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Fighting Oil Addiction:
Ranking States' Gasoline Price Vulnerability and Solutions For Change

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EXECUTIVE SUMMARY

Energy policy and prices remain front and center in the American consciousness, particularly as national election consequences play out and the fragile economy continues to make many Americans feel more vulnerable. Americans continued to feel the painful pinch of gasoline prices in 2011—and they still do today. To curb America's perilous oil addiction, we continue to need effective government policies that will increase the availability and use of efficient vehicles and clean fuels, as well as promote smart growth and public transit.

This is the sixth edition of this report, updating the 2007, 2008, 2009, 2010, and 2011 research by David Gardiner & Associates (DGA) and the Natural Resources Defense Council (NRDC) identifying the states whose citizens feel the greatest economic pain from gasoline prices—and the states that are doing the most to break their addiction to oil.

Like the previous editions, this report again ranks U.S. states in two critical areas related to our nation's continuing addiction to oil. First, it calculates gasoline price vulnerability—the percentage of personal income spent on gasoline by the average driver in each state. Second, it ranks states based on their adoption of smart solutions to reduce their oil dependence—measures they are taking to strategically lessen their vulnerability and to bolster America's security. (See Methodology section for data sources and methods used.) The data yield some clear conclusions:

- Oil dependence affects all states, but some states' drivers are hit harder economically than others. Drivers in *every* state in 2011 spent a higher percentage of their income on gasoline than they did in 2010, and drivers in the most vulnerable states spent more than twice as large a percentage of their income on gasoline as drivers in the least vulnerable states.
- Drivers in most states (42) were hit even harder in 2011 than they were during the previous heights of vulnerability in 2008.
- While some states are pioneering solutions and many are taking some action, many states are still taking few, if any, of the steps listed in this report to reduce their oil dependence.

Which States' Drivers Were Most at Risk in 2011?

Research by DGA & NRDC shows that the 10 states whose drivers spent the largest percentage of their income on gasoline in 2011—or, in other words, faced the highest degree of gasoline price vulnerability—were:

1. Mississippi – 8.98% (also #1 in 2010, 2009, 2008, 2007, and 2006)
2. West Virginia – 8.10% (↑ from #16 in 2010)
3. South Carolina – 7.91% (↓ from #2 in 2010)
4. Kentucky – 7.89% (↓ from #3 in 2010)
5. Oklahoma – 7.56% (↑ from #6 in 2010)
6. Texas – 7.30% (↑ from #17 in 2010)
7. Georgia – 7.21% (↓ from #4 in 2010)
8. Iowa – 7.18% (↑ from #9 in 2010)
9. New Mexico – 7.13% (↑ from #10 in 2010)
10. Arkansas – 7.10% (↓ from #8 in 2010)

GASOLINE PRICE VULNERABILITY

NRDC's vulnerability ranking is based on the average percentage of income that states' drivers spend on gasoline. The differences are significant. In 2011, average drivers in the least vulnerable state—which for the sixth year in a row is Connecticut—spent about 3.5 percent of their income on gasoline. Average drivers in the most vulnerable state—which for the sixth year in a row is Mississippi—spent more than two-and-a-half times as large a percentage (almost 9 percent) of their income on gasoline.

Gasoline price vulnerability generally increased from 2006 through 2008. There was a striking reversal of that trend in 2009, due largely to much lower gas prices, with drivers in every state spending a lower percentage of their income on gasoline than in 2008. The original trend then reasserted itself, with drivers in all but four states being more vulnerable in 2010 than in 2009, though not quite as vulnerable as in 2008; drivers in 45 of the 50 states were still spending a lower percentage of their income on gasoline in 2010 than in 2008. In 2011, the original trend continued with a vengeance. Drivers in *every* state spent a higher percentage of their income on gasoline in 2011 than they did in 2010, and drivers in only eight states still spent a lower percentage than in 2008.

As the economy slowly recovers, drivers clearly remain quite vulnerable—and citizens in the high-ranking states are feeling the pinch more.

STATE ACTION ON OIL DEPENDENCE: THE BEST AND THE WORST

Although some states are adopting strong measures to reduce their oil dependence, too many others are still taking little or no action.

The solutions rankings in this report are based on the range of key actions that states can take to reduce oil dependence, with particular focus on policies that can have substantial impact and be replicated by other states. This year's report takes a closer look at some of the categories used in the past and what actions deserve credit.

Research by NRDC and DGA shows that the 10 states doing the *most* to wean themselves from oil are:

1. **California**
2. **Oregon**
3. **Washington**
4. **Massachusetts**
5. **New York**
6. **Connecticut**
7. **Maine**
8. **Maryland**
9. **Rhode Island**
10. **Vermont**

In contrast, the 10 states doing the *least* to reduce their oil dependence are:

50. **Nebraska**
49. **Alaska**
48. **Mississippi**
47. **Idaho**
46. **North Dakota**
45. **Arkansas**
44. **Indiana**
43. **South Dakota**
42. **Wyoming**
41. **Kansas**

The failure of these 10 states—and many others—to take meaningful action to reduce oil dependence exacerbates the national security, environmental, and economic harms associated with our current transportation habits. These and other states need to be drivers of change.

THE BENEFITS OF REDUCING OIL DEPENDENCE

Especially with the struggling economy, persistently high unemployment, and relatively high gasoline and diesel prices, reducing oil dependence can yield significant benefits. These can include lowering the economic vulnerability that many residents face and creating new income from the sale of low-carbon fuels and efficient vehicles. Dollars circulate domestically instead of undermining national security by flowing to sources of oil that are politically unstable or controlled by unfriendly national governments. In addition, reduced oil consumption decreases both air pollution and the carbon pollution that causes global climate change.

STATE POLICIES FOR REDUCING OIL DEPENDENCE

Although the Obama Administration has taken some strong actions on energy and climate policy, states continue to be critical players in creating less oil-intensive transportation habits. State strategies include:

- **Clean and efficient vehicles and clean fuels.** Twenty-seven states are taking action to promote greater efficiency and greater use of alternative fuels in state fleets. A few states have or are developing a low-carbon fuel standard (LCFS), which would reduce the greenhouse gas intensity of motor vehicle fuel, and several states have signed a memorandum of understanding to explore a regional LCFS in the Northeast and Mid-Atlantic. Meeting long-term climate and reduced oil dependence goals will also likely require the deployment of zero-emission vehicles (ZEVs), including plug-in electric and hydrogen fuel cell vehicles. Thirty states are promoting deployment of zero-emission advanced vehicle technologies and their associated infrastructure.

- **Transportation system efficiency.** An area where states can play a particularly influential role in reducing oil dependence is promoting transportation system efficiency—for example, promoting alternatives to driving and reducing vehicle-miles traveled (VMT), and sprawl. Relevant strategies focus on issues such as transportation, land use, zoning, building codes, and, to a lesser extent, idling. For example:
  - Nineteen states are taking action to encourage cars already on the road to use less gasoline by placing restrictions on idling.
  - Only five states have codified or official targets to reduce VMT or transportation-related petroleum consumption.
  - Thirteen states have strong policies that provide continued progress on smart growth issues.

  Public investment can also be a critical strategy for states seeking to reduce oil dependence, and in 2011, New York, Maryland, Massachusetts, Minnesota, and Connecticut led the way in prioritizing the funding of public transit through the allocation of state and federal funds.

States that adopt cutting-edge plans to reduce oil dependence help make the nation more secure, protect drivers' wallets, and enhance global environmental health. These states' policies can serve as examples for the many states that have thus far taken little or no such action—and lead the way for national policies as well.

FEDERAL RECOMMENDATIONS FOR REDUCING GASOLINE PRICE VULNERABILITY

The Obama Administration must execute effective energy and transportation policies that complement and support the actions of leading states. The administration has already taken historic steps this year and in 2010 by setting dramatically higher fuel-efficiency performance standards for our car and truck fleets. Specifically, this summer the administration announced that new vehicles must on average achieve about twice their current efficiency level by 2025, a standard of 54.5 miles per gallon. Analysis shows that this standard is not only the single biggest leap the United States has ever taken to reduce oil dependence and cut global warming pollution, but also that it will slash oil imports by one-third, save drivers about $1.7 trillion dollars at the pump, and create nearly 570,000 jobs as industry innovates and retools to clear the new performance bar.[1]

With the wind at our back, we can make even more progress by:

- **Strengthening efforts to lower first-cost barriers for new adopters of advanced vehicle technology and alternative fuels**, including purchase incentives and support for research and development of advanced vehicle technology.
- **Implementing the new national transportation law effectively.** Congress labored for nearly three years to pass a two-year transportation bill named Moving Ahead for Progress in the 21st Century (MAP-21), which took effect on October 1, 2012. While the bill makes changes that could exacerbate the nation's oil addiction, it also has provisions that could prove useful if implemented with an eye to saving oil, including requirements for more accountability and transparency for the massive highway accounts in the transportation program, requirements to establish performance measures at national, state, and metropolitan levels, and a dramatically increased financing program called America Fast Forward.

GASOLINE PRICE VULNERABILITY RANKINGS: WHO IS HIT HARDEST?

America's economic recovery continues to be tepid. Gasoline prices have been volatile, as has the Middle East. In addition, a shocking number of extreme weather events around the globe are raising concerns about the impacts of climate change. Given all of these factors, oil dependence and its consequences continue to be highly salient issues.

