SAVING MONEY AT THE GAS PUMP

State-by-State Consumer Savings from Stronger Fuel Efficiency and Carbon Pollution Standards

Making our cars and trucks go farther on a gallon of gasoline is a powerful way to save Americans more than $44 billion annually at the gas pump, reduce carbon pollution, and cut oil dependence. Fuel-saving technology, such as more efficient engines, smarter transmissions, better aerodynamics, and high-strength lightweight materials can make all vehicles get better fuel efficiency and emit less tailpipe carbon pollution.

Upcoming Standards Will Improve Fuel Economy and Cut Carbon Pollution

Right now, the Obama Administration is taking action to strengthen fuel efficiency and carbon pollution standards for new vehicles sold in the United States. In July, President Obama directed the U.S. Department of Transportation (DOT) and Environmental Protection Agency (EPA) to establish joint fuel efficiency and pollution standards for new cars and trucks that will reach the equivalent of 54.5 miles per gallon (mpg) and emit 163 grams of carbon dioxide per mile (g/mi) in 2025. The new standards are fleet average requirements, which mean that some vehicles would have higher fuel efficiency and some would be lower.

The standards are also pegged to specific laboratory tests instead of real-world driving conditions. In 2025, cars and trucks will average closer to 40 miles per gallon in actual driving, which is nearly double today's on-road average of 22 mpg.

Raising fuel efficiency standards to 54.5 mpg and setting a 163 g/mi standard will deliver significant economic, environmental, and national security benefits. It will save 23 billion gallons of oil in 2030 and reduce heat-trapping carbon pollution by 280 million metric tons – the equivalent of having 40 million fewer vehicles on the road in that year.

Consumers in All States Save Money

In addition to the oil savings and clean air benefits, increasing the fuel efficiency of new vehicles will mean American consumers will spend less at the gas pump. Over the life of a new vehicle, consumers could keep thousands of additional dollars in their pocketbooks instead of spending them on gas—and that's even after accounting for the cost of the fuel-saving technology. In fact, for most consumers who finance the purchase of a new vehicle, the fuel savings will be greater than the additional cost of the loan from the moment they drive off the lot. The *net* consumer savings by both state and household are show in the following table:

Table 1: Annual Consumer Savings of Proposed 2017-2025 Standards on Transportation Fuel Bills in 2030, by State and Household

State	Fuel Savings (million gallons)	Total State Fuel Bill Net Savings ($ millions)	Fuel Bill Net Savings per Household	Carbon Pollution Reductions (Thousands of metric tons CO_2-e)
Alabama	366	$737	$387	4,335
Alaska	52	$96	$312	610
Arizona	733	$1,536	$387	8,675
Arkansas	258	$535	$423	3,050
California	2,668	$4,954	$314	31,585
Colorado	412	$825	$370	4,880
Connecticut	239	$457	$324	2,825
Delaware	71	$139	$360	840
District of Columbia	35	$70	$374	410
Florida	2,098	$4,223	$371	24,835
Georgia	814	$1,607	$364	9,635
Hawaii	83	$153	$313	975
Idaho	132	$270	$378	1,560
Illinois	759	$1,190	$240	8,985
Indiana	400	$631	$241	4,730
Iowa	199	$351	$302	2,360
Kansas	195	$356	$314	2,305
Kentucky	345	$705	$393	4,080
Louisiana	363	$739	$415	4,300
Maine	97	$189	$329	1,145
Maryland	484	$960	$365	5,730
Massachusetts	457	$881	$327	5,405
Michigan	622	$976	$240	7,365
Minnesota	417	$767	$316	4,940
Mississippi	219	$451	$396	2,590
Missouri	433	$793	$314	5,130
Montana	77	$153	$368	905
Nebraska	122	$219	$309	1,440
Nevada	297	$629	$391	3,515
New Hampshire	107	$210	$332	1,265
New Jersey	504	$727	$204	5,960
New Mexico	145	$293	$374	1,710
New York	1,022	$1,485	$205	12,095
North Carolina	877	$1,768	$372	10,385
North Dakota	42	$74	$303	490
Ohio	691	$1,058	$234	8,180

Oklahoma	311	$635	$417	3,675
Oregon	319	$605	$321	3,770
Pennsylvania	701	$991	$200	8,290
Rhode Island	76	$148	$330	900
South Carolina	363	$718	$365	4,295
South Dakota	53	$94	$307	625
Tennessee	557	$1,148	$396	6,595
Texas	2,411	$5,024	$425	28,550
Utah	202	$408	$373	2,390
Vermont	48	$92	$326	560
Virginia	691	$1,366	$365	8,180
Washington	562	$1,060	$319	6,655
West Virginia	129	$253	$361	1,525
Wisconsin	365	$571	$239	4,320
Wyoming	38	$73	$358	445
U.S. Aggregate	23,660	$44,394	$330	280,000

