



SUMMER on the ROAD

Going Farther on a Gallon of Gas



Summer on the Road:

Going Farther on a Gallon of Gas

John Cross
Environment America
Research & Policy Center

May 2012

Acknowledgments

The author wishes to thank Anna Aurilio of Environment America Research & Policy Center for her editorial support and guidance, as well as Elizabeth Ridlington of Frontier Group and Luke Tonachel of the Natural Resources Defense Council for their editorial assistance.

Environment America Research & Policy Center thanks the Energy Foundation for making this report possible.

© 2012 Environment America Research & Policy Center

The author bears responsibility for any factual errors. The recommendations are those of Environment America Research & Policy Center. The views expressed in this report are those of the authors and do not necessarily reflect the views of our funders or of those who provided review.

Environment America Research & Policy Center is a 501(c)3 organization. We are dedicated to protecting America's air, water and open spaces. We investigate problems, craft solutions, educate the public and decision makers, and help Americans make their voices heard in local, state and national debates over the quality of our environment and our lives. For more information about Environment America Research & Policy Center or for additional copies of this report, please visit www.EnvironmentAmericaCenter.org.

Cover Photos, accessed May 15, 2012:

Top image:

Toyota Prius, from Toyota Motor Corporation.

Bottom images, from left to right:

Traffic Jam, from Aaron Kohr/Shutterstock.

Summer road trip, from JJ Photo/Bigstock.

Gas pump sign, from Gorilla/Bigstock.

Table of Contents

Executive Summary.....	4
The United States Needs to Get off Oil.....	6
54.5 mpg – We Have the Technology to Get There.....	6
Clean Cars will Cut Oil Consumption.....	6
Efficient Vehicles will Save Consumers Money at the Pump.....	7
Moving Clean Cars into the Fast Lane.....	8
Conclusion.....	9
Methodology.....	10
Appendix.....	11
Notes.....	13

Executive Summary

As summer approaches, the dangers of our continued dependence on oil are apparent everywhere we look. In 2012, we have already experienced the hottest average temperatures ever recorded through April in the United States.¹ At the same time, increasing evidence is still coming forth of long-lasting harm from the BP oil spill,² and other tragic spills have occurred in waterways throughout the country since.

Our oil dependence risks our environment to disasters like oil spills, endangers our climate with the nearly 2 billion metric tons of global warming pollution from oil consumption each year, and threatens our families' health.³ With prices in some areas hitting \$4 per gallon once again, our oil consumption is also putting an incredible burden on American families' finances. It's time for us to break our dependence on oil.

The transportation sector accounts for nearly two-thirds of the nearly 19 million barrels of oil consumed each day in the United States.⁴ The largest percentage is consumed by passenger cars and light duty trucks such as SUVs, vans, and pickup trucks.⁵ Our greatest opportunity to cut America's oil consumption is to set strong global warming pollution and fuel efficiency standards for our cars and trucks.

The summer travel season is the most popular time of the year for driving, which means it's also when Americans most feel not just the environmental consequences of oil, but the economic pain at the pump. Americans are expected to spend more than \$132 billion at the gas pump this summer.

American ingenuity has provided the technology to make our current vehicle fleet much cleaner and more fuel efficient. Automakers have developed plug-in hybrid cars that can travel 100 miles on a gallon of gas and U.S. auto dealers are selling electric cars that can go more than 200 miles on one charge.⁶ Meanwhile, numerous technologies are already being put to use to make conventional internal combustion engine vehicles more efficient. Recognizing this, the Obama administration is currently developing new fleet-wide fuel efficiency and global warming pollution standards for cars and light trucks through 2025.

If our cars and trucks today met the proposed 54.5 mpg standard, Americans would cut gasoline consumption by 16 billion gallons over the course of this summer, slashing global warming pollution by more than 146 million metric tons and saving consumers over \$64 billion at the gas pump. The average American family would save \$551 in just three months. Not only could families take road trips to their favorite summer destinations without worrying about the impacts of the gasoline they burn along the way, but they could book a hotel for a couple of extra days with the money they would be saving. While all 50 states would experience similar savings, California, Texas, Florida, New York, and North Carolina would see the largest overall reductions in gasoline consumption and global warming pollution. Meanwhile, individual families would be able to save the most

gasoline—as well as the most money—in Wyoming, Mississippi, Montana, North Dakota and North Carolina.