America's dependence on oil is problematic in several ways, including the following:

- The United States uses several times more oil than it possesses. The United States produces about 11.6 percent of total world petroleum supplies and has less than 2 percent of the world's proved oil reserves—but is responsible for about 21.6 percent of the world's petroleum consumption.[2] We currently import about 60 percent of our crude oil supply.[3]
- Our dependence on oil threatens our national economy, particularly since about 93.5 percent of our transportation system is fueled by oil.[4]
- Oil consumption is a leading contributor to the carbon dioxide pollution that causes global climate change. In the United States, the oil-based transportation system is responsible for roughly one-third of carbon dioxide pollution.[5]

Our national addiction to oil affects every American in every state. However, the rankings in table 1 (mapped in figure 1) clearly show that oil dependence hits the drivers of certain states harder than it does others. These rankings reflect the proportion of the average driver's income spent on gasoline in each state in 2011.[6]

Figure 1: Map of U.S. Oil Vulnerability, 2011

Percent of Income Spent on Gasoline by the Average Driver, 2011

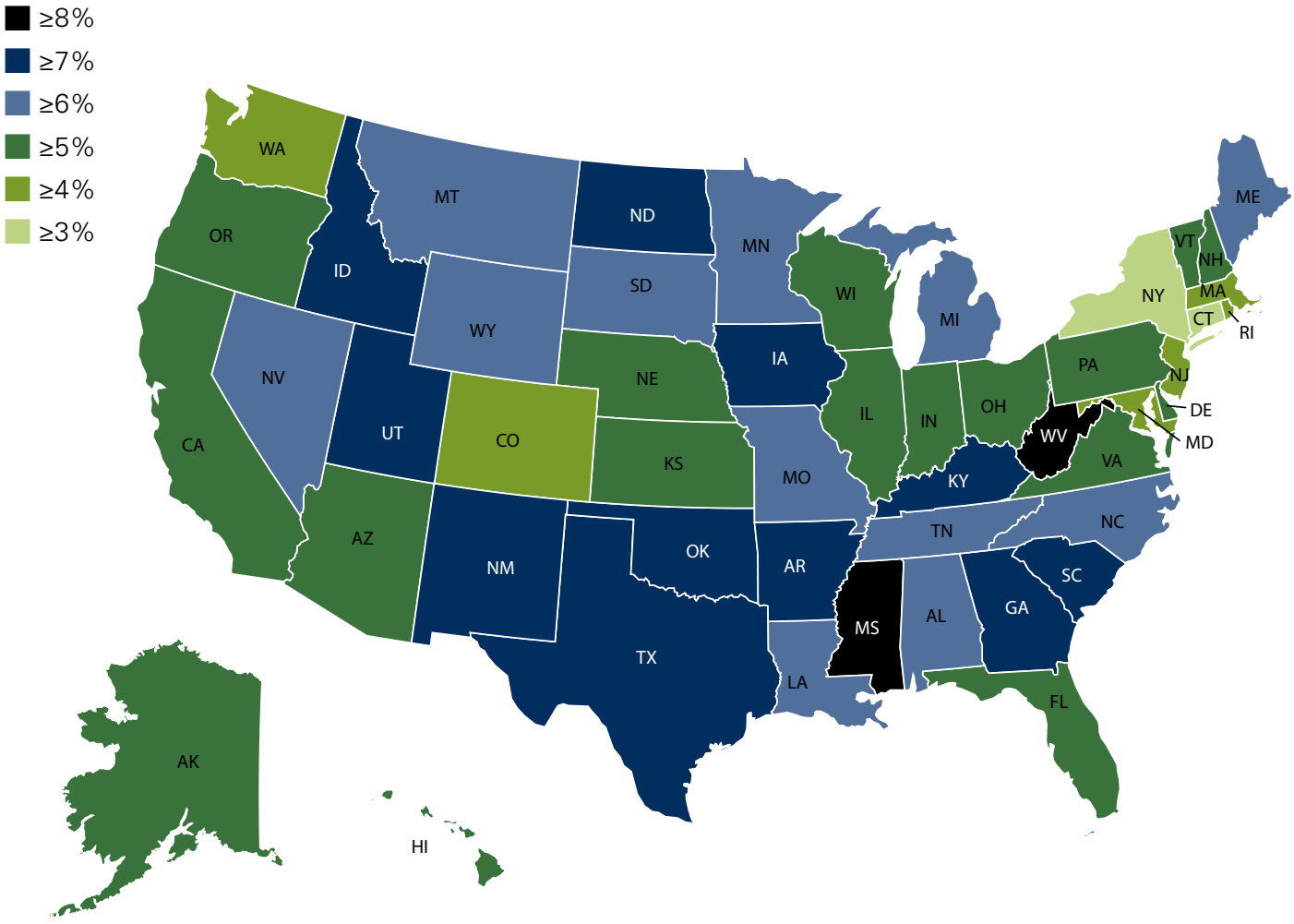


Table 1: Ranking of the Most Vulnerable States, 2011					
Rank	State	Percent of Income (and $ Amount) Spent on Gasoline by the Average Driver, 2011	Rank	State	Percent of Income (and $ Amount) Spent on Gasoline by the Average Driver, 2011
1	Mississippi	8.98% ($2,889)	26	Ohio	5.96% ($2,252)
2	West Virginia	8.10% ($2,715)	27	Arizona	5.90% ($2,118)
3	South Carolina	7.91% ($2,664)	28	Indiana	5.78% ($2,056)
4	Kentucky	7.89% ($2,657)	29	Vermont	5.76% ($2,408)
5	Oklahoma	7.56% ($2,818)	30	Wisconsin	5.70% ($2,283)
6	Texas	7.30% ($2,889)	31	Delaware	5.65% ($2,354)
7	Georgia	7.21% ($2,602)	32	Nebraska	5.58% ($2,322)
8	Iowa	7.18% ($2,907)	33	New Hampshire	5.54% ($2,536)
9	New Mexico	7.13% ($2,466)	34	Virginia	5.50% ($2,528)
10	Arkansas	7.10% ($2,416)	35	Oregon	5.45% ($2,066)
11	Idaho	7.06% ($2,354)	36	California	5.44% ($2,418)
12	North Dakota	7.05% ($3,227)	37	Kansas	5.39% ($2,181)
13	Utah	7.02% ($2,373)	38	Florida	5.36% ($2,119)
14	Tennessee	6.91% ($2,523)	39	Alaska	5.27% ($2,398)
15	Alabama	6.89% ($2,389)	40	Illinois	5.24% ($2,314)
16	Montana	6.86% ($2,511)	41	Pennsylvania	5.08% ($2,158)
17	Louisiana	6.80% ($2,622)	42	Maryland	4.96% ($2,534)
18	Missouri	6.74% ($2,577)	43	Hawaii	4.86% ($2,094)
19	South Dakota	6.72% ($2,795)	44	Colorado	4.64% ($2,044)
20	Michigan	6.68% ($2,440)	45	Washington	4.63% ($2,049)
21	North Carolina	6.68% ($2,415)	46	Massachusetts	4.62% ($2,480)
22	Maine	6.64% ($2,521)	47	Rhode Island	4.38% ($1,929)
23	Wyoming	6.32% ($2,991)	48	New Jersey	4.31% ($2,290)
24	Minnesota	6.30% ($2,816)	49	New York	3.83% ($1,937)
25	Nevada	6.23% ($2,379)	50	Connecticut	3.51% ($1,995)

The most vulnerable state—Mississippi—and least vulnerable state—Connecticut—are again unchanged from prior years. (Appendix A contains the state vulnerability rankings for the past six years.) Citizens in Mississippi spent almost 9 percent of their income on gasoline, while citizens in Connecticut spent approximately 3.5 percent of theirs. By far, the state with the largest increase in vulnerability from 2010 to 2011 was West Virginia (see table 2), where the percentage of income spent on gasoline increased by about 2.8 percentage points (and its vulnerability ranking rose 14 spots to number 2 on the list).

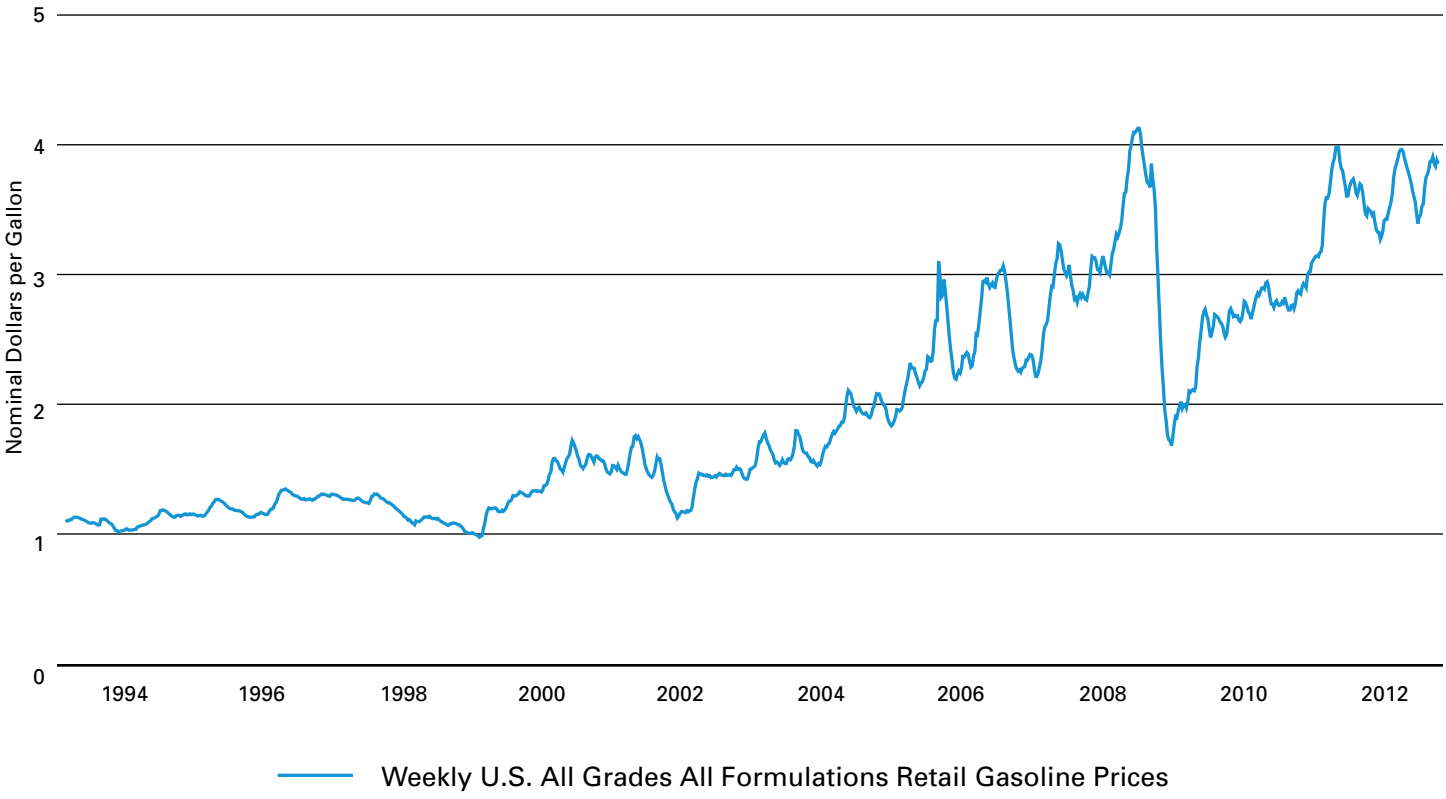
As table 2 makes clear, gasoline price vulnerability generally increased from 2006 through 2008. There was a striking reversal of that trend in 2009 due largely to much lower gas prices that year, with drivers in every state spending a lower percentage of their income on gasoline in 2009 than in 2008, and with drivers in all but five states spending a lower percentage of their income on gasoline in 2009 than in 2006. In 2010, the original trend reasserted itself, with drivers in all but four states—Kansas, Louisiana, Montana, and Rhode Island—more vulnerable in 2010 than in 2009, though not quite as vulnerable as in 2008 and the two previous years.

