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## State and Local Net Greenhouse Gas Emissions Reduction Programs

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### Greenhouse Gas Standards for Vehicles

**Program type:** Transportation

**State:** California

#### Description

On July 22, 2002, California Governor Gray Davis signed Assembly Bill (AB) 1493 into law, requiring the California Air Resources Board (ARB) to develop and adopt the nation's first greenhouse gas emission standards for automobiles. The legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It cited several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution created by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. Further, the legislature stated that technological solutions to reduce greenhouse gas emissions would stimulate the California economy and provide jobs.

Under the legislation, the ARB must adopt standards that will achieve "the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles," taking into account environmental, social, technological, and economic factors. "Cost-effective" is defined by the legislation to mean greenhouse gas reductions that are economical to the owner of the vehicle, taking into account the full life-cycle costs of the vehicle. The ARB is also required to provide flexibility for compliance with the regulations, allowing the use of alternative methods to comply with the regulations, as long as the alternative methods achieve equivalent or greater reductions in greenhouse gas emissions.

In setting the emission standards, the ARB is not permitted to impose mandatory trip reduction measures or land-use restrictions. It may not undertake the following measures in setting the standards: 1) imposing additional fees or taxes on vehicles, motor fuel, or travel, 2) banning the sale of any vehicle category, 3) requiring a reduction in vehicle weight, 4) limiting the speed limit, or 5) limiting vehicle miles traveled. The legislation provides for credits for emission reductions achieved before the regulations take effect, using 2000 as the baseline year. The credits are to be granted using procedures and protocols adopted by the California Climate Action Registry. On June 14, 2004, the California Air Resources Board (ARB) released a draft of its staff proposal in response to Assembly Bill 1493. The bill, passed in 2002, directed the ARB to adopt regulations that would achieve the "maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles." The staff report requires a 1 to 2 percent reduction in emissions in 2009, depending on vehicle type, rising incrementally to reach approximately 30 percent below projected 2009 levels in 2016. The cost-effective reduction measures identified by the staff include discrete variable valve lift, dual cam phasing, turbocharging with engine downsizing,

automated manual transmissions, and camless valve actuation. The ARB expects that the regulations will add around \$1000 to the cost of a new car in 2014 but that the increased up-front cost will be more than offset by decreased operating costs over the life of the vehicle. The regulations will apply to model years 2009 and after.

The ARB adopted the regulations on September 24, 2004. The regulations are not to take effect before January 1, 2006, in order to provide the legislature with sufficient time to review the regulations and to amend them, if necessary. The legislature is also required to hold at least one public hearing on the regulations.

In December 2004, the Alliance of Automobile Manufacturers (AAM) announced a lawsuit against the California Air Resources Board over AB 1493. The Association of International Automobile Manufacturers has joined the AAM in the lawsuit. The suit argues that forcing manufacturers to reduce greenhouse gas emissions is akin to setting fuel economy standards, which can only be set by the federal government. The Schwarzenegger administration has responded to the lawsuit by arguing that carbon dioxide is a pollutant that the ARB can regulate, and that there are other methods of reducing GHG emissions from vehicles besides increasing fuel economy.

### **Development**

AB 1493's predecessor was AB 1058, introduced by Assemblymember Fran Pavley (D-Agoura Hills). Many automobile manufacturers, new car dealers, oil companies, and labor unions, were strongly opposed to AB 1058, claiming that the bill would lead to higher taxes, more expensive and less safe vehicles, and an SUV ban. The opposition mounted a \$5 million campaign against the bill, and the bill was stalled in the Assembly for months.

AB 1493, substantially similar to AB 1058, was introduced as an attempt to address criticism of the first bill. It included a specific prohibition against raising taxes or outlawing any class of vehicle. The state Senate voted 23-16 in favor of the new bill; it passed the Assembly two days later with a party-line vote of 41-30. Though organized opposition to the bill was strong, a statewide poll conducted in June 2002 by the Public Policy Institute of California found that 81 percent of adults in California, including 77 percent of SUV owners, favored the concept of the bill.

### **Lesson Learned**

Many technologies are available that may reduce greenhouse gas emissions, and these different technologies can be used with varying effect in different types of vehicles. It is a challenge to determine the cumulative effect of combining technologies, since the reduction achieved by a set of technologies is not equal to the sum of the reductions that could be achieved separately by each technology. In addition, the structure of the standard will have different impacts on individual manufacturers and on total fleetwide emissions. Great care must be taken to analyze these effects.

An ARB official said that because of the controversy surrounding the issue, it is essential to have a sound staff analysis of the broad range of issues involving the future standard. Although AB 1493 is state legislation, it relates to debates that are underway at the federal level and therefore focuses more attention on the ARB from the national level than it would typically see for its other rulemakings.

### **Benefits**

California is the fifth largest economy in the world, and the transportation sector in 1999 accounted for almost 60 percent of its greenhouse gas emissions. Californians drove 730 million miles per day in light-duty vehicles in 2000, emitting more than 350,000 tons per day of greenhouse gases. Thus, a standard affecting greenhouse gas emissions from new light-duty vehicles has the potential over time to achieve significant emission reductions. If the current proposal is adopted, the staff estimates that the regulation will reduce climate change emissions by an estimated 85,900 CO<sub>2</sub> equivalent tons per day statewide in 2020 and by 143,300 CO<sub>2</sub> equivalent tons per day in 2030. This translates into a 17 percent overall reduction from projected levels in climate change emissions from the light duty fleet in 2020 and a 25 percent overall reduction in 2030.

The influence of California's GHG standard for automobiles may extend beyond its own borders. Because the California Air Resources Board was in operation before the formation of the Environmental Protection Agency under the Clean Air Act of 1970,

California has the authority to pass stronger air pollution standards than those set by the federal government. Other states may elect to adopt California's standards, but no other state may independently surpass the standards set by the federal government. Seven states have chosen California's standards over those of the federal government. Thus, the California law opens the possibility of these states adopting a light-duty vehicle GHG emissions standard.

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