

## TITLE 13. CALIFORNIA AIR RESOURCES BOARD

### NOTICE OF PUBLIC HEARING TO CONSIDER ADOPTION OF REGULATIONS TO CONTROL GREENHOUSE GAS EMISSIONS FROM MOTOR VEHICLES

The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider adoption of regulations and incorporated test procedures, and amendment of other incorporated test procedures, to control greenhouse gas emissions from motor vehicles, pursuant to Assembly Bill (AB) 1493 (Pavley) (Stats. 2002, Ch. 200).

DATE: September 23, 2004

TIME: 9:00 a.m.

PLACE: Sheraton Gateway Hotel  
Los Angeles Airport  
6101 West Century Boulevard  
Los Angeles, California 90045

This item will be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., September 23, 2004, and may continue at 8:30 a.m., September 24, 2004. This item may not be considered until September 24, 2004. Please consult the agenda for the meeting, which will be available at least 10 days before September 23, 2004, to determine the day on which this item will be considered.

If you have a disability-related accommodation need, please go to <http://www.arb.ca.gov/html/ada/ada.htm> for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please go to <http://inside.arb.ca.gov/as/eeo/languageaccess.htm> or contact the Bilingual Coordinator at (916) 324-5049. TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

#### **INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW**

**Sections Affected**: Proposed adoption of section 1961.1, title 13, California Code of Regulations and incorporated test procedures, and the amendments to sections 1900, 1961 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" as last amended May 28, 2004.

#### **Background**:

The State of California has traditionally been a pioneer in efforts to reduce air pollution, dating back to 1963 when the California New Motor Vehicle Pollution Control Board

adopted the nation's first motor vehicle emission standards. California likewise has a long history of actions undertaken in response to the threat posed by climate change.

The earth's climate is changing because human activities are altering the chemical composition of the atmosphere through the buildup of greenhouse gases (GHGs), primarily carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and hydrofluorocarbons (HFC). The heat-trapping property of GHGs is undisputed. Although there is uncertainty about exactly how and when the Earth's climate will respond to increasing concentrations of GHGs, observations indicate that detectable changes are under way. There most likely are and will continue to be changes in temperature and precipitation, soil moisture, and sea level, all of which could have significant adverse effects on many ecological systems, as well as on human health and the economy.

Climate is a central factor in Californian life. It is at least partially responsible for the State's rapid population growth in the past 50 years, and largely responsible for the success of industries such as agriculture and tourism. The potential effects of climate change on California have been widely discussed from a variety of perspectives. The signs of a global warming trend continue to become more evident and much of the scientific debate is now focused on expected rates at which future changes will occur.

### **Need for Adoption**

Climate change threatens California's public health, water resources, agricultural industry, ecology, and economy. Direct health impacts due to climate change include extreme events, such as heat waves, droughts, increased fire frequency, and increased storm intensity resulting in flooding and landslides. Secondary or indirect health effects include damages to infrastructure causing, for example, sanitation and water treatment problems leading to an increase in water-borne infections. Air quality impacts such as increases in ground-level ozone due to higher temperatures may also cause secondary health impacts. Poor and immigrant populations (who often reside in urban areas where the heat island effect actually increases warming and the consequent effects of heat) are more vulnerable to climate change as they are often without adequate resources to control their personal environment with appliances such as air conditioners, or to seek medical attention. Thus, these communities are the first to experience negative climate change impacts like heat death and illness, respiratory illness, infectious disease, and economic and cultural displacement.

Water resources in drier climates, such as California, tend to be more sensitive to climate changes. Because evaporation is likely to increase in a warmer climate, it could result in lower river flows and lake levels, particularly in the summer. If stream flow and lake levels drop, groundwater also could be reduced. The seasonal pattern of runoff into California's reservoirs could be susceptible to climatic warming. Winter runoff most likely would increase, while spring and summer runoff would decrease. This shift could be problematic, because the existing reservoirs are not large enough to store the increased winter flows for release in the summer.

As California's water resource systems face challenges from climate change and variability, so too do the State's agricultural sectors. While agricultural production is potentially vulnerable to climate change risks associated with adverse water system impacts, this sector also faces other risks that come with increasingly unpredictable variations in both temperature and precipitation.

Climate change could also have an impact on many of California's species and ecosystems. Species differ significantly in their abilities to disperse and to become established in new locations with more suitable climates. With changes in climate, the extent of forested areas in California could also change. Hotter, drier weather could increase the frequency and intensity of wildfires, threatening both property and forests. Along the Sierra, drier conditions could reduce the range and productivity of conifer and oak forests. Farther north and along the northern coast, drier conditions could reduce growth of the Douglas fir and redwood forests. A significant increase in the extent of grasslands and chaparral throughout the State could result. These changes would affect the character of California forests and the activities that depend on them.

In 2002, recognizing that global warming would impose compelling and extraordinary impacts on California, the legislature adopted and the Governor signed Chapter 200, Statutes of 2002 (AB 1493, Pavley). Chapter 200 directs the Board to adopt regulations that achieve the maximum feasible and cost effective reduction of greenhouse gas emissions from motor vehicles.