And 2011 continued the original trend with a vengeance. Drivers in *every* state were more vulnerable in 2011 than in 2010, and in all but eight states—Hawaii, Indiana, Kansas, Louisiana, Mississippi, Montana, New Jersey, and Rhode Island—drivers were more vulnerable in 2011 than they were even in 2008. The national average vulnerability reflects this trend, with the 2011 average of 6.11 percent surpassing the previous 2008 high of 5.58 percent.

One reason for the marked decreases in all states from 2008 to 2009 was likely that gas prices spiked in 2008 (U.S. average $3.30), but in 2009 dropped below anything seen in the previous few years (U.S. average $2.41). In 2010, gas prices began to climb again, and as shown in figure 2, were basically back at 2008 levels in 2010 and 2011.

Table 2: Percent of Income Spent on Gasoline by the Average Driver (2006 to 2011)						
STATE	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
U.S. AVG	**4.54%**	**5.39%**	**5.58%**	**4.08%**	**4.81%**	**6.11%**
MS	6.87%	7.87%	9.14%	6.35%	7.23%	8.98%
WV	5.17%	6.17%	5.62%	4.20%	5.31%	8.10%
SC	6.03%	7.21%	7.59%	5.27%	6.31%	7.91%
KY	5.77%	6.69%	6.84%	5.03%	6.13%	7.89%
OK	5.47%	6.28%	7.50%	5.28%	5.80%	7.56%
TX	5.16%	5.85%	6.80%	5.09%	5.31%	7.30%
GA	5.67%	7.08%	6.71%	4.66%	5.81%	7.21%
IA	5.04%	6.20%	5.25%	4.06%	5.60%	7.18%
NM	5.66%	6.55%	6.79%	4.38%	5.48%	7.13%
AR	5.38%	6.28%	6.68%	4.69%	5.67%	7.10%
ID	4.64%	5.69%	6.20%	4.74%	5.81%	7.06%
ND	5.09%	5.81%	5.64%	4.42%	5.71%	7.05%
UT	5.04%	5.81%	6.61%	4.76%	5.19%	7.02%
TN	4.85%	5.82%	6.25%	4.68%	5.35%	6.91%
AL	5.03%	6.01%	5.68%	3.87%	5.47%	6.89%
MT	4.84%	5.80%	8.07%	6.08%	5.48%	6.86%
LA	5.34%	6.83%	7.00%	5.45%	5.07%	6.80%
MO	5.02%	6.00%	5.94%	4.15%	5.36%	6.74%
SD	4.70%	5.72%	5.93%	4.48%	5.26%	6.72%
MI	4.53%	5.78%	5.58%	4.24%	5.13%	6.68%
NC	4.92%	5.70%	5.93%	4.24%	5.34%	6.68%
ME	5.15%	6.09%	6.36%	4.59%	5.28%	6.64%
WY	4.46%	5.21%	5.36%	4.34%	4.80%	6.32%
MN	5.00%	5.79%	5.50%	3.88%	5.15%	6.30%
NV	4.57%	5.37%	4.66%	3.69%	5.11%	6.23%
OH	4.54%	5.41%	5.50%	3.96%	4.78%	5.96%
AZ	5.28%	6.06%	5.65%	3.65%	4.68%	5.90%
IN	5.04%	6.46%	6.44%	3.74%	4.56%	5.78%
VT	4.17%	5.06%	4.66%	3.91%	4.64%	5.76%
WI	4.30%	4.95%	5.18%	4.02%	4.61%	5.70%
DE	4.25%	4.89%	5.37%	3.52%	4.41%	5.65%
NE	3.95%	4.64%	4.69%	3.45%	4.39%	5.58%
NH	4.04%	4.65%	4.21%	3.10%	4.34%	5.54%
VA	4.35%	5.13%	5.14%	3.78%	4.45%	5.50%
OR	4.06%	4.83%	4.91%	3.71%	4.30%	5.45%
CA	4.31%	5.37%	5.16%	4.06%	4.65%	5.44%
KS	3.65%	4.85%	5.86%	4.21%	4.03%	5.39%
FL	3.74%	4.63%	4.65%	3.49%	4.21%	5.36%
AK	3.55%	3.87%	4.33%	3.45%	4.37%	5.27%
IL	3.84%	4.80%	4.78%	3.40%	4.06%	5.24%
PA	3.57%	4.41%	4.56%	3.40%	4.03%	5.08%
MD	3.83%	4.52%	4.19%	2.99%	3.97%	4.96%
HI	3.98%	4.58%	5.19%	3.96%	4.11%	4.86%
CO	3.77%	4.47%	4.29%	3.11%	3.58%	4.64%
WA	3.77%	4.26%	4.43%	3.41%	3.66%	4.63%
MA	3.11%	3.50%	3.66%	2.63%	3.24%	4.62%
RI	3.25%	3.97%	5.40%	3.95%	3.43%	4.38%
NJ	3.53%	4.10%	4.49%	3.28%	3.73%	4.31%
NY	2.79%	3.28%	3.44%	2.62%	3.13%	3.83%
CT	2.78%	3.17%	3.24%	2.56%	2.83%	3.51%

Figure 2: Weekly U.S. All Grades All Formulations Retail Gasoline Prices



Source: Energy Information Administration, *Weekly U.S. All Grades All Formulations Retail Gasoline Prices,* release date September 4, 2012, http://www.eia.gov/dnav/pet/hist/LeafHandler. ashx?n=pet&s=emm_epm0_pte_nus_dpg&f=w.

BREAKING OUR ADDICTION: SOLUTIONS TO OIL DEPENDENCE

Identifying the problem of oil addiction is only the beginning; the next step is to adopt workable solutions.

Some who frame the problem solely as one of energy security and reducing dependence on foreign oil propose that the United States merely drill for more oil domestically. Apart from the fact that this "solution" would exacerbate the problem of climate change, it also ignores several key points. Here are two:

- First, no country on Earth has had its oil resources more thoroughly explored and developed than the United States; it is home to more than half a million producing oil wells—about 60 percent of all those in the world, more than 35 times the number in the Middle East, more than 14 times as many as the Organization of the Petroleum Exporting Countries (OPEC), and more than all the other countries in the world put together.[7] And, as noted earlier, the United States produces about 11.6 percent of total world petroleum supplies and has less than 2 percent of the world's proved oil reserves—yet is responsible for about 21.6 percent of the world's petroleum consumption.[8]
- Second, oil is a global commodity. America's oil reserves are not big enough to ever really affect the price of oil by increasing production. Swings in oil prices will continue to affect the U.S. economy as long as our economy is so reliant on oil. Looking to Canada shows how beholden we are to a global marketplace—despite Canada producing more than 1.5 times the amount of oil it consumes, Canadian prices at the pump track the global price of oil just as American prices do.[9]

The simple truth is that we must reduce our dependence on oil. By promoting cleaner and more efficient vehicles, clean fuels, smart growth, and public transit, state governments can play an important role in putting an end to an unhealthy addiction that threatens our wallets, coastlines, national security, economy, and environment.

STATE SOLUTIONS RANKINGS: WHO IS GETTING IT RIGHT?

The solutions rankings in this report are based on the range of key strategic actions that states can take to reduce oil dependence, with particular focus on policies that can have substantial impact, can be replicated by other states, and are a smart use of limited state budgets. The rankings also take into account the level of funding priority being given to public transit as compared to highways. As table 3 shows, some states have already adopted significant measures to promote clean and efficient vehicles, clean fuels, and transportation system efficiency, but far too many states are failing to take adequate action.