The proposed standards build on the recently finalized light-duty standards for model years 2012-2016, which represented the largest increase in fuel economy in over 30 years and the first-ever global warming tailpipe pollution standards. These standards were first developed based on standards created by California and adopted by 13 other states: Arizona, Connecticut, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Vermont and Washington.

By requiring the average cars and light trucks to achieve a standard of at least 54.5 mpg miles per gallon by 2025, the administration's new standards would yield major savings beyond just a single summer. The Natural Resources Defense Council projects that even beyond fuel efficiency standards currently in place, the new proposal will cut our oil consumption by 71.4 million gallons of oil per day by 2030. That's as much we currently import from Saudi Arabia and Iraq combined. And that also means cutting 297 million metric tons of carbon pollution for each full year by 2030—the equivalent of the pollution pumped out by 76 coal-fired power plants.⁷ Finalizing these standards will be a resounding victory for American families, dramatically reducing oil consumption, cutting pollution, and yielding cost savings at the pump—not just for one summer, but for years to come.

America has the workforce and the technology ready to build cleaner, more fuel efficient cars that help break our dangerous dependence on oil. We only require our leaders to put American ingenuity to work to move us beyond oil. The Obama administration should move clean cars into the fast lane by setting standards that require new cars and light trucks to meet a standard of 54.5 miles per gallon by 2025.

The United States Needs to Get Off Oil

America's dangerous dependence on oil harms our environment and threatens our economy. Our dependence on this dirty energy source devastates our shores as we have sadly seen along the Gulf Coast as well as on other treasured waterways across the country, including the Kalamazoo river and the Yellowstone river. It also exacerbates the threat posed by global warming by spewing nearly 2 billion metric tons of carbon pollution into our air, or nearly one third of the global warming pollution we emit.⁸

Getting Americans from point A to point B consumes about two-thirds of the nearly 19 million barrels of oil consumed each day in the United States.⁹ 8.5 million of those barrels of oil directly fuel passenger cars and light duty trucks such as SUVs, vans, and pickup trucks, which means reducing our dependence on oil requires building cars and trucks that are much cleaner and more fuel efficient.¹⁰

54.5 mpg – We Have the Technology to Get There

American ingenuity has given us the technology today that can make cars and trucks achieve a 54.5 mpg fleet-wide standard. By applying existing and emerging fuel saving technologies to

conventional internal combustion engine vehicles, while ramping up production of hybrids and plug-in electric vehicles, automakers can deliver a full range of cars and trucks that use less oil and emit less global warming pollution.¹¹

Conventional internal combustion engine vehicles can be made much more efficient by applying fuel-saving techniques such as downsized turbocharged engines, enhanced aerodynamic designs, high-strength lightweight materials, six-speed and seven-speed transmissions and more climate-friendly air conditioning systems.¹² While a growing number of automakers are already using some of these techniques, applying the full range of these technologies will significantly increase fuel efficiency.

A 54.5 mpg standard will also help bring **more hybrid-electric vehicles** into the marketplace. These vehicles can significantly improve fuel efficiency and lower global warming pollution emissions by combining an efficient gasoline engine with an electric motor. Automakers are also selling **plug-in electric vehicles** that require no gasoline at all. Electric vehicles like the Chevrolet Volt and Nissan Leaf have rolled into dealerships this past year, and more models will follow if a strong standard is set in place.

Clean Cars Will Cut Oil Consumption

Because the majority of the oil consumed in the United States goes toward filling the gas tanks of our cars and light trucks, strong clean car standards represent the best and most immediate opportunity to lock in significant reductions in our oil use. If our fleet of vehicles met a 54.5 mpg standard, Americans would use roughly 16 billion fewer gallons of gasoline during the summer this year—**that nearly slashes our cars’ expected oil**

consumption in half.

While these reductions in oil use are significant in the scope of a summer, their effect over time would have truly profound benefits for our nation’s energy security, our environment, and our health. Finalizing a 54.5 mpg standard would, in effect, be the single biggest step we have ever taken to get off oil.

Top 10 States for Gasoline and Global Warming Emission Savings

State	Oil Savings Statewide (gallons)	Global Warming Pollution Reduced Statewide (metric tons CO2)
California	1,825,886,840	16,101,002
Texas	1,254,152,428	11,059,344
Florida	1,027,012,267	9,056,381
New York	744,731,931	6,567,182
North Carolina	704,002,912	6,208,026
Ohio	619,212,691	5,460,330
Illinois	612,336,087	5,399,691
Pennsylvania	603,464,419	5,321,459
Georgia	568,083,869	5,009,467
Michigan	542,869,655	4,787,123

Efficient Vehicles Will Save Consumers Money at the Gas Pump

America’s inefficient vehicle fleet combined with rising gasoline prices are costing consumers more money at the pump. Throughout the summer

travel season, our findings project that Americans will spend about \$132 billion at the gas pump. But with a 54.5 mpg standard, we could cut that figure nearly in half, alongside our cuts in oil consumption.