### **Summary of Staff Proposal**

Vehicle climate change emissions comprise four main elements: (1) CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions resulting directly from operation of the vehicle, (2) CO<sub>2</sub> emissions resulting from operating the air conditioning (AC) system (indirect AC emissions), (3) 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 (direct AC emissions), and (4) upstream emissions associated with the production of the fuel used by the vehicle. The proposed climate change emission standard incorporates all of these elements.

The staff proposal recommends that one manufacturer fleet average emission standard be established for passenger cars and the lightest trucks (PC and LDT1), and a separate manufacturer fleet average emission standard be established for heavier trucks (LDT2). Staff proposes setting near-term standards, phased in from 2009 through 2012, and mid-term emission standards, phased in from 2013 through 2016. Staff has identified a number of cost-effective technologies that are available to reduce motor vehicle greenhouse gas emissions sufficient to allow compliance with the proposed standards. Manufacturers can choose the mix of technologies that they employ, provided that the sales-weighted average emissions from their fleet meet the standards noted below. The standards are expressed in terms of CO<sub>2</sub> equivalent grams per mile, which means that emissions of the various greenhouse gases are weighted to take into account their differing impact on climate change.

The proposed standards are as follows:

Year	Category		Standard CO <sub>2</sub> -eq g/mi	
2009	PC/LDT1	Near-term phase-in	323	
	LDT2		439	
2010	PC/LDT1		301	
	LDT2		420	
2011	PC/LDT1		267	
	LDT2		390	
2012	PC/LDT1		233	
	LDT2		361	
2013	PC/LDT1		Mid-term phase-in	227
	LDT2			355
2014	PC/LDT1	222		
	LDT2	350		
2015	PC/LDT1	213		
	LDT2	341		
2016	PC/LDT1	205		
	LDT2	332		

To maintain simplicity, staff proposes to use the upstream emissions for vehicles that use conventional fuels as a “baseline” against which to compare the relative merits of alternative fuel vehicles. Therefore, the emissions standards as shown above do not directly reflect upstream emissions. Rather, when certifying gasoline or diesel-fuel vehicles manufacturers would report only the “direct,” or “on vehicle” emissions. For alternative fuel vehicles, exhaust CO<sub>2</sub> emission values will be adjusted in order to compensate for the differences in upstream emissions. This approach simplifies the regulatory treatment of gasoline vehicles, while at the same time allowing for appropriate treatment of alternative fuel vehicles.

Early Credits. AB 1493 directs that emission reduction credits be granted for any reductions in greenhouse gas emissions achieved prior to the operative date of the regulations. ARB staff proposes that credit for early emission reductions should be available for model years 2000 through 2008, and that the baseline against which manufacturer emissions are measured should be the fully phased-in near term standards (the model year 2012 standards).

Alternative Compliance. AB 1493 requires that the regulations “provide flexibility, to the maximum extent feasible consistent with this section, in the means by which a person subject to the regulations ... may comply with the regulations. That flexibility shall include, but is not limited to, authorization for a person to use alternative methods of compliance with the regulations.” Thus the use of alternative compliance strategies must not undercut the primary purpose of the regulation, which is to achieve greenhouse gas reductions from motor vehicles. Accordingly, the proposed alternative compliance program is limited to the vehicles that are regulated through AB 1493 and their fuels. The major features of the staff proposal are:

- Projects must be located in California to be eligible as alternative methods of compliance.
- Only companies regulated by AB 1493 (automakers) will be permitted to apply for alternative compliance credits.
- Only those vehicles regulated under AB 1493 are eligible for alternative compliance credits. This includes model year 2009 and later passenger vehicles and light-duty trucks and other vehicles used for noncommercial personal transportation in California.
- Staff proposes that eligible projects be limited to those that achieve greenhouse gas reductions through documented increased use of alternative fuels in eligible vehicles.

### **COMPARABLE FEDERAL REGULATIONS**

There are no comparable federal regulations that control greenhouse gas emissions from motor vehicles.

Chapter 200, Statutes of 2002 (AB 1493, Pavley), which directs the Board to adopt these regulations, provides that “If the federal government adopts a standard regulating a greenhouse gas from new motor vehicles that the state board determines is in a substantially similar timeframe, and of equivalent or greater effectiveness as the regulations that would be adopted pursuant to this section, the state board may elect not to adopt a standard on any greenhouse gas included in the federal standard.” To date no such federal standards have been proposed.

### **AVAILABILITY OF DOCUMENTS AND CONTACT PERSONS**

The Board staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the Proposed Regulatory Action, which includes a summary of the economic and environmental impacts of the proposal. The report is entitled: Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles.

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on the ARB’s web site listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1<sup>st</sup> Floor, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing on September 23, 2004.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the ARB’s web site listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons, Ms. Eileen Tutt at (916) 445-8897 or Mr. Chuck Shulock at (916) 322-6964.