This year's report takes a closer look at some of the categories used in the past and at what actions deserve credit. The categories in this year's report have thus been slightly changed or refined from prior years:

- Once again, states are not receiving credit for having vehicle greenhouse gas emission standards. This category was briefly resurrected in last year's report. Given the continued importance of state leadership on vehicle fuel efficiency, such standards remain important for advancing good policy. However, since the federal standards for 2017 to 2025 have now been issued, this category has again been removed.
- The "State Fleet Efficiency" category has been more explicitly expanded to account for states that are actively moving their fleets away from oil dependence, through both fleet efficiency and alternative vehicle acquisition requirements.
- The category considering incentives for electric vehicles (EVs) and charging infrastructure has been made both broader and more demanding, with a focus on states with policies promoting deployment of advanced vehicle technologies, which at this time largely consist of zero emission vehicles (ZEVs)—electric and hydrogen fuel cell vehicles—and the associated infrastructure. The credit awarded to the category have also been increased to a full point. States with a ZEV mandate receive full credit. States receive partial credit if they offer consumer incentives for ZEVs or have state EV councils that have created written plans with concrete recommendations.
- The overarching "Clean Vehicles" and "Clean Fuels" categories have been merged, reflecting the increasingly hazy line between promoting one versus the other.
- The telecommuting category has been removed. While the technical potential remains significant—the current 2.9 million telecommuters in the United States save about 390 million gallons of gasoline and prevent the release of about 3.6 million tons of greenhouse gases each year[10]—it is unclear whether the fuel savings from the existing state-level programs will be meaningful.
- The criteria for awarding credit for smart growth policies were strengthened to require some level of confidence that there will be real progress. For example, there will be a strong state role or alignment of state funding to ensure local or regional plans meet smart growth criteria (particularly relating to land use, fuel consumption, vehicle miles traveled, or sprawl), or enforced and restrictive mandatory growth boundaries.

There have been changes such as these to the criteria occasionally over the past several years, reflecting an effort to be as fair and accurate as possible while keeping the focus on the most effective policies and investments states can make to reduce oil dependence.

All changes in rank have many sources: states enacting new policies; states repealing policies or allowing them to expire; states increasing or decreasing transit investment levels; and categories being added, removed, refined, or weighted differently in this report. Despite these changes, however, some things have stayed constant. The leaders remain the leaders—California, Connecticut, New York, Oregon, and Washington have been in the top 10 each of the past six years. And the laggards remain the laggards—with Wyoming being the only state to have been in the bottom 10 all six years, though frequently accompanied by states such as South Dakota, Mississippi, Nebraska, Alaska, and Arkansas. (Appendix B contains all solutions rankings for the past six years.)

Table 3: Solutions Rankings

		Clean Vehicles and Fuels			Transportation System Efficiency			
Rank	States	State Fleet Requirements	Low-Carbon Fuel Standard	Advanced Vehicle Technology Policy	Idling Restrictions	Vehicle Miles Traveled / Petroleum Reduction Targets	Smart Growth Policies	Transit Spending Prioritization Ranking (with percentage transit vs. highway, and dollars spent on transit per urban resident)[a]
1	California	◖	●●	●	◖	●	●	13 (9.86%) ($50.68)
2	Oregon	◖	●●	●	◖	●	●	25 (2.44%) ($11.23)
3	Washington	◖	●●	◖		●	●	35 (1.53%) ($10.58)
4	Massachusetts	◖	●	●	◖	●		3 (37.63%) ($179.80)
5	New York	◖	◖	●	◖		●	1 (54.17%) ($235.65)
6	Connecticut	◖	◖	●	◖		●	5 (32.71%) ($164.69)
7	Maine	◖		●	◖	●	●	28 (2.02%) ($26.33)
8	Maryland		◖	●	◖		●	2 (38.95%) ($201.22)
9	Rhode Island	◔	◖	●	◖		●	6 (17.99%) ($82.07)
10	Vermont	◖	◖	●			●	19 (5.52%) ($93.03)
11	Delaware	◖	◖		◖		●	8 (14.73%) ($175.58)
12	New Jersey			●	◖		●	9 (14.55%) ($77.76)
13	Hawaii	◖		◖	◖		●	46 (0.76%) ($2.85)
14	Tennessee	◖		◖			●	22 (3.15%) ($14.41)
15	Pennsylvania		◖	◖	◖			7 (15.80%) ($114.43)
16	Minnesota	◖		◖				4 (34.71%) ($217.42)
17	North Carolina	◖		◖	◖			24 (2.96%) ($17.04)
18	Texas	◖		◖	◖			37 (1.32%) ($6.12)
19	Virginia	◔		◖	◖			12 (10.65%) ($62.94)
20	Illinois	◖		◖				11 (11.65%) ($55.97)
21	South Carolina			◖	◖			31 (1.79%) ($8.55)
22	Arizona	◖		◖				33 (1.64%) ($8.04)
23	West Virginia			◖	◖			40 (1.25%) ($17.98)
24	New Hampshire		◖		◖			41 (1.07%) ($9.39)
25	Louisiana	◔		◖				49 (0.46%) ($3.86)

●● = 2 pt ● = 1 pt ◖ = ½ pt ◔ = ¼ pt

Table 3: Solutions Rankings

		Clean Vehicles and Fuels			Transportation System Efficiency			
Rank	States	State Fleet Requirements	Low-Carbon Fuel Standard	Advanced Vehicle Technology Policy	Idling Restrictions	Vehicle Miles Traveled / Petroleum Reduction Targets	Smart Growth Policies	Transit Spending Prioritization Ranking (with percentage transit vs. highway, and dollars spent on transit per urban resident)[a]
26	Colorado			◖				10 (12.82%) ($57.69)
27	Michigan			◖				15 (8.13%) ($35.78)
28	New Mexico	◖						16 (7.81%) ($51.77)
29	Wisconsin	◖						17 (6.09%) ($38.72)
30	Florida	◖						18 (5.71%) ($25.48)
31	Georgia			◖				20 (5.29%) ($24.62)
32	Kentucky	◖						21 (3.80%) ($36.92)
33	Iowa			◖				27 (2.19%) ($19.15)
34	Montana			◖				29 (1.99%) ($25.61)
35	Missouri	◖						30 (1.95%) ($12.62)
36	Oklahoma			◖				38 (1.30%) ($9.46)
37	Alabama	◖						44 (0.89%) ($5.98)
38	Nevada				◖			45 (0.79%) ($3.25)
39	Ohio	◖						47 (0.70%) ($3.54)
40	Utah			◖				50 (0.26%) ($1.87)
41	Kansas	◔						36 (1.37%) ($9.40)
42	Wyoming							14 (9.03%) ($147.63)
43	South Dakota							23 (3.10%) ($33.26)
44	Indiana							26 (2.31%) ($15.44)
45	Arkansas							32 (1.76%) ($12.52)
46	North Dakota							34 (1.57%) ($19.54)
47	Idaho							39 (1.25%) ($10.02)
48	Mississippi							42 (1.04%) ($9.42)
49	Alaska							43 (0.96%) ($16.49)
50	Nebraska							48 (0.60%) ($6.26)

[a] Ranking based on the ratio of 3-year average transit spending per urban resident to 3-year average highway spending per urban resident.

●● = 2 pt ● = 1 pt ◖ = ½ pt ◔ = ¼ pt

EFFICIENT VEHICLES AND CLEAN FUELS

The federal government has finally joined a large set of states in the driver's seat in terms of requiring development of cleaner, more fuel-efficient vehicles. In December 2011, for instance, the Environmental Protection Agency and the National Highway Traffic Safety Administration jointly proposed strong new greenhouse gas and fuel economy standards for light-duty vehicles for model years 2017 to 2025, building on the 2012 to 2016 model year standards;[11] these standards were finalized in August 2012.[12] States still play a key role, however, in enacting policies to promote clean and efficient vehicles and clean fuels. While many of the oil alternatives for powering vehicles have the potential to be good for both energy security and climate goals, not all do. West Virginia, for example, provides an investment tax credit for coal-based synthetic fuels, which are incredibly carbon intensive.[13] And debates continue with respect to the climate benefits of some biofuels.

Accordingly, credit here was given to states with strong requirements to promote greater efficiency and greater use of alternative fuels in state fleets, meaningful efforts to promote low-carbon fuels, and strategies to promote deployment of advanced zero-emission vehicle technologies (electric and hydrogen fuel cell vehicles and their associated infrastructure).

State Fleet Requirements

Twenty-seven states are taking action to promote greater effficiency and use of alternative fuels in state fleets. These states have policies mandating stronger fuel efficiency, petroleum reductions, and/or alternative fuel vehicle acquisitions for the state fleet. While state fleets are usually fairly small relative to the overall number of vehicles in a state, these state standards represent a positive step and an important avenue for increasing the visibility of and drivers' experience with high-efficiency and alternative fuel vehicles.

For states to get credit, their policies must have explicit targets for fleet efficiency, petroleum reductions, or the percentage of alternative vehicles acquired or present in the fleet. The policies also have to be leading what is otherwise happening in federal policy and in the private fleet (for example, federal Corporate Average Fuel Economy (CAFE) standards, EPAct 1992 requirements for alternative fuel vehicle acquisition by state fleets). For example:

- Alabama requires an annual increase in average state fleet fuel economy of 4 percent for light-duty vehicles, 3 percent for medium-duty vehicles, and 2 percent for heavy-duty vehicles.[14]
- Delaware requires state agencies to reduce petroleum consumption from state vehicle use by 25 percent.[15]
- Ohio requires *all* new state agency vehicles to be capable of using an alternative fuel *and* to actually use such fuel if reasonably available at a reasonable price.[16]
- Montana, in contrast, did not get credit because its requirements only say that state vehicles must meet or exceed federal CAFE standards.[17]

States receive partial credit if they have a real aim of reducing petroleum use (or increasing alternative fuel use) and specify the means to get there, but specific targets are either absent or weak, or the goals can be met with just reformulated gasoline, flex fuel vehicles (with no requirement to actually use alternative fuels), or low-efficiency vehicles. Virginia, for instance, has a statute directing establishment of a plan to replace state vehicles with ones that run on natural gas, electricity, or other alternative fuels, and via executive order has released a public-private partnership solicitation to expand provision of alternative fuel vehicles in the Commonwealth's fleet—but has no specific target it aims to achieve.[18]

Several states have requirements that state agencies issue reports describing the progress made toward achieving their fuel efficiency or vehicle acquisition targets. For instance, New York and Missouri have each issued public reports indicating that efforts to meet the state targets are having real effect.[19] Such public reports are laudable and should be implemented by all states to promote transparency in their efforts to reduce their fleets' oil dependence.

