



Figure 2: Comparison of fuel economy data for the 2014 and 2018 Ford F150 Pickup 2WD 6 cyl, 3.5L, automatic. Fuel economy expressed in miles per gallon.

vehicle sales using a total-cost-of-ownership method that accounts for changes in the costs of vehicle operation and vehicle price. Our results indicate a range of expected outcomes, with sales in model year 2025 for new vehicles varying from -10% to +4% compared to the baseline. This range highlights the significant uncertainty that exists around new sales volumes, but most of our updated modeling shows negative impacts on new vehicle sales. A slower volume of new vehicle sales is important economically since it can have adverse effect in employment and GDP growth. In addition, it reduces the effectiveness of the standards by compromising the goal of decreasing oil consumption and emissions of GHGs.

What is next for the combined standards?

Our work highlights several key points about the future effects of the combined standards. These points summarize our recommendations:

- In the long term (past 2025), the federal standards will likely yield benefits to the U.S. economy and thus our report provides evidence supporting retention of the federal standards. However, there are potential refinements to the standards or to related policies that, if implemented, could

attenuate the near-term economic damages while increasing program effectiveness.

- There is a need for more research in the way consumers value fuel economy in the markets for used and new vehicles. Currently, most of the economics literature addresses this question by using variation in fuel prices as a mechanism to identify consumers' valuation of fuel economy. However, in the context of CAFE what is more important is the extent to which consumers value fuel efficient technologies mandated by regulation. Consumers' valuation of fuel efficient vehicles is, of course, affected by fuel prices, however, the current literature cannot isolate how consumers value specific fuel efficient technologies. Research directed at addressing this question would be well positioned to inform policy making by helping to understand how likely consumers are to respond to the new technologies stimulated by regulation.

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Where did all the health benefits go? Evaluating EPA's repeal of the Clean Power Plan

Think about driving a car down a highway. Music playing. Wind in your hair. It's a classic symbol of American freedom. But regulation is never far away. Check out that speed limit sign. You know how it works: the police can fine you for driving faster than 70 mph. The faster you drive, the bigger the fine. Maybe you think it's over regulation. But the point of the speed limit is pretty clear. You could cause an accident if you drive too fast and the higher the speed, the worse the accident. In other words, speed kills. Speed limits are supposed to make the highways safer for everyone. Most people are sympathetic to the basic idea of a speed limit. But why is there a specific speed limit at 70 mph? That seems arbitrary. Why not 60 mph? Or 80 mph? It's not like the connection between speed and safety only begins when you cross the official threshold. People still die in law abiding 50 mph car accidents. Regardless of the official speed limit: It is safer to drive at a slower speed. Of course, this doesn't mean we should set a national speed limit of 15 mph. People enjoy driving fast for good reasons. The ideal speed is the solution to a cost benefit calculation that weighs both the benefits and costs of driving a bit faster. We'll let you make your own choices, but don't be deluded when you do. It is still dangerous to drive, even if you are complying with the posted speed limit.

The speed limit is a good example to keep in mind as the EPA moves to repeal the Clean Power Plan (CPP). The EPA's new analysis on CPP does not consider the health benefits of

improving air quality below an official threshold. With this new report, the EPA is doing the equivalent of advising a young teen that there is no chance of dying in a car accident as long as they drive below the official speed limit. That's not good advice.

What is the Clean Power Plan?

The CPP is the signature climate change rule of the Obama administration. It was meant to cut carbon dioxide emissions by 32 percent by 2030 by shifting electricity generation away from coal and towards natural gas and renewables. The shift away from coal would also reduce the amount of particulate matter (PM) 2.5 in the air we breathe. Breathing PM2.5 gives you respiratory distress, cardiovascular diseases. It can kill you. In 2015 the EPA predicted that due to reductions in PM2.5 caused by the CPP, between 1,200 and 2,900 premature deaths would be avoided by 2030.

What has changed?

In the proposed repeal, the EPA made three important changes in the way it calculated the costs and benefits of the CPP. First, it revised its estimates of compliance costs upwards. Second, it now considers only the value of domestic (rather than global) climate change benefits from CO₂ reductions. Finally, it decided it would not count any health benefits from reducing PM2.5 concentrations below a threshold.

The third change was the decisive one. The CPP passes a benefit cost test even if you agree with the EPA about the higher compliance costs and with only counting domestic climate change benefits. The CPP fails the benefit cost test only when you decide that health benefits of PM2.5 reduction disappear below a certain threshold.

What EPA's argument?

The EPA's argument hinges on how to value health improvements



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caused by reductions in air pollution. The new report does not dispute that the CPP would cause reductions in coal-fired electricity generation and associated decreases in harmful air pollution. It is well known that burning coal releases pollutants like particulate matter. It is also well known that particulate matter is harmful to human health. The EPA's argument revolves around this question, "Are there levels at which airborne particulate matter is completely safe?" In their proposed repeal, the EPA claims that any airborne concentration of particulate matter below 12 micro grams per cubic meter is completely safe.

At the moment, American air is pretty clean by global standards. Data from the EPA show that only 23 million Americans live in counties with a PM2.5 concentration higher than 12 micrograms per cubic meter of air (<https://www3.epa.gov/airquality/greenbook/kncty.html>). This 12 µg/m³ figure is the threshold that the EPA established in 2012 to determine if an area was in compliance with the Clean Air Act. If we burn less coal, PM2.5 levels in many parts of the country will fall. Some places that are above the 12 microgram standard will fall below and some places that are already

below could fall even further. The EPA's new cost benefit analysis says that there is no value in reducing particulate matter below the standard. But that is hard to swallow. The 12 µg/m³ threshold is just as arbitrary as a 70 mph speed limit. Driving slower than 70 mph on a highway will often make you safer. Breathing air with less than 12 µg/m³ of PM2.5 is healthier, too.

A lot of the discussion surrounding the CPP and the EPA's methodology is complicated and technical. Weighing the benefits and costs of the CPP is the right way to think about whether to pass or repeal, but only if all of the benefits and costs are correctly accounted for. Based on our expertise in energy and environmental policy, it's clear the EPA has it wrong on common sense grounds. Human safety cannot be guaranteed by discrete thresholds. People still die in car accidents even though they drive below the speed limit and air pollution can still be harmful even if it's below a threshold.

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