

California Clean Cars Campaign

Global Warming Solutions for a Healthy California

www.calcleancars.org

California's Vehicle Global Warming Pollution Reduction Regulation: How it Works

American Lung Association
of California

Bluewater Network

California League of
Conservation Voters

CLCV Education Fund

California Public Interest
Research Group

Center for Energy Efficiency and
Renewable Technologies

Coalition for Clean Air

Environment California

Environmental Defense

Natural Resources
Defense Council

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League

Sierra Club

Steven and Michele Kirsch
Foundation

Union of Concerned Scientists

California's vehicle global warming standard is part of a long tradition of finding innovative solutions to air pollution problems. Passed in 2002, AB 1493 (Pavley, 2002) directed the California Air Resources Board (ARB) to adopt a regulation to reduce global warming emissions from passenger vehicles. The law stated that the regulation must result in the maximum feasible emissions reductions and be cost-effective to the consumer.

Based on the most thorough technical analysis of technologies available to reduce global warming emissions from passenger vehicles to date and a series of public workshops, ARB proposed regulations in the summer of 2004. The ARB voted unanimously to adopt the regulations on September 24, 2004. The rules will affect new cars sold in California, beginning with model year 2009.

The regulations will achieve a 23% reduction in global warming from new vehicles by 2012 and a 30% reduction in global warming emissions from new vehicles by 2016.

Off-the-Shelf Technology Options for Achieving Goals

The regulations do not require radical changes to vehicles, but instead rely on off-the-shelf technology options that are available today, and many more that are expected to be available in the near future. Automakers can use these technologies to improve the performance of engines, transmissions, drivetrains and air conditioning systems while cutting global warming emissions across their new car fleets.

The standards incorporate each of four main global warming emissions elements:

- Carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emissions resulting directly from operation of the vehicle
- CO₂ emissions resulting from operating the air conditioning system
- Refrigerant emissions from the air conditioning system due to either leakage, losses during recharging, or release from scrappage of the vehicle at end of life
- Upstream emissions associated with the production of the fuel used by the vehicle

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Eight-Year Phase-in Starting in 2009

The regulations will be phased-in over two periods, the near-term technologies phase in from 2009 – 2012 and the mid-term technologies phase in from 2013 – 2016.

Automakers can choose to implement any combination of technologies across their passenger vehicle fleet, as long as they achieve the prescribed CO₂-equivalent fleet-wide emissions reductions each year.

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The Standard is Consistent with Existing LEV II Regulations

The regulation is expressed in CO₂-equivalent emissions and incorporated into the state’s current LEV tailpipe emissions program. Like the criteria pollutant emission standards, there are separate, fleet-average standards, one for passenger cars and light trucks and SUVs and another for heavier trucks and SUVs.

The Regulations Will Pay for Themselves in Just a Few Years

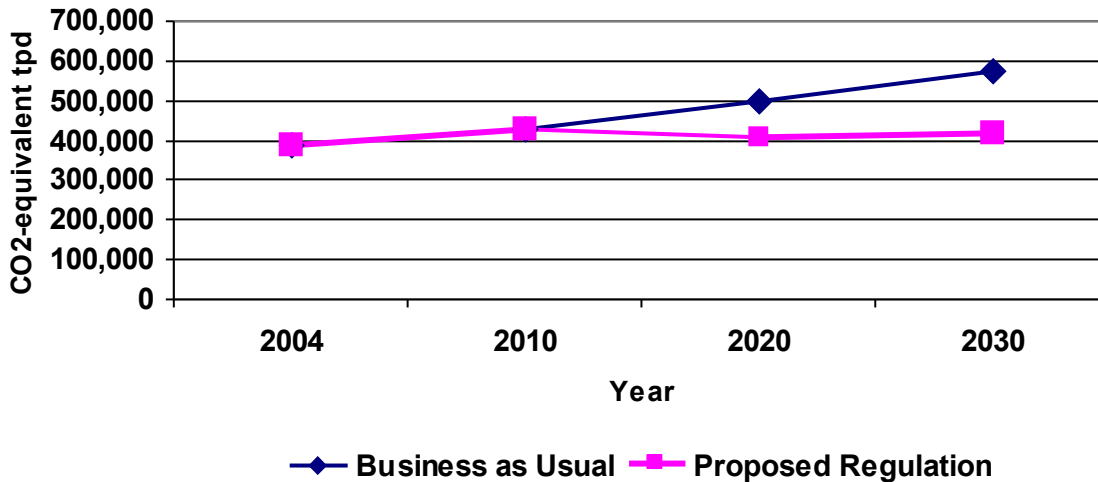
ARB analysis demonstrates that the potential increased cost of incorporating the technology will be offset by reduced operating costs. The table below lists the average projected vehicle price increase for the regulation, lifetime savings, and payback time.¹

Average Increase in Vehicle Price, Lifetime Savings and Payback Time

	Near-term (2012) ↓23% GHG	Mid-term (2016) ↓30% GHG
Increase in vehicle price	\$326	\$1,048
Lifetime savings	\$2,362	\$3,253
Payback time (years)	1.2	2.9

The Result: Lower Global Warming Emissions

California’s regulation results in a 18 percent overall reduction in total emissions (in tons) from the light-duty fleet in 2020 and a 27 percent overall reduction in 2030, relative to business as usual. While the regulations will slow the growth in global warming emissions, the expected growth in the number of vehicles on the road and the corresponding increase in miles traveled mean that further action will be needed to control emissions from passenger vehicles.



In addition to resulting in large reductions in emissions in California, the state’s regulations will likely lead to reductions nationwide as more states adopt California emission standards. As of today, ten states in addition to California have adopted these regulations. As a result, approximately one third of the new vehicles sold in the country will be meeting more stringent standards for global warming emissions starting in 2009.

May 2006

¹ These calculations assume a fuel price of \$2.30/gallon. At higher gas prices, the savings would be larger and the payback times shorter.