In addition, it is important to note that while improved fuel efficiency directly correlates with reduced greenhouse gas emissions, the same is not necessarily true for all alternative fuels. States should conduct lifecycle greenhouse gas analyses and focus their efforts on incorporating alternative fuels that reduce greenhouse gas emissions.

Low-Carbon Fuel Standard

California has a low-carbon fuel standard (LCFS), Oregon and Washington are developing their own, and the Northeast states are exploring a regional one. To get full credit, states must have a LCFS in place or under active development. Only three states—California, Oregon, and Washington—get full credit:

- In 2007, Governor Arnold Schwarzenegger signed an executive order calling for the adoption of a state LCFS that seeks to reduce the global warming pollution "intensity" of motor vehicle fuel sold in California by 10 percent by 2020.[20] The California Air Resources Board (CARB) approved the state LCFS in 2009, and it went into effect in 2010; though the standard is being challenged in court, California is moving forward with it while the case is on appeal.[21]
- In July 2009, Oregon Governor Ted Kulongoski signed HB 2186 into law authorizing the Oregon Environmental Quality Commission to adopt a state LCFS with the same targets as California, and rule development is under way.[22]
- In Washington, a 2009 executive order from Governor Christine Gregoire directed the Washington Department of Ecology to evaluate a state LCFS; in February 2011, the department issued its final report analyzing state LCFS scenarios.[23]

Both Oregon's and Washington's LCFSs are basically on hold due to uncertainty about the fate of California's LCFS in the courts. Oregon's LCFS is also on hold due to the state legislature's inclusion of a 2015 sunset date in the LCFS bill.[24]

In the Northeast, Massachusetts Governor Deval Patrick and state congressional leadership announced their support in 2008 for adopting a similar state LCFS, and the Clean Energy Biofuels Act directed consideration of one. In addition, Massachusetts has spearheaded the effort to get the other Northeast and Mid-Atlantic states to commit to creating a regional LCFS.[25] For its leadership, Massachusetts receives half credit.

The other Northeast and Mid-Atlantic states get quarter-credit for signing on to the December 2009 memorandum of understanding to develop a regional LCFS framework that could then be adapted into a model rule that each of the states could adopt.[26] (In September 2011, the Northeast States for Coordinated Air Use Management unveiled the final results of its economic analysis of a potential Northeast/Mid-Atlantic clean fuels standard.[27]) New Hampshire enacted a law in June prohibiting the state from participating in any LCFS program without legislative approval, a process that would have to be followed anyway.[28] However, both New Jersey and Maine have indicated that they would not implement or adopt state LCFSs, so those two states do not get credit in this category.[29]

Promoting low-carbon fuels supports oil alternatives because sustainably produced biofuels (especially those derived from plant cellulose using new techniques), plug-in hybrid-electric vehicles, and the like can yield substantial reductions in carbon pollution and petroleum use, dual benefits not gained by states (for example, Hawaii) that have "alternative fuel standards" or similar measures that do not account for the carbon content of fuels. California estimates that achieving its 10 percent reduction goal will reduce motor vehicle petroleum consumption by about 20 percent.[30] Such a big effect makes the LCFS one of the most important policies a state can adopt to reduce oil dependence.

Advanced Vehicle Technology Policies

Thirty states have policies promoting deployment of advanced vehicle technologies—primarily electric vehicles (EVs) and their associated infrastructure, but also hydrogen fuel cell vehicles. A vehicle charged with electricity is more fuel-efficient and cleaner than an average conventional gasoline vehicle, even if owned and driven by the 18 percent of Americans in communities powered by high-carbon-pollution-intensity electricity grids.[31] For states to get full credit, they must have adopted California's ZEV mandate. The program, introduced by California in 1990, requires large vehicle manufacturers to have a designated percentage of vehicles produced for sale in California be ZEVs. The program has changed and evolved over the years, and in 2009, CARB shifted the ZEV program to focus not only on criteria air pollutants but also on greenhouse gases—and directed CARB staff to prepare a ZEV electric infrastructure plan for the state.[32] Under Section 177 of the federal Clean Air Act, states can adopt either federal or California new motor vehicle emission standards,[33] though states that adopt the California "clean car" standards do not have to adopt the ZEV mandate.[34] States that have adopted California's ZEV mandate similarly require large vehicle manufacturers to have a designated percentage of vehicles produced for sale in California be ZEVs. Those states are: California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont.

States receive partial credit if they have a consumer incentive for EVs or advanced vehicles, or have a state council or taskforce that has produced a comprehensive written plan with concrete recommendations for promoting advanced vehicle technologies in the private vehicle fleet. For example, Georgia provides an individual tax credit for ZEVs for up to 20 percent of the vehicle cost (up to $5,000), as well as a business tax credit for 10 percent of the cost to purchase or lease EV supply equipment (up to $2,500).[35] Illinois not only has a rebate program for purchases of vehicles fueled by electricity or hydrogen (among other fuels), but it also has a state Electric Vehicle Advisory Council created by the General Assembly that issued a final report with recommendations at the end of 2011.[36]

The Role of State Utility Regulators

The decisions of state utility regulators will largely determine the price, availability, and environmental benefits of electricity as a transportation fuel. Legislatures can direct state utility regulators to adopt policies that will accelerate deployment of advanced vehicle technologies and reduce oil dependence.

For example, California SB 626 (2009) directed the California Public Utilities Commission to "evaluate policies to develop infrastructure sufficient to overcome any barriers to the widespread deployment and use of plug-in hybrid and electric vehicles." The resulting rulemaking is the nation's most comprehensive effort by a utility regulatory body to increase the use of electricity as a transportation fuel.

In Virginia, Chapter 408 of the 2011 Acts of Assembly clarified that electric vehicle (EV) charging service providers are not considered public utilities, directed the State Corporation Commission to evaluate options for rates and other incentives for EV owners to charge during off-peak times, and authorized the commission to approve pilot projects on time-differentiated EV rates.

Policies such as these will be essential to overcoming barriers to widespread deployment and use of EVs.

TRANSPORTATION SYSTEM EFFICIENCY

States can lower oil dependence through policies that reduce sprawl, the number of miles traveled in vehicles, and the amount of time vehicles are running. State-level policies can also promote accessible public transit systems. Relevant strategies focus on issues such as transportation, land use, zoning, building codes, and, to a lesser extent, idling.

By concentrating growth and redevelopment within already existing urban areas and communities, states can reduce the need to develop farther outside of cities and towns, where entirely new infrastructure must be built. New development in suburban and rural areas also increases the distance that citizens must travel for work and other activities, increasing inconvenience and pollution. In general, the area of transportation efficiency is one in which states currently can have significantly more influence than the federal government.

Idling Restrictions

Nineteen states have policies restricting vehicle idling. States receive credit if they have statewide restrictions on idling—whether for all vehicles or simply commercial and heavy-duty vehicles. There is a great deal of variation among idling policies. For example:

- Virginia forbids commercial and public service vehicles from idling for more than three minutes in commercial or residential urban areas, and tour buses and diesel vehicles from idling more than 10 minutes.[37]
- West Virginia does not allow commercial motor vehicles weighing more than 10,000 pounds to idle for more than 15 minutes in any 60-minute period.[38]
- New Hampshire restricts idling for all gasoline- and diesel-powered vehicles, with permitted idling times based on the outside temperature.[39]

Idling restrictions not only promote an ethic of efficiency, but also can result in significant oil savings. Argonne National Laboratory estimates that in the United States, idling annually consumes more than 6 billion gallons of fuel (more than 2 billion of which comes from commercial trucks), which equates to more than 390,000 barrels of oil daily.[40]

Vehicle Miles Traveled/Petroleum Reduction Targets

Only five states have codified or official targets to reduce VMT or transportation-related petroleum consumption. VMT and related targets can be key drivers of a wide range of statewide actions to reduce oil dependence. To receive credit, states must have: 1) a VMT target; 2) a greenhouse gas target for vehicles that will drive VMT reductions; or 3) a target to reduce transportation-related petroleum consumption. That target has to be codified in state law or be an official target that is being acted upon—not simply a goal in a non-binding state climate action plan.

Personal Carsharing

Carsharing companies have been part of the alternative transportation landscape for more than a decade. By using computers and mobile technology to reserve cars in assigned locations for short-term rentals, carsharing is a reasonable alternative to private car ownership. Importantly, carshare members drive fewer overall miles. There are now carshare companies in more than 60 North American cities.

The past couple of years have seen tremendous growth in a version of carsharing that could be even more significant: *personal* carsharing. The average privately owned vehicle spends 23 hours per day parked. The idea behind personal carsharing is to utilize this enormous fleet of vehicles more efficiently by matching the owners of these parked cars with those looking for short-term rentals. The proliferation of smartphones and improvements in vehicle computing allow for seamless transactions between car owners and renters, with keyless entry into vehicles and computer-based payment arrangements.

Perhaps the most important development in personal or *peer-to-peer* carsharing has been changes in laws governing auto insurance. Previously, insurance companies treated personal carshare vehicles as *commercial* vehicles for transporting passengers, similar to limousines and taxicabs. Commercial insurance rates were prohibitively expensive, and insurance companies themselves wanted clarification of just how a shared vehicle's driver could be held accountable while the vehicle's owner could not. Fortunately, in California, Oregon, Massachusetts, and Washington, regulatory changes specifically aimed at promoting personal carsharing have now opened the door to this fuel-saving entrepreneurial business model, with nearly a dozen start-ups racing to capture the value of our massive underused fleet of parked cars.

