

## **State Clean Cars Programs: An Effective Way to Slash Global Warming Pollution**

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### **10-State Clean Car Standards to Cut 64 Million Metric Tons of Global Warming Emissions per Year by 2020**

Shrinking glaciers, rising global temperatures, increasingly severe storms, and alarming scientific predictions have led to increasing public concern about the impacts of global warming on the environment, health and society. But while the Bush administration and federal policy-makers continue to resist efforts to reduce global warming pollution, many states are taking dramatic, effective actions to address the threat – including the adoption of the “Clean Cars Program” which sets limits on global warming pollution from cars, light trucks and SUVs.

The 10 states that have adopted the Clean Cars Program will **cut global warming pollution from cars, light trucks and SUVs by 64 million metric tons per year in 2020**, while saving consumers money and reducing the nation’s reliance on oil.

The reduction in global warming pollution that will result from the new standards is significant on a global scale, equivalent to the national annual emissions from all but 47 of the world’s countries. Put another way, by 2020 the Clean Cars Program will eliminate as much carbon dioxide annually as is produced by 63 coal-fired power plants generating enough power for nearly a quarter of U.S. homes.

At the same time, the standards **could reduce gasoline consumption by as much as 7.2 billion gallons per year in 2020** – nearly as much as is consumed by all the vehicles in Florida in a year – and save consumers up to \$16.7 billion annually at the pump in 2020.

### ***Global Warming: A Threat Not to Be Ignored***

Human activities – particularly the burning of fossil fuels – have changed the composition of the atmosphere in ways that threaten dramatic alteration of the global climate. The first signs of warming are already appearing and future changes will have serious impacts on our nation’s future.

Temperatures are already rising, with 2005 tied for the hottest year on record.<sup>1</sup> Nine of the 10 hottest years on record have occurred within the last decade. Hurricanes and cyclones have

become more powerful, with almost twice as many Category 4 or 5 hurricanes between 1990 and 2004 as in the previous 15 years.<sup>2</sup> Sea levels have risen 3.9 to 9.8 inches in the past century.<sup>3</sup>

Future temperature increases and changes in precipitation patterns may alter the distribution of plants and change crop productivity. Water supplies may dwindle as higher temperatures increase evaporation. Higher sea levels may flood coastal areas, especially in Gulf Coast and South Atlantic states, causing property damage, eroding beaches and raising the salinity of drinking water supplies. Stronger storms may increase the damage. Public health may suffer as heat-related deaths rise and insect-borne diseases spread.

The federal government has taken no serious action to reduce the pollution that contributes to warming. Individual states, however, have begun to fill the policy void, adopting a variety of measures to curb global warming pollution. Among the most powerful of these policies are the vehicle global warming emission standards designed by the state of California and since adopted by nine other states.

### ***The Clean Cars Program: Reducing Global Warming Emissions***

The Clean Air Act allows states to choose between complying with federal vehicle emission standards and adopting the more protective standards – known as the Clean Cars Program – implemented by the state of California.

Unlike current federal standards, the Clean Cars Program includes limits on global warming pollution. Beginning in model year 2009, the program will require automakers to reduce the average amount of global warming pollution from their cars, light trucks and SUVs. By 2015, new cars will be required to emit 34 percent less global warming pollution on average, and light trucks 25 percent less pollution.<sup>4</sup> These aggressive, yet achievable standards will result in significant reductions in global warming pollution.

To date, 10 states – California, Connecticut, Maine, Massachusetts, New Jersey, New York, Oregon, Rhode Island, Vermont and Washington – have adopted the Clean Cars Program.<sup>5</sup>

#### **What Is the Clean Cars Program?**

The Clean Cars Program is a series of air pollution standards adopted by the state of California. The Clean Air Act allows other states with serious air pollution problems to adopt the standards as well. There are three components to the program:

- **The Low-Emission Vehicle program**, which sets strong standards for emissions of smog-forming and toxic air pollutants.
- **The Zero-Emission Vehicle program**, which promotes advanced-technology vehicles such as hybrids, fuel-cell vehicles and electric vehicles.
- **Global Warming Emission Standards**, which establish limits on emissions of pollutants that contribute to global warming.

