

Method of calculating fuel savings and emissions from vehicle efficiency regulations

Vehicle sales information

For past vehicle sales data, we refer to the EPA Trends reports.¹ We assume that the model year begins on October 1 of the previous year (e.g., MY2016 started on 10/1/15), and we assume those sales to be evenly dispersed throughout the year. For historical data that is not yet finalized (and therefore not included in EPA Trends), we have used WardsAuto sales numbers. To project forward, we consider sales projections,² excluding the sales of medium-duty pick-ups.

Fuel economy data

Fuel economy data comes from EPA Trends and EPA's manufacturer compliance data, which includes credits for emissions reductions not captured directly in the fuel economy tests.³ Future fuel economy is projected forward improvement for each vehicle class based on the compound rate of growth to-date—this is a conservative assumption, since the regulations require greater year-to-year improvements over time. We use a linear extrapolation for off-cycle technologies because it is more consistent with the historical record—this is more conservative than compound growth.

Vehicle usage

Miles traveled by a vehicle varies year-to-year—as a vehicle ages, it is less likely to remain on the road, and its annual mileage tends to be reduced. We base our assumptions on scrappage rates and miles traveled on the latest data from the Department of Transportation.⁴ We project an annual increase in miles traveled of 1.15 percent, consistent with the EPA MOVES 2014a model and the agencies' work as part of the 2017-2025 rulemaking.

Calculation of savings

In the absence of regulation, it is assumed fuel economy and emissions would not have improved beyond the 2010 model year.⁵ For fuel prices, we reference Energy Information Administration.⁶

¹ The most recent report is available at <https://www.epa.gov/fueleconomy/trends-report>.

² For 2017-2018, we considered BMI analysis: <http://www.bmiresearch.com/articles/light-vehicle-market-set-for-2017-decline>.

³ The 2015 finalized data is available here: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-ghg-emission-standards-light-duty-vehicles>.

⁴ Vehicle survivability and travel mileage schedules, published by the National Highway Traffic Safety Administration in January 2006: <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/809952>.

⁵ While EPA did not begin setting vehicle standards until the 2012 model year, NHTSA utilized a national footprint-based standard for cars and trucks beginning in the 2011 model year.

⁶ Historical data comes from the Gasoline and Diesel Update: <https://www.eia.gov/petroleum/gasdiesel/>. Projected future prices come from AEO 2016: <https://www.eia.gov/outlooks/aeo/data/browser/>.