Only California, Washington, Oregon, and Massachusetts have VMT targets or their greenhouse gas equivalent:

- California enacted SB 375, the Sustainable Communities and Climate Protection Act, in 2008, requiring CARB to develop regional greenhouse gas reduction targets for passenger vehicles—targets that CARB finalized in February 2011.[41]
- Washington enacted HB 2815 in 2008 and set VMT per capita reduction targets of 18 percent by 2020, 30 percent by 2035, and 50 percent by 2050.[42]
- Oregon's Land Conservation and Development Commission adopted new rules in May 2011, codifying targets to reduce greenhouse gas emissions from auto travel by 17 to 21 percent per person by 2035 in the state's major metropolitan service districts, as directed by a 2010 law.[43]

- Massachusetts's 2010 GreenDOT policy set a goal of reducing greenhouse gas emissions by more than 2 million tons by 2020, a reduction of about 7.3 percent below 1990 transportation sector emission levels.[44]

Maine is unique in having a codified statewide, economy-wide petroleum reduction target: at least 30 percent from 2007 levels by 2030, and at least 50 percent by 2050. Adopted in 2011, the law requires the state's oil reduction plan to "prioritize the improvement of energy efficiency and the transition to the use of alternative energy sources for heating and transportation" and to draw on analyses and data from the state's climate action plan.[45] Given the substantial targets, the prioritization of transportation-related consumption, and the state's existing smart growth laws, Maine's plan to meet the targets will likely require promotion of efforts to reduce VMT.

New York no longer receives credit under this category. The state had an Interagency Vehicle-Miles Traveled Reduction Work Group, created by former Governor Paterson's Renewable Energy Task Force, that was charged with developing a plan to reduce VMT statewide by 10 percent from projected levels within 10 years. Although the state has taken several steps to reduce VMT, the Work Group has not met in years and the VMT target is no longer truly active.[46]

Smart Growth Policies

Thirteen states have strong and effective smart growth policies. Growth management legislation is one of the most comprehensive ways to promote smart growth and reduce VMT. To receive full credit, states must have effective growth management policies that provide confidence there will be real progress on smart growth criteria and principles—policies that include: (a) a strong state role in ensuring that local or regional plans meet smart growth criteria, such as state veto power over plans or strong funding incentives to obtain state approval (mere state approval or review does not qualify); (b) alignment of state funding towards plans that meet smart growth criteria; or (c) mandatory growth or service boundaries, if they are enforced and restrictive, usually with permits or an oversight commission/council.

Ideally, states should have VMT or related targets *and* the strong smart growth policies to help achieve them. California's SB 375 has set the new gold standard for having this integrated suite of targets and policies. In addition to directing establishment of regional greenhouse gas reduction targets for passenger vehicles, SB 375 requires each of California's 18 metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) that demonstrates how those targets will be met through integrated land use, housing, and transportation planning. Each SCS is incorporated into the federally enforceable regional transportation plan and must be reviewed and approved by CARB as meeting the regional greenhouse gas target.[47] Washington, Oregon, and Maine also have both targets and smart growth policies.

Southern California's Regional Transportation Planning

We may well have just seen a watershed year in the history of sustainable regional transportation and land use planning. Under SB 375, *the Sustainable Communities and Climate Protection Act*, California's regions are required to create regional plans that model transportation investment and land use patterns that meet greenhouse gas emissions goals set by the state. In 2012, the San Diego region created the first such Sustainable Communities Strategy (SCS).

But the steps taken by SCAG (Southern California Association of Governments) in its SCS may very well have national consequences. SCAG is the largest regional transportation planning organization in the country, representing more than 18 million people in six counties and 191 cities, making up half of California's population. In the midst of a recession, with drastic funding cuts and a depressed housing market, the 83-member SCAG Board nevertheless unanimously approved a revolutionary regional plan, some of the highlights of which include:

- Committing $246 billion, almost half the plan's funding, to public transportation
- Funding 12 major transit expansion projects in Los Angeles over the next 10 years
- Increasing funding for walking and bicycling by more than 300 percent, from $1.8 billion to $6.7 billion
- Aiming for a 24 percent per capita reduction in congestion, despite the addition of 4 million new residents over the life of the plan
- Creating a projected 4.2 million new jobs for the region, 87 percent of which will be within a half-mile of transit
- Increasing the percentage of housing near transit by 50 percent from business-as-usual projections
- Saving 400 square miles of open space from development, an area nearly one-third the size of Yosemite

The key to the plan's wide acceptance was a multi-faceted approach to considering its benefits. Advocates stressed the plan's environmental and public health benefits (for example, more active transportation and less air pollution), fiscal savings for local governments (for example, more compact development equals savings in infrastructure and public service costs), and the changing nature of the housing market and regional demographics. This consensus enabled the unanimous adoption of a $524 billion plan in April 2012, which has been hailed in the *Los Angeles Times* as "a model of sustainability."[a]

[a] Rick Cole, "Southern California hailed as model of sustainability," *Los Angeles Times*, April 17, 2012, http://articles.latimes.com/2012/apr/17/opinion/la-oe-cole-sustainable-socal-vision-20120417.

Several states—Connecticut, Delaware, Hawaii, Maryland, New Jersey, New York, Rhode Island, Tennessee, and Vermont—lack a VMT target but have strong smart growth policies. Maryland, for example, enacted a package of smart growth policies in 1997 under Governor Parris Glendening establishing Priority Funding Areas to focus state funds on promoting growth in areas already served by infrastructure.[48] In 2009, under Governor Martin O'Malley, the state enacted the "Smart, Green, and Growing" legislative package, which included a statewide smart-growth goal. The package also included requirements for localities to implement comprehensive plans and submit annual reports with specified smart-growth metrics and indicators, as well as 12 new Planning Visions (which guide local plans).[49] In 2011, Governor O'Malley accepted PlanMaryland, which seeks to improve coordination between state agencies and local governments on smart growth, as the state development plan and issued an executive order directing its implementation, including directing state agencies (coordinated by the Smart Growth Subcabinet) to review and modify their plans, programs, and policies to support the plan's goals.[50]

A few states that have traditionally been considered strong smart growth states, such as Massachusetts, have recently eliminated funding for some key smart growth programs (or put them on hold) and thus do not currently receive credit.[51]

Some States Have Prioritized the Funding of Public Transit

Public transit systems, such as bus, commuter rail, subway, and light rail programs, are important components in state efforts to promote smart growth and reduce oil dependence. By creating or expanding reliable and accessible public transit programs, states can reduce the number of single-passenger cars on the road, consequently lowering average driving per person. And accessible public transit provides an important transportation alternative as gas prices rise. While rural transit services are important, most transit passengers are in metropolitan areas, and many transit options are a better fit for urban and suburban neighborhoods.

States have the ability to "flex" certain federal funds that ordinarily would be spent on highway projects and instead use them to pay for public transit programs. States that choose not to transfer federal funds to transit programs are not necessarily neglecting transit funding, however, as they may be spending more state dollars on transit. The best way to understand state transit prioritization is to compare the amount of total state spending (including flexed federal funds) on mass transit with the total spent on highway programs. To be fairer to rural states, this year's report once again focuses on spending per urban resident, and to be fairer to all states given the variability of transportation spending, this report once again uses a rolling three-year average. By this measure, the top five states prioritizing public transit spending are New York (ranked first again), Maryland, Massachusetts, Minnesota, and Connecticut. Utah and Louisiana have the lowest transit prioritization.

Of course, transit investment is useful only if it is well targeted—getting people from where they live to where they need to go—and states are encouraged not only to invest in transit, but to do so wisely.[52]

CONCLUSION: STATES MUST TAKE ACTION, FEDS MUST STEP IT UP

Drivers in all states are dependent on oil for their transportation needs. However, some states are more vulnerable to gas price increases than others, and some are taking significantly more action to curtail oil dependence.

Responsible states are making efforts to promote clean fuels, efficient vehicles, and smart growth and transit. These states are helping to make the nation more secure, protecting their citizens' wallets, and enhancing global environmental health. These states' policies serve as examples for the many states that have thus far taken little or no such action.

While states can take a great deal of initiative to reduce consumer gasoline bills, the federal government needs to play a big role as well. Specifically, the Obama Administration and Congress should drive down oil dependence by:

- **Strengthening efforts to lower first-cost barriers for new adopters of advanced vehicle technology and alternative fuels.** This is key to the continued expansion of the advanced vehicle market. Technology costs are decreasing quickly, but in the short-term, purchase incentives are key to achieve cost-parity with conventional vehicles. Federal support for research and development of advanced battery technology is also key to drive down first-costs over the long-term.
- **Implementing the new national transportation law effectively.** While MAP-21 makes changes that could exacerbate the nation's oil addiction, such as allowing state highway agencies to divert as much as half the funding previously dedicated to air-quality-improving projects, such as rail and bus lines, it also has provisions that could prove useful if implemented with an eye to saving oil.

  For example, there are provisions that require more accountability and transparency for the massive highway accounts in the transportation program, which are nearly inscrutable right now. There are also requirements to establish performance measures at national, state, and metropolitan levels. Steps towards new public transportation investments have been reduced and simplified, and a dramatically increased financing program called America Fast Forward could help deliver more such investments.

Congress must provide effective policy tools, and the executive branch must in turn use them aggressively (as the Obama Administration has laudably done with fuel-efficiency standards), with an eye to reducing oil dependence in the United States by delivering more clean vehicle, fuel, and transportation options to consumers who deserve no less.

METHODOLOGY

GASOLINE PRICE VULNERABILITY RANKING

The gasoline price vulnerability ranking is based on data from the following sources:

Motor Gasoline Consumption (2011)

- Federal Highway Administration's Motor Fuel Reported by States
  https://www.fhwa.dot.gov/policyinformation/motorfuelhwy_trustfund.cfm

Gasoline Prices by State (2011)

- American Automobile Association
  http://www.fuelgaugereport.aaa.com/.