If the cars on the road today met a 54.5 mpg standard, Americans would save over \$64 billion at the gas pump this summer.

Individual families stand to save hundreds of dollars each. The average American family would save about 143 gallons of oil, amounting to \$551 in their pockets by the end of the summer. Not only could they afford a summer road trip to a favorite destination more

easily, but they could book a hotel and stick around for a couple of extra days with the money they have saved. In some of the states where families drive the most, they stand to gain hundreds more than that.

Top 10 States for Savings at the Pump per Household

<i>State</i>	<i>Oil Savings per Household (gallons)</i>	<i>Money Saved per Household</i>
Wyoming	265	\$1,010.89
Mississippi	204	\$750.45
Montana	197	\$751.37
North Dakota	193	\$726.16
North Carolina	188	\$708.67
Oklahoma	185	\$697.37
South Dakota	182	\$685.09
New Mexico	180	\$664.90
Vermont	178	\$703.97
Indiana	175	\$656.77

Moving Clean Cars into the Fast Lane

The foundation for strong federal clean vehicle standards comes from momentum built in states across the country. California began the movement toward cleaner cars in 2002 by passing a landmark clean cars law that targeted reductions in global warming pollution spewing from tailpipes. The District of Columbia and thirteen other states—Arizona, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New Mexico,

New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington—adopted California’s historic clean car standards.¹³

President Obama took action to build on these rulings in early 2010, calling for new federal light duty clean car standards for model years 2012-2016 that would increase fuel efficiency to 35.5 mpg. This represented the largest increase in fuel economy in more than 30 years and set the first ever federal tailpipe global warming pollution standards. While these standards will provide significant benefits for America’s economy and environment,

still greater improvements in fuel economy are necessary to truly get America off oil.

Just over a month after finalizing the 2012-2016 standards, President Obama announced that his administration would work with California to strengthen emissions and fuel efficiency standards for cars and light trucks through 2025.

In October 2010, the administration released a technical analysis that demonstrates that automakers can cost-effectively make clean cars the norm and not the exception to the rule. President Obama officially announced his proposal for a 54.5 mpg standard in November 2011, and the rule is scheduled to be finalized in the coming months. By making new cars and light trucks meet standards that achieve at least 54.5 mpg by 2025, the administration would be helping Americans save 71.4 million gallons of oil a day, leading to savings across the country of \$68 billion a year, even accounting for the costs of adopting new technologies.¹⁴

Strong clean cars standards enjoy overwhelming public support. More than 74 percent of likely voters polled in 2010

favor increasing fuel efficiency standards for cars and light trucks to as much as 60 mpg by 2025, making it clear that Americans are eager to reap the benefits of cleaner, more fuel efficient cars. Furthermore, Americans overwhelmingly support cutting pollution and saving oil even if it would increase retail prices. 83 percent of voters support standards to achieve 54.5 mpg when they are informed that fuel-saving technologies would pay for themselves with savings at the pump within four years.¹⁵

Conclusion

It is abundantly clear that we are spending too much money at the pump, and jeopardizing our environment as well as our families' finances through our dependence on oil. Setting the strongest possible standard requiring cars and trucks to emit less global warming pollution and use less gas would save drivers billions of dollars annually. The Obama administration should move clean cars into the fast lane by setting standards that require new cars and light trucks to average 54.5 miles per gallon by 2025.

Methodology

We obtained state-by-state data on total vehicle miles travelled (VMT) for June, July and August of 2011 from U.S. Department of Transportation, Federal Highway Administration, *Traffic Volume Trends*. We adjusted this total VMT figure to reflect the fact that, nationally, light-duty vehicles account for approximately 89.25% percent of miles driven, per U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2010, Table VM-1*, February 2012.

We calculated state-by-state gasoline consumption that would result from current fuel efficiency standards in comparison to a scenario in which light-duty vehicles had to meet a standard of 54.5 mpg, applying the on-road fuel efficiency of the current mixed fleet of light-duty vehicles as reported in the Energy Information Administration *Annual Energy Outlook 2012*, January 2012. We based the on-road fuel efficiency of vehicles adhering to a 54.5 mpg standard on an analysis performed by the Union of Concerned Scientists, "Translating Auto Standards into On-Road Fuel Efficiency," September 2011. The difference in the amount of fuel consumed under the two different fuel economy standards represents the savings that could be obtained from higher standards.