Further, the agency representative and designated back-up contact persons to whom nonsubstantive inquiries concerning the proposed administrative action may be directed are Artavia Edwards, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-6070, or Alexa Malik, Regulations Coordinator, (916) 322-4011. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

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This notice, the ISOR, and all subsequent regulatory documents, including the FSOR, when completed, are available on the ARB Internet site for this rulemaking at <http://www.arb.ca.gov/regact/grnhsgas/grnhsgas.htm>

### **COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED**

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action will create costs or savings to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other nondiscretionary savings to state or local agencies.

In general, the steps that manufacturers will need to take to comply with the regulatory standards are expected to lead to price increases for new light duty passenger vehicles. Many of the technological options that manufacturers will choose to comply with the regulation are also expected to reduce operating costs. The staff analysis concludes that over the lifecycle of the vehicle the reduction in operating costs will more than offset the increased initial cost, resulting in a net savings to vehicle owners.

There are about 420,000 State and local agency-owned vehicles in California. A typical agency-owned vehicle is driven an average of 12,500 miles each year. This usage rate is very similar to that of private consumers. The staff analysis indicates that for individual consumers, the increased initial cost is more than offset by operating cost savings over the life of the vehicle. Staff expects that the same would hold true for public agencies. Thus beginning in the 2009 model year state and local agencies

would need to budget for increased initial vehicle costs, but savings from the lowered operating costs of the proposed regulation would outweigh the higher price over the lifecycle of the vehicles.

Vehicles built to comply with the regulation are likely to be more efficient, which, as a consequence, means that new vehicles sold in 2009 and beyond will use less fuel. This will result in the future in reduced state and local government revenue from the excise tax and sales tax on motor vehicle fuel. This reduction will be partially offset by increased sales tax due to the increased cost of new vehicles.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on representative private persons or businesses. The regulation directly affects automakers worldwide that manufacture California-certified light duty vehicles. Staff estimates that for large manufacturers the regulation would result in average compliance costs in model year 2009 of about \$20 per vehicle for PC and LDT1 and about \$40 per vehicle for LDT2. Compliance costs would increase over time as the standards are phased in, rising to about \$630 per vehicle for PC and LDT1 and \$960 per vehicle for LDT2 in 2016. Compliance costs for intermediate and small manufacturers would vary depending on their specific circumstances.

The climate change regulation affects only light duty vehicles whose primary use is noncommercial personal transportation. Therefore, many vehicles that businesses use would not be covered under the proposed regulation. However, if the businesses purchase the same vehicles as consumers, they would be expected to pay higher prices for the vehicles but save on operating costs. As noted above, staff expects that reduced operating costs will more than outweigh the effect of the increase in price over the life cycle of the vehicle.

Due to higher initial vehicle costs and reduced demand for fuel, the proposed regulation may adversely affect some sectors of the economy. It is very likely, however, that savings from reduced vehicle operating costs would end up as expenditures for other goods and services. These expenditures would flow through the economy, causing expansion or creation of new businesses in several sectors. Staff's economic analysis shows that on balance the proposed regulation will have a positive impact on jobs and personal income in California.

The Executive Officer has made an initial determination that the proposed regulatory action will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action will affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action will affect small businesses.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the board or that has otherwise been identified and brought to the attention of the board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

### **SUBMITTAL OF COMMENTS**

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by e-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received **no later than 12:00 noon, September 22, 2004**, and addressed to the following:

Postal mail is to be sent to:

Clerk of the Board  
Air Resources Board  
1001 I Street, 23<sup>rd</sup> Floor  
Sacramento, California 95814

Electronic mail is to be sent to: [grnhsgas@listserv.arb.ca.gov](mailto:grnhsgas@listserv.arb.ca.gov) and received at the ARB **no later than 12:00 noon, September 22, 2004**.

Facsimile transmissions are to be transmitted to the Clerk of the Board at (916) 322-3928 and received at the ARB **no later than 12:00 noon, September 22, 2004**.

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. The board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

### **STATUTORY AUTHORITY AND REFERENCES**

This regulatory action is proposed under that authority granted in Health and Safety Code, sections 39500, 39600, 39601, 43013, 43018, 43018.5, 43101, 43104, and



43105. This action is proposed to implement, interpret and make specific sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204, and 43205.

## **HEARING PROCEDURES**

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with nonsubstantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted. Such changes could include, but are not limited to, modifications to the regulatory standards and upstream correction factors, the proposed phase-in schedule, the compliance requirement applied to different manufacturer size classifications (i.e. small, independent low volume, intermediate and large volume manufacturers), and the early credit and alternative compliance provisions.

The public may request a copy of the modified regulatory text from the ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1<sup>st</sup> Floor, Sacramento, California 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

/s/  
Catherine Witherspoon  
Executive Officer

Date:

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs see our Web –site at [www.arb.ca.gov](http://www.arb.ca.gov).*