Gasoline Taxes by State (2011)

- American Petroleum Institute's State Gasoline Tax Reports
  http://www.api.org/statistics/fueltaxes/upload/State_Motor_Fuel_Excise_Tax_Update.pdf

Licensed Drivers by State (2010)

- Federal Highway Administration's *Highway Statistics 2010*
  http://www.fhwa.dot.gov/policyinformation/statistics/2010/dl22.cfm

Per Capita Personal Income by State (2011)

- Bureau of Economic Analysis
  http://www.bea.gov/newsreleases/regional/spi/spi_newsrelease.htm

The gasoline price vulnerability ranking is based on the percentage of personal income spent on gasoline in each state in 2011. To calculate this percentage, the amount of motor gasoline consumed in each state is multiplied by the average price per gallon of fuel (including state and federal taxes) to produce the total amount spent in each state on gasoline. This figure is then divided by the total number of licensed drivers to produce the amount spent on gasoline per driver. Finally, this number is divided by per capita income and multiplied by 100 to produce the average percentage of drivers' income spent on gasoline.

The data that were used to create figure 2 came from the following source:

- Energy Information Administration, *Weekly U.S. All Grades All Formulations Retail Gasoline Prices*, release date September 4, 2012
  http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emm_epm0_pte_nus_dpg&f=w

SOLUTIONS RANKING

The solutions ranking was based primarily on reviews of individual state policies, and the policies given credit are listed in appendix C. (The rankings generally focus only on whether states have policies on the books; effective implementation of policies was only considered with respect to some state fleet and smart growth policies.) In addition, the following sources provide useful summaries and/or compilations of state policies:

Vehicles and Fuels

State Fleet Requirements

- Department of Energy, Office of Energy Efficiency and Renewable Energy, Alternative Fuels Data Center
  http://www.afdc.energy.gov/laws/state

Low-Carbon Fuel Standard

- Center for Climate and Energy Solutions, U.S. States & Regions, Low Carbon Fuel Standard
  http://www.c2es.org/us-states-regions/policy-maps/low-carbon-fuel-standard
- NESCAUM, Clean Fuels Standard
  http://www.nescaum.org/topics/clean-fuels-standard/

Advanced Vehicle Technologies Strategy

- Department of Energy, Office of Energy Efficiency and Renewable Energy, Alternative Fuels Data Center
  http://www.afdc.energy.gov/laws/state

Transportation System Efficiency

Idling Restrictions

- American Transportation Research Institute, *Compendium of Idling Regulations*
  http://www.atri-online.org/research/idling/ATRI_Idling_Compendium.pdf
- Department of Energy, Office of Energy Efficiency and Renewable Energy, Alternative Fuels Data Center
  http://www.afdc.energy.gov/laws/state

VMT Targets and Smart Growth Policies

- ACEEE, *2011 State Energy Efficiency Scorecard*
  http://www.aceee.org/sites/default/files/publications/researchreports/e115.pdf
- Center for Climate and Energy Solutions, U.S. States & Regions, VMT-Related Policies and Incentives
  http://www.c2es.org/us-states-regions/policy-maps/vehicle-miles-traveled

- NRDC and Smart Growth America, *Getting Back on Track*, appendix C, Dec. 2010
  http://www.nrdc.org/smartGrowth/files/GettingBackonTrack_report.pdf
- Smart Growth America, *Driving Down VMT*
  http://www.smartgrowthamerica.org/documents/smartgrowthclimatepolicies.pdf

State transit prioritization is based not on state policies but on state spending. Data on population and spending come from the following sources:

State Urban Population Totals

- US Census Bureau, Percent urban and rural in 2010 by state
  http://www2.census.gov/geo/ua/PctUrbanRural_State.xls

State Transit Funding

- Federal Highway Administration, *Highway Statistics 2010, 2009, and 2008*
  http://www.fhwa.dot.gov/policyinformation/statistics/2010/mt1a.cfm

  http://www.fhwa.dot.gov/policyinformation/statistics/2010/mt1b.cfm

  http://www.fhwa.dot.gov/policyinformation/statistics/2009/mt1a.cfm

  http://www.fhwa.dot.gov/policyinformation/statistics/2009/mt1b.cfm

  http://www.fhwa.dot.gov/policyinformation/statistics/2008/mt1a.cfm

  http://www.fhwa.dot.gov/policyinformation/statistics/2008/mt1b.cfm

State Highway Funding

- Federal Highway Administration, *Highway Statistics 2010, 2009, and 2008*
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  http://www.fhwa.dot.gov/policyinformation/statistics/2008/sf21.cfm

In order to calculate a solutions ranking of the 50 states, NRDC and DGA started by assigning a value of either a quarter point, half point, one point, or two points to each action in the table that a state currently takes. Actions with a bigger impact on oil dependence received more points:

- **2 points:** LCFS in place or actively under development
- **1 point:** ZEV mandate; codified/official VMT or related target; smart growth policies
- **½ point:** State fleet requirements for efficient and/or alternative fuel vehicles; signed on to the LCFS MOU; advanced vehicle technology consumer incentives or state councils with written recommendations; statewide idling restrictions
- **¼ point:** Real aim of reducing petroleum use (or increasing alternative fuel use) in state fleets, with specific means to get there, but (a) specific targets are either absent or weak, or (b) the goals can be met with just reformulated gasoline, flex fuel vehicles (with no requirement to actually use alternative fuels), or low-efficiency vehicles.

NRDC and DGA then added a fraction of a point to states' scores based on how their transit prioritization compared with the highest state's transit percentage (New York: 54.17 percent). In other words, New York's transit prioritization of 54.17 percent was given a value of 1 point, and all other states were given a value proportional to this score. For example, Colorado's transit spending percentage of 12.82 was divided by New York's 54.17; the resulting 0.2366 was added to Colorado's total points.

APPENDIX A

Rankings of Most Vulnerable States over the Past Six Years						
STATE	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Alabama	17	14	20	31	12	15
Alaska	45	47	44	39	35	39
Arizona	9	13	21	36	27	27
Arkansas	7	8	10	10	8	10
California	30	27	33	23	28	36
Colorado	40	42	45	45	46	44
Connecticut	50	50	50	50	50	50
Delaware	32	33	28	37	33	31
Florida	42	39	40	38	38	38
Georgia	4	3	9	12	4	7
Hawaii	36	40	31	27	39	43
Idaho	24	25	15	9	5	11
Illinois	38	36	36	42	40	40
Indiana	16	7	12	33	31	28
Iowa	15	10	30	24	9	8
Kansas	43	34	19	20	42	37
Kentucky	3	5	6	7	3	4
Louisiana	8	4	5	3	24	17
Maine	12	12	13	13	18	22
Maryland	39	41	47	47	43	42
Massachusetts	48	48	48	48	48	46
Michigan	27	22	24	19	22	20
Minnesota	19	21	25	30	21	24
Mississippi	1	1	1	1	1	1
Missouri	18	15	16	22	13	18
Montana	22	20	2	2	11	16
Nebraska	37	38	37	40	34	32
Nevada	25	28	38	35	23	25
New Hampshire	35	37	46	46	36	33
New Jersey	46	45	42	44	44	48
New Mexico	5	6	8	16	10	9
New York	49	49	49	49	49	49
North Carolina	20	24	18	18	15	21
North Dakota	13	18	22	15	7	12
Ohio	26	26	26	26	26	26
Oklahoma	6	9	4	4	6	5
Oregon	34	35	35	34	37	35
Pennsylvania	44	43	41	43	41	41
Rhode Island	47	46	27	28	47	47
South Carolina	2	2	3	5	2	3

Rankings of Most Vulnerable States over the Past Six Years						
STATE	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
South Dakota	23	23	17	14	19	19
Tennessee	21	17	14	11	14	14
Texas	11	16	7	6	17	6
Utah	14	19	11	8	20	13
Vermont	33	31	39	29	29	29
Virginia	29	30	34	32	32	34
Washington	41	44	43	41	45	45
West Virginia	10	11	23	21	16	2
Wisconsin	31	32	32	25	30	30
Wyoming	28	29	29	17	25	23

APPENDIX B

Rankings of States Leading on Policy Solutions over the Past Six Years						
STATE	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Alabama	43	48	44	42	38	37
Alaska	34	50	41	50	48	49
Arizona	38	24	13	33	18	22
Arkansas	28	42	43	40	46	45
California	3	1	1	1	1	1
Colorado	12	12	16	19	30	26
Connecticut	10	4	5	5	7	6
Delaware	36	45	28	22	15	11
Florida	13	17	10	11	12	30
Georgia	22	22	17	16	21	31
Hawaii	11	32	14	10	14	13
Idaho	32	33	49	37	39	47
Illinois	33	7	21	29	17	20
Indiana	25	29	33	32	44	44
Iowa	15	26	27	25	47	33
Kansas	16	27	39	43	36	41
Kentucky	44	38	36	30	33	32
Louisiana	6	20	19	21	28	25
Maine	7	11	20	27	11	7
Maryland	9	3	11	12	6	8
Massachusetts	18	21	2	3	3	4
Michigan	35	25	38	28	31	27
Minnesota	20	30	18	8	19	16
Mississippi	48	49	47	44	40	48
Missouri	27	41	22	34	43	35
Montana	17	44	34	24	35	34
Nebraska	46	34	40	48	50	50
Nevada	39	40	30	35	22	38
New Hampshire	45	39	25	20	23	24
New Jersey	2	10	9	13	5	12
New Mexico	30	6	4	9	20	28
New York	8	8	6	4	4	5
North Carolina	23	23	31	38	32	17
North Dakota	31	37	42	41	49	46
Ohio	41	28	32	47	41	39
Oklahoma	14	19	45	45	37	36
Oregon	5	5	8	2	2	2
Pennsylvania	19	9	7	7	13	15
Rhode Island	4	14	12	14	8	9
South Carolina	29	18	26	26	34	21