Light-duty vehicles in these 10 states are projected to release 364 million metric tons of carbon dioxide (MMT $\text{CO}_2$ ) in 2020, the result of increasing vehicle travel, growing use of SUVs and light trucks, and stagnant fuel economy. By adopting the Clean Cars Program, annual emissions will be reduced by an average of 18 percent, to 300 MMT $\text{CO}_2$  in 2020. (See table, next page.)

Cumulative emission reductions from the inception of the program through 2020 are even greater, totaling 335 MMTCO<sub>2</sub>.<sup>6</sup>

**Light-Duty Vehicle Emissions by State in 2020 (MMTCO<sub>2</sub>)<sup>7</sup>**

State	Projected	With Clean Cars Program	Reduction	Percent Reduction
California	161.7	132.6	29.1	18%
Connecticut	15.1	12.2	2.8	19%
Maine	7.4	6.1	1.3	18%
Massachusetts	25.2	20.5	4.6	18%
New Jersey	55.0	45.1	9.9	18%
New York	52.6	43.4	9.1	17%
Oregon	13.0	11.2	1.8	14%
Rhode Island	4.4	3.6	0.8	18%
Vermont	3.8	3.2	0.7	18%
Washington	26.2	22.5	3.7	14%
<b>Total</b>	<b>364</b>	<b>300</b>	<b>64</b>	<b>18%</b>

The combined global warming pollution reduction is significant on a global scale.

- The annual savings projected for 2020 are equal to the national global warming emissions from all but 47 of the world’s countries today.<sup>8</sup>
- These savings are also equal to the amount of pollution produced by 63 500-megawatt coal-fired power plants in a year.<sup>9</sup> That many plants generate enough electricity to serve 23 million homes annually, or nearly one quarter of U.S. households.<sup>10</sup>
- The cumulative global warming emission reduction from the program between 2009 and 2020 are equivalent to taking 68 million of today’s cars off the road for an entire year.<sup>11</sup>

***Saving Energy and Saving Money***

The Clean Cars Program could reduce U.S. petroleum consumption and save money for consumers. Automakers use a variety of technologies to meet the standards including technologies to reduce gasoline use, allow for the use of low-carbon vehicle fuels, or reduce global warming emissions from air conditioning.

Depending on how automakers choose to comply with the standards, the Clean Cars Program could lead to a reduction in gasoline use of as much as 7.2 billion gallons annually in 2020 – saving as much fuel as would be saved if every driver in America parked their cars for 19 days out of the year.<sup>12</sup> Put another way, the standards could save as much as gasoline as taking 13.1 million of today’s cars off the road, or nearly as much gasoline as is currently used by all the vehicles in Florida in a year.<sup>13</sup>

Reduced gasoline consumption could also translate into consumer savings at the pump. At today's average fuel prices (\$2.33 per gallon), consumers could save up to \$16.7 billion at the pump in 2020.<sup>14</sup> These savings would more than offset the additional cost of vehicles complying with the program. The state of California projects that vehicle owners will save a total of \$41 to \$81 each year due to the standards – and that is assuming gasoline costs only \$1.74 per gallon.<sup>15</sup>

### **States Must Be Free to Act**

States' freedom to adopt California air emission standards has led to cleaner air and technological advances that have benefited all Americans. Unfortunately, major automakers have fought stronger emission standards at every turn and have now filed suit to undermine the ability of any state to adopt emission standards for global warming pollution. In addition, a push could be forthcoming to get Congress to limit states' ability to follow California in the setting of strong automobile emission standards.

The 10 states that have adopted the Clean Cars Program have taken leadership in reducing America's contribution to global warming. The federal government should follow their lead by limiting global warming pollution from cars, power plants, and factories and taking other steps to reduce global warming pollution, save energy, and save consumers money at the pump.

### **Notes**

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<sup>1</sup> Marcia Baker and Brenda Ekwurzel, Union of Concerned Scientists, *2005 Vies for Hottest Year on Record*, 18 January 2006.

<sup>2</sup> P.J. Webster, et al, "Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment," *Science*, 16 September 2005.

<sup>3</sup> United Nations Environment Program, *Vital Climate Graphics: Observed Climate Trends*, downloaded from [www.grida.no/climate/vital/19.htm](http://www.grida.no/climate/vital/19.htm), 12 January 2006.

<sup>4</sup> California Environmental Protection Agency, Air Resources Board, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles*, 6 August 2004.

<sup>5</sup> Pennsylvania has also adopted elements of the Clean Cars Program and is now engaged in rulemaking to update and enforce the standards.