We estimated what this would mean in terms of reduced global warming pollution by converting gasoline savings

to an equivalent amount of carbon dioxide. We assume a gallon of gasoline to contain 19.4 pounds of carbon dioxide, per U.S. Environmental Protection Agency, *Emissions Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel*, February 2005. This figure does not account for non-combustion emissions from gasoline, such as those inherent in its extraction and delivery. This data does not account for some additional global warming pollution reductions that would occur beyond tailpipe emissions from the proposed 54.5 mpg standard, such as those resulting from credits for improved air conditioning systems.

We calculated state-by-state cost savings using current gasoline prices, on a regional or, where available, state level, from U.S. Department of Energy, Energy Information Administration, *Weekly Retail Gasoline and Diesel Prices*, 7 May 2012.

To calculate what this would mean for individual consumers, we assumed that every household in a state is responsible for an equal share of statewide VMT and estimated savings on a household basis. We calculated the number of households in every state using population figures and average household size data from U.S. Census Bureau, Population Estimates Program, *2010 Population Estimates*, 20 July 2010, available at factfinder.census.gov/home/en/official_estimates_2009.html. We divided our statewide gasoline cost savings by the number of households to derive a per-household savings figure.

Appendix - Gasoline and global warming emission savings with vehicles at 54.5 mpg standard, summer 2012.

State	Oil Savings Rank	Oil Savings per Household (gallons)	Oil Savings Statewide (gallons)	Global Warming Pollution Reduced Statewide (metric tons CO2)	Money Saved Statewide	Money Saved per Household
Alabama	12	166	312,524,657	2,755,899	\$1,151,653,361	\$611.35
Alaska	47	118	30,392,890	268,010	\$127,224,639	\$493.01
Arizona	36	135	320,802,050	2,828,891	\$1,342,877,383	\$564.00
Arkansas	16	161	184,479,750	1,626,776	\$679,807,879	\$592.64
California	29	145	1,825,886,840	16,101,002	\$7,776,452,051	\$618.28
Colorado	41	128	251,547,860	2,218,195	\$973,490,217	\$493.44
Connecticut	39	129	177,348,457	1,563,891	\$699,994,361	\$510.54
D.C.	51	73	19,420,038	171,249	\$75,524,528	\$283.17
Delaware	13	165	56,647,084	499,524	\$220,300,509	\$643.59
Florida	35	138	1,027,012,267	9,056,381	\$3,870,809,233	\$521.62
Georgia	18	158	568,083,869	5,009,467	\$2,141,676,186	\$597.30
Hawaii	48	115	52,168,802	460,034	\$218,378,604	\$479.60
Idaho	17	160	92,728,029	817,693	\$353,201,062	\$609.59
Illinois	42	127	612,336,087	5,399,691	\$2,302,996,023	\$476.12
Indiana	10	175	436,940,245	3,853,019	\$1,643,332,263	\$656.77
Iowa	25	148	180,298,605	1,589,906	\$678,103,054	\$555.11
Kansas	26	147	163,743,819	1,443,923	\$615,840,502	\$553.77
Kentucky	28	147	253,224,563	2,232,980	\$952,377,580	\$553.72
Louisiana	31	141	243,610,052	2,148,198	\$897,703,041	\$519.40
Maine	24	148	82,625,364	728,605	\$326,122,313	\$585.27
Maryland	27	147	317,491,093	2,799,694	\$1,234,722,861	\$572.58
Massachusetts	43	121	308,852,890	2,723,521	\$1,195,878,391	\$469.51
Michigan	33	140	542,869,655	4,787,123	\$2,041,732,774	\$527.24
Minnesota	19	158	329,779,838	2,908,059	\$1,216,228,044	\$582.70
Mississippi	2	204	227,225,058	2,003,712	\$837,324,338	\$750.45
Missouri	14	164	388,549,331	3,426,299	\$1,461,334,033	\$615.14
Montana	3	197	80,800,093	712,510	\$307,767,554	\$751.37
Nebraska	15	162	116,838,590	1,030,304	\$439,429,937	\$609.36
Nevada	49	109	109,304,040	963,863	\$457,546,710	\$454.70
New Hampshire	30	145	75,281,831	663,849	\$297,137,386	\$572.55
New Jersey	44	121	389,568,087	3,435,282	\$1,515,030,290	\$471.33
New Mexico	8	180	142,795,646	1,259,198	\$526,201,957	\$664.90
New York	50	102	744,731,931	6,567,182	\$3,019,887,982	\$412.68