Rankings of States Leading on Policy Solutions over the Past Six Years						
STATE	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
South Dakota	47	47	46	39	45	43
Tennessee	24	16	24	18	27	14
Texas	42	36	37	31	26	18
Utah	40	13	29	36	24	40
Vermont	26	15	15	23	10	10
Virginia	37	35	23	15	16	19
Washington	1	2	3	6	9	3
West Virginia	49	43	50	46	29	23
Wisconsin	21	31	35	17	25	29
Wyoming	50	46	48	49	42	42

APPENDIX C

To access the links to the policies for which states have received credit, please see: http://www.nrdc.org/energy/states/

List of Policies for Which States Received Credit	
STATE	**POLICIES**
Alabama	**State Fleets:** Code of Alabama §§41-17A-1 through 41-17A-6
Alaska	
Arizona	**State Fleets:** Executive Order 2010-14 (2010); Arizona Revised Statutes §41-803(G) – (T) **Advanced Vehicles:** Arizona Revised Statutes §§43-1090, 43-1176
Arkansas	
California	**State Fleets:** California Public Resources Code §§25722.5, 25722.6, 25722.8 **LCFS:** Executive Order S-01-07 (2007); ARB Resolution 09-31 **Advanced Vehicles:** ZEV program; CARB Resolution 09-66 (2009); AB 118 (2007); Clean Vehicle Rebate Project; EV Action Plan **Idling:** California Code of Regulations Title 13, §2485 **VMT/GHG/Petroleum Target:** SB 375 (2008); ARB Executive Order No. G-11-024 **Smart Growth:** SB 375 (2008)
Colorado	**Advanced Vehicles:** C.R.S. §39-22-516.5
Connecticut	**State Fleets:** Executive Order 22 (2009); Connecticut General Statutes §4a-67d **LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** Regulation §22a-174-36b; Connecticut Clean Fuel Program; Connecticut EV Infrastructure Council final report (2009) **Idling:** Regulation §22a-174-18(b)(3) **Smart Growth:** Connecticut General Statutes §§8-23, 8-35a, 16a-27, 16a-31, 16a-35d
Delaware	**State Fleets:** Executive Order 18 (2010) **LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Idling:** 7 Delaware Administrative Code §1145 **Smart Growth:** Delaware Strategies for State Policies and Spending (2010)
Florida	**State Fleets:** Florida Statutes §286.29
Georgia	**Advanced Vehicles:** Georgia Code §48-7-40.16
Hawaii	**State Fleets:** Hawaii Revised Statutes §§103D-412, 196-9 **Idling:** Hawaii Administrative Rules §11-60.1-34 **Smart Growth:** Hawaii Revised Statutes §§205-2, 205-16, 205-17, 226-104
Idaho	
Illinois	**State Fleets:** Executive Order 11 (2009); 30 Illinois Compiled Statutes §500/25-75 **Advanced Vehicles:** 415 Illinois Compiled Statutes §120/30; Illinois Electric Vehicle Advisory Council final report (2011)
Indiana	
Iowa	**Advanced Vehicles:** Iowa Code §422.7
Kansas	**State Fleets:** Kansas Statutes §§75-4616 through 75-4618
Kentucky	**State Fleets:** Kentucky Revised Statutes §45A.625
Louisiana	**State Fleets:** Louisiana Revised Statutes §39:364 **Advanced Vehicles:** Louisiana Revised Statutes §47:6035
Maine	**State Fleets:** 5 Maine Revised Statutes §1812-E **Advanced Vehicles:** 06-096 CMR Ch. 127 **Idling:** 38 Maine Revised Statutes §585-L **VMT/GHG/Petroleum Target:** Public Law, Chapter 400 (2011) **Smart Growth:** 30-A Maine Revised Statutes Ch. 187, especially §§4326, 4349-A

List of Policies for Which States Received Credit	
STATE	**POLICIES**
Maryland	**LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** COMAR §26.11.34; Maryland Statutes, Tax-General Code §10-729; Maryland Statutes, Transportation Code §13-815 **Idling:** Maryland Statutes, Transportation Code §22-402(c)(3) **Smart Growth:** Maryland Statutes, State Finance and Procurement Code §5-7B-04; Smart, Green & Growing legislative package (SB 280 / HB 297, SB 276 / HB 295, SB 273 / HB 294) (2009); PlanMaryland (2011); Executive Order 01.01.2011.22 (2011)
Massachusetts	**State Fleets:** Massachusetts General Laws Chapter 7, Section 9A **LCFS:** Clean Energy Biofuels Act (Chapter 206 of the Acts of 2008); Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** 310 CMR 7.40 **Idling:** Massachusetts General Laws Chapter 90, §16A; DEP Regulations 310 CMR 7.11(1)(b) **VMT/GHG/Petroleum Target:** MassDOT's GreenDOT Policy Directive
Michigan	**Advanced Vehicles:** Michigan Compiled Laws §§211.9(i), 207.822(f)
Minnesota	**State Fleets:** Executive Order 11-13 (2011); Minnesota Statutes §§16C.135, 16C.137 **Advanced Vehicles:** Minnesota Plug-in Hybrid Electric Vehicle Task Force report (2007)
Mississippi	
Missouri	**State Fleets:** Missouri Revised Statutes §§414.400 through 414.415
Montana	**Advanced Vehicles:** Montana Code Annotated §15-30-2320
Nebraska	
Nevada	**Idling:** Nevada Administrative Code §445B.576
New Hampshire	**LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Idling:** Air Resources Division Admin. Rules Env-A §§1101.05-.06, .09-.10
New Jersey	**Advanced Vehicles:** NJAC §7:27-29; New Jersey Statutes §54:32B-8.55 **Idling:** New Jersey Administrative Code §§7:27-14.3, 7:27-15.8 **Smart Growth:** State Strategic Plan; Transit Village Initiative
New Mexico	**State Fleets:** New Mexico Statutes §13-1B
New York	**State Fleets:** Executive Orders 111 (2001) and 142 (2005) **LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** 6 NYCRR §218-4; NYC Private Fleet Program **Idling:** 6 NYCRR §217-3 **Smart Growth:** Environmental Conservation Laws §6-0107
North Carolina	**State Fleets:** North Carolina General Statutes §§143-341(8)(i), 143-215.107C **Advanced Vehicles:** Clean Fuel Advanced Technology project **Idling:** 15A NCAC §02D.1010
North Dakota	
Ohio	**State Fleets:** Ohio Revised Code §125.834
Oklahoma	**Advanced Vehicles:** Oklahoma Statutes §68-2357.22
Oregon	**State Fleets:** Oregon Revised Statutes §§283.327 (and .305); Executive Order 06-02 (2006) **LCFS:** HB 2186 (2009) **Advanced Vehicles:** OAR 340-257; Commercial Electric Truck Incentive Program; HB 3672 (2011); Public Utility Commission of Oregon, Order No. 12-013 (2012) **Idling:** HB 2081 (2011) **VMT/GHG/Petroleum Target:** OAR 660 - 044 (2011); HB 2001 (2009); SB 1059 (2010) **Smart Growth:** Oregon Revised Statutes Ch. 197; Statewide Planning Goals & Guidelines (2010)
Pennsylvania	**LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** Alternative Fuel Vehicle Rebates program (Title 73 Pennsylvania Statutes, Chapter 18E, §1647.3) **Idling:** Act 124 of 2008 (Title 35 Pennsylvania Statutes, Chapter 23B)
Rhode Island	**State Fleets:** Executive Order 05-13 (2005) **LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** Air Pollution Control Regulation No. 37 **Idling:** Rhode Island General Laws §§31-16.1-1 to -4; Air Pollution Control Regulation No. 45 **Smart Growth:** Rhode Island General Laws Ch. 45-22.2; Rhode Island State Land Use Policies and Plan (2006)
South Carolina	**Advanced Vehicles:** South Carolina Code of Laws §§12-6-3376, 12-6-3377; Act 161 (2012) **Idling:** South Carolina Code of Laws §§56-35-10 et seq.

List of Policies for Which States Received Credit	
STATE	**POLICIES**
South Dakota	
Tennessee	**State Fleets:** Tennessee Code §§4-22-101 and 4-3-1109 **Advanced Vehicles:** Public Chapter No.473 / HB 2139, Section 41, Item 27 (2011) **Smart Growth:** PC 1101 (1998)
Texas	**State Fleets:** Texas Statutes, Government Code §§2158.004-2158.009 **Advanced Vehicles:** Texas Statutes, Health and Safety Code §§382.210, 394 **Idling:** Texas Administrative Code §§30.114.510 to 30.114.517
Utah	**Advanced Vehicles:** Utah Code §§59-7-605, 59-10-1009, 19-1-401 through 19-1-405
Vermont	**State Fleets:** Executive Order 10-30 / 14-03 (2003); Vermont Statutes Title 3, Chapter 45, §2291 (and 2291a and b) **LCFS:** Northeast and Mid-Atlantic LCFS MOU (2009) **Advanced Vehicles:** Air Pollution Control Regulations, Subchapter XI, §5-1106 **Smart Growth:** Act 250 (10 V.S.A. Ch. 151)
Virginia	**State Fleets:** Virginia Code §2.2-1176(B): Executive Order 36 (2011) **Advanced Vehicles:** Virginia Get Ready Initial Electric Vehicle Plan (2010) **Idling:** Virginia Administrative Code §9-5-40-5670(C)
Washington	**State Fleets:** Executive Order 05-01 (2005); Revised Code of Washington §43.41.130 **LCFS:** Executive Order 09-05 (2009); LCFS scenario analysis (2011) **Advanced Vehicles:** Revised Code of Washington §§82.08.809, 82.08.816, 82.12.809, 82.12.816, 82.29A.125 **VMT/GHG/Petroleum Target:** HB 2815 (2008) **Smart Growth:** Revised Code of Washington Ch. 36.70a
West Virginia	**Advanced Vehicles:** West Virginia Code §11-6D **Idling:** SB 544 (2012); West Virginia Code §17C-13A-1 et seq.
Wisconsin	**State Fleets:** Wisconsin Statutes §16.045; Executive Order 141 (2006)
Wyoming	

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