<sup>6</sup> Annual savings for each state except California were extracted from the analyses referenced above. Cumulative savings for California were calculated using the average ratio of cumulative savings to 2020 savings in other states except Washington, which is assumed to begin the program in model year 2010.

<sup>7</sup> Lower percentage reductions for Oregon and Washington are likely the result of methodological differences in the studies used to estimate the reductions, not reduced effectiveness of the program in those states. Estimated emission reductions come from three different analyses. For Northeastern states, we relied on an analysis conducted by the Northeast States for Coordinated Air Use Management (NESCAUM), as presented in *Northeast State GHG Emission Reduction Potential from Adoption of the California Motor Vehicle GHG Standards, Summary of NESCAUM Analysis*, October 2005. The California Air Resources Board included its estimate for California in *Regulations to Control Greenhouse Gas Emissions From Motor Vehicles, Final Statement of Reasons*, 4 August 2005. For Oregon and Washington, we calculated the emission reductions using the methodology described in Jeremiah Baumann and Elizabeth Ridlington, OSPIRG Foundation, *Cars and Global Warming: How the Clean Cars Program Curbs Global Warming Pollution in Oregon*, October 2005. Historic and projected vehicle-miles traveled data for Washington were obtained from Brian Calkins, Transportation Economist, Washington State Department of Transportation, *Forecast of Fuels, Vehicles, and Related Data Through 2031*, November 2004.

<sup>8</sup> U.S. Department of Energy, Energy Information Administration, *International Energy Annual 2003*, 11 July 2005.

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<sup>9</sup> Emissions from coal-fired power plants were calculated using the following assumptions. Each 500 MW plant produces 3.94 million megawatt-hours of power annually. Average energy consumption per MWh generated was calculated from U.S. Department of Energy, Energy Information Administration, Form EIA-906/920 for 2004 for all coal-fired power plants in the U.S. The carbon intensity of coal was obtained from U.S. Department of Energy, Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2002*.

<sup>10</sup> Based on electricity consumption per household data from U.S. Department of Energy, Energy Information Administration, *2001 Residential Energy Consumption Survey: Household Energy Consumption and Expenditures Tables, Table CE1-4c. Total Energy Consumption in U.S. Households by Type of Housing Unit*, 2001.

<sup>11</sup> Based on 550 gallons of fuel per vehicle in 2003 from U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2003*, downloaded from [www.fhwa.dot.gov/policy/ohim/hs03/index.htm](http://www.fhwa.dot.gov/policy/ohim/hs03/index.htm), 16 January 2006 and carbon dioxide emissions of 19.654 pounds per gallon of gasoline from U.S. Department of Energy, Energy Information Administration, *Voluntary Reporting of Greenhouse Gases Program, Fuel and Energy Source Codes and Emission Coefficients*, downloaded from [www.eia.doe.gov/oiaf/1605/coefficients.html](http://www.eia.doe.gov/oiaf/1605/coefficients.html), 10 January 2006.

<sup>12</sup> Calculated assuming 19.654 pounds of carbon dioxide per gallon of gasoline, per U.S. Department of Energy, Energy Information Administration, *Voluntary Reporting of Greenhouse Gases Program, Fuel and Energy Source Codes and Emission Coefficients*, downloaded from [www.eia.doe.gov/oiaf/1605/coefficients.html](http://www.eia.doe.gov/oiaf/1605/coefficients.html), 10 January 2006. Total gasoline consumption from U.S. Department of Energy, Energy Information Administration, *Prime Supplier Sales Volume for 2004*, 5 January 2006.

<sup>13</sup> Based on 550 gallons of fuel per vehicle in 2003 and annual highway gasoline consumption of 7.9 billion gallons in Florida in 2003 from U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2003*, downloaded from [www.fhwa.dot.gov/policy/ohim/hs03/index.htm](http://www.fhwa.dot.gov/policy/ohim/hs03/index.htm), 16 January 2006.

<sup>14</sup> Current price of gasoline from U.S. Department of Energy, Energy Information Administration, *Gasoline and Diesel Fuel Update*, 9 January 2006.

<sup>15</sup> Meszler Engineering Services, *GHG Emission Standards for Vehicles: An Overview of California's Pavley Requirements*, presentation to Rhode Island GHG Process Stakeholders, 28 April 2005.