North Carolina	5	188	704,002,912	6,208,026	\$2,654,090,977	\$708.67
North Dakota	4	193	54,291,210	478,750	\$204,189,242	\$726.16
Ohio	37	135	619,212,691	5,460,330	\$2,351,150,586	\$510.74
Oklahoma	6	185	270,798,105	2,387,947	\$1,018,471,674	\$697.37
Oregon	38	134	203,284,290	1,792,598	\$850,948,036	\$560.23
Pennsylvania	45	120	603,464,419	5,321,459	\$2,346,873,126	\$467.61
Rhode Island	46	120	49,706,808	438,324	\$196,192,771	\$474.35
South Carolina	21	149	268,887,938	2,371,103	\$1,013,707,524	\$562.80
South Dakota	7	182	58,705,820	517,679	\$220,792,589	\$685.09
Tennessee	20	157	391,605,599	3,453,249	\$1,472,828,658	\$590.65
Texas	32	141	1,254,152,428	11,059,344	\$4,625,314,156	\$518.36
Utah	11	172	151,221,608	1,333,500	\$576,003,106	\$656.27
Vermont	9	178	45,737,904	403,325	\$180,527,507	\$703.97
Virginia	22	149	454,556,236	4,008,360	\$1,713,677,011	\$560.75
Washington	40	129	336,911,131	2,970,944	\$1,396,496,638	\$533.00
West Virginia	34	140	106,778,373	941,591	\$402,554,468	\$527.02
Wisconsin	23	149	338,736,402	2,987,039	\$1,273,987,610	\$558.82
Wyoming	1	265	60,212,730	530,967	\$229,350,289	\$1,010.89
				0		
TOTAL		143	16,638,176,017	146,718,461	\$64,325,243,015	\$551.12

-
- ¹ National Oceanic and Atmospheric Administration National Climatic Data Center, State of the Climate National Overview, April 2012, available at <http://www.ncdc.noaa.gov/sotc/national/>.
- ² Rotkin-Ellman M, Wong KK, Solomon GM 2012. Seafood Contamination after the BP Gulf Oil Spill and Risks to Vulnerable Populations: A Critique of the FDA Risk Assessment. Environmental Health Perspective, downloaded from <http://dx.doi.org/10.1289/ehp.1103695>, 6 May 2012.
- ³ U.S. Department of Energy, Energy Information Administration *Annual Energy Outlook 2012*, Carbon Dioxide Emissions by Sector and Source, January 2012, available at <http://www.eia.gov/forecasts/aeo/er/>.
- ⁴ U.S. Department of Energy, Energy Information Administration, *Petroleum Navigator: U.S. Product Supplied of Crude Oil and Petroleum Products*, March 2012, available at <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mttupus2&f=a>.
- ⁵ U.S. Department of Energy, Energy Information Administration *Annual Energy Outlook 2012*, Transportation Sector Key Indicators and Delivered Energy Consumption, January 2012, available at <http://www.eia.gov/forecasts/aeo/er/>.
- ⁶ Environment America Research and Policy Center and Frontier Group, *Plug In Cars: Powering America Toward a Cleaner Future*, January 2010.
- ⁷ Natural Resources Defense Council, *Relieving Pain at the Pump*, April 2012, available at <http://www.nrdc.org/energy/relievingpainatthepump.asp>.
- ⁸ World Resources Institute, *Reducing Greenhouse Gas Emissions in the United States: Using Existing Federal Authorities and State Action*, July 2010.
- ⁹ See note 2.
- ¹⁰ See note 3.
- ¹¹ Union of Concerned Scientists and Natural Resources Defense Council, *The Road Ahead: The Benefits of Strong Fuel Efficiency and Pollution Standards for New Cars and Trucks*, September 2010.
- ¹² Ibid.
- ¹³ Environment America Research and Policy Center and Frontier Group, State Leadership and the National Clean Cars Program: Reducing Oil Dependence and Cutting Global Warming Pollution, March 2010.
- ¹⁴ See note 5.
- ¹⁵ The Mellman Group, *Poll: Voters Overwhelmingly Support Stricter Fuel Efficiency Standards*, 15 September 2010.