



# Air Resources Board



**Linda S. Adams**  
Secretary for  
Environmental Protection

**Mary D. Nichols, Chairman**  
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Sacramento, California 95812 • [www.arb.ca.gov](http://www.arb.ca.gov)

**Arnold Schwarzenegger**  
Governor

Dear Sir or Madam:

The staff of the Air Resources Board (ARB) invites you to participate in a one day symposium workshop on April 21, 2008, at the California Environmental Protection Agency's headquarters. ARB and the Institute of Transportation Studies (ITS-Davis) at the University of California, Davis are hosting the symposium to examine vehicle greenhouse gas (GHG) emissions. Specifically, sessions will address what additional steps can be taken to address the shortfall between currently planned passenger vehicle GHG emission reduction programs and the GHG emission requirements in California's Global Warming Solutions Act of 2006 (AB 32).

The symposium promises to provide a stimulating discussion of innovative approaches to address these challenges, and I would like to take this opportunity to extend to you an invitation to this important event. Additional background information and a preliminary agenda can be found in this document. The event can also be referenced from the following web-links:

- [www.arb.ca.gov](http://www.arb.ca.gov)
- [www.its.ucdavis.edu/events/outreachevents/index.php](http://www.its.ucdavis.edu/events/outreachevents/index.php)

The workshop will be webcast. You may access the webcast from the following website: [www.calepa.ca.gov/broadcast/?BDO=1](http://www.calepa.ca.gov/broadcast/?BDO=1). If you have any questions about the workshop, please contact Paul Hughes at (626) 575-6977 or via email at [phughes@arb.ca.gov](mailto:phughes@arb.ca.gov).

Sincerely,

A handwritten signature in black ink that reads "Tom Cackette".

Tom Cackette,  
Chief Deputy Executive Officer

*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 website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

## Symposium Notice: *Reducing Greenhouse Gas Emissions from Passenger Vehicles “What’s Next?”*

The California Air Resources Board (ARB) and the Institute of Transportation Studies (ITS-Davis) at the University of California, Davis, invite you to attend a special symposium on how to achieve additional reductions in greenhouse gases from California passenger vehicles.

**April 21, 2008**  
 8:30 am – 5:00 pm  
 Byron Sher Auditorium  
 California EPA Headquarters Building  
 1001 I Street  
 Sacramento, California 95812

**Background:**

The Global Warming Solutions Act of 2006 (AB 32) requires reduction of greenhouse gas (GHG) emissions to 1990 levels by 2020. Transportation is the largest source of GHG emissions in California (38% in 2004). Thus California is taking major steps to reduce transportation emissions.

The first step is AB 1493 (the “Pavley” bill), which was signed into law in 2002. It directed ARB to adopt a regulation to achieve the maximum feasible and cost effective reduction of greenhouse gas emissions from new passenger vehicles. This regulation, adopted in 2004, will achieve substantial emission reductions, as indicated in the table below. ARB’s AB 32 Early Action Plan (2007) also calls for strengthening the current Pavley regulation for 2017 and beyond, and includes a commitment to develop a Low Carbon Fuel Standard (LCFS) to reduce the carbon emissions of on-road fuels. As indicated in the table below, these programs fall short of returning passenger vehicle emissions to 1990 levels.

**On-road Passenger Vehicle GHG Emissions -  
 Million Metric Tons (MMT) in CA, 2020 \***

Scenario	GHG (MMT)
Business as usual	<b>164</b>
<i>With current Pavley reg.</i>	<i>137</i>
<i>With Pavley 2<sup>1</sup></i>	<i>133</i>
<i>With Low Carbon Fuel Standard</i>	<i>120</i>
1990 Level (target)	<b>106</b>
<i>Shortfall w/ three policies above</i>	<i>14</i>
<i>Shortfall w/o Pavley reg.</i>	<i>22<sup>2</sup></i>

<sup>1</sup> Much larger benefits beyond 2020.

<sup>2</sup> Includes reductions due to federal 35 mpg standard which is not included in the BAU scenario

\* The values in this table are preliminary and may change as the ARB transportation inventory is improved, but are included here to provide context and to help frame the discussion of the Symposium.

The purpose of this symposium is to identify additional actions that can be taken prior to 2020 to further reduce greenhouse gas emissions from passenger vehicles.

ARB will consider additional actions in preparing a draft Scoping Plan. This Plan, as required by AB 32, lays out how California will achieve the 2020 target. The Plan may include new regulations, voluntary actions, and market instruments. The draft Plan will be released this summer and considered for adoption by ARB by the end of this year. Identifying additional actions is particularly important because implementation of the Pavley regulation, the largest source of GHG transportation emission reductions, remains uncertain due to legal challenges by the automotive industry, and the United States Environmental Protection Agency's (U.S. EPA) recent denial of a waiver. U.S. EPA's action is being challenged in the courts by California and a number of other states. AB 32 specifically states that if the Pavley regulation is not implemented, ARB must "implement alternative regulations to control mobile source greenhouse gas emissions to achieve equivalent or greater reductions."

**Symposium Agenda:**

A preliminary agenda is provided below. Guest presenters have been invited to provide background and context for each session. The audience will be offered the opportunity to make additional presentations and/or comments. We ask that each public commenter quantify the impact of their proposal on passenger vehicle GHG emissions by 2020. The symposium will be webcast.

## Agenda

### OPENING SESSION

8:30 – 8:45 **Dorene D'Adamo**, Board Member, ARB

8:45 – 9:00 **Dan Sperling**, Director, ITS-Davis and Board Member, ARB

### SESSION I VEHICLE GHG REDUCTION TECHNOLOGIES

9:00 – 10:30 **Current Technologies**

How can California's current greenhouse gas regulations be strengthened using conventional vehicle technologies? A panel will discuss how technologies used on today's vehicles can obtain additional GHG reductions beyond those already identified to comply with the Pavley regulation.

**Panel Moderator: Paul Hughes (ARB)**

A systems approach to LDV technologies – Sandy Stojkovski (Ricardo)  
Maximizing benefits from current technologies – K.G. Duleep (ICFI)  
Aerodynamics and weight reduction – Paul Sills (Lotus)  
Weight reduction and safety implications – John German (Honda)

10:30 – 10:45 Break

10:45 – 12:30 **Advanced Technologies**

How can the California's current greenhouse gas regulations be strengthened using emerging technologies? Advanced vehicle technologies have proliferated over the past few years. Hybrid electric vehicles are a reality and serious efforts are underway to commercialize plug-in hybrids. A panel will discuss the prospects for commercialization of these and other advanced technology vehicles, including diesel hybrids, battery electric and fuel cell vehicles, and the magnitude of possible GHG emission reductions by 2020.

**Panel Moderators: Steve Albu and Analisa Bevan (ARB)**

Direct shift gearbox transmissions and hybrids – Bill Kelley (BorgWarner)  
Hybrids and plