficiency of vehicle air-conditioning systems and the use of refrigerants with low global-warming potential. Furthermore, lab tests overestimate fuel economy in the real world. Therefore, the 54.5 mpg target equates to about 37 mpg in real-world fuel economy.

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