Methodology: Calculating Consumer Fuel Savings

Consumers save money by driving vehicles that go farther on a gallon of gas. Lower fuel consumption results in lower fuel expenditures and less pollution. Cleaner, more efficient vehicles require new fuel-saving technologies and we account for the additional costs of these technologies in our savings calculations. The incremental costs are modest, however, when compared to the fuel savings so consumers end up with the large net savings shown in Table 1 above.

We calculate the savings to households in 2030 by taking the difference in the cost of driving a fleet made up primarily of vehicles that meet fuel efficiency and carbon pollution standards established through model year 2016[1] of 35.5 mpg and 250 g/mi (base case) and the cost of purchasing and driving more efficient vehicles that reach a fleet average of 54.5 mpg and 163 g/mi (higher efficiency case).

The assumption about the fuel efficiency and emissions of the fleet in 2030 presumes the standards remain in place and unchanged from 2025 to 2030. Our calculations of fleet fuel efficiency account for the fact that the real-world on-road mileage is about 27 percent lower than the standards.

The cost of driving is simply the product of fuel consumption and fuel prices. For both the base and higher efficiency vehicle cases, we start with gasoline prices as projected by the Energy Information Administration (EIA). When calculating the transportation cost of the more efficient fleet, however, we adjust the cost to include a modest fuel price decrease because a reduction in U.S. oil demand puts downward pressure on world oil prices, and therefore state gas prices. It should be noted that, even without the cost-reduction effect, all states have substantial net savings.

Fuel consumption for the base and higher efficiency cases is determined by dividing EIA mileage projections by projections of on-road vehicle efficiency (in miles per gallon), which come out of a

[1] EPA/NHTSA Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for MY2012-MY2016 finalized on April 1, 2010.

national vehicle stock turnover model. For this analysis, the 2030 national consumption is then allocated to states in proportion to state-level household projections. State-level fuel costs are calculated by multiplying a state's consumption by the gasoline prices for that state's region. Finally, average state household costs are determined by dividing state costs by 2030 household projections from Census data.

Reductions in carbon pollution in 2030 are determined with a national stock model and are allocated to states in accordance to the fuel consumption in the region and the state-level household projections.

Detailed Assumptions

Fuel Prices

State gasoline prices for the base case are assumed to equal the prices for the region in which the state is located, as reported by the regional data of EIA's *Annual Energy Outlook 2011*.[2] In the higher efficiency case, those base case gasoline prices are adjusted downward to reflect the fact that changes in U.S. oil demand can affect world oil prices and therefore U.S. gasoline prices. Today, the U.S. consumes nearly a quarter of world daily production and a reduction in demand from driving more efficient vehicles will lower worldwide demand and therefore oil prices. We adopt the EPA/NHTSA estimates that the drop in fuel prices due to the new standards is equivalent to $0.28 per gallon.[3] However, as mentioned above, even with this price reduction excluded from the analysis, households in all states still save money on their monthly fuel bills in 2030.

Vehicle Costs

The technology to make more efficient vehicles increases the price of the vehicles. For the higher efficiency case, we assume that MY 2025 – MY 2030 vehicles reaching a fleet average of 54.5 mpg-equivalent will cost $2030 more than vehicles that reach the MY 2016 35.5 mpg-equivalent standard in the base case. To the incremental technology cost, we add sales tax and insurance using EPA estimates for a total incremental cost of about $2178.[4]

We also assume that the incremental cost is not paid for entirely upfront but is included in a 5-year loan with a 7 percent interest rate. We allocate the more efficient vehicle incremental costs to individual states according to an estimate of new vehicles sales in each state in 2030. We use the EIA *Annual Energy Outlook 2011* projection of national sales and assign each state a share of the sales according its projected fraction of national households in 2030.

For Further Information:

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[2] Available at http://www.eia.doe.gov/oiaf/aeo/index.html. Using motor gasoline retail prices.
[3] EPA/NHTSA MY2012-2016 Final Rule, Table III.H.8-1. Assumes 42 gallons per barrel.
[4] EPA/NHTSA MY2012-2016 Final Rule, Tables I.C.2-6 and III.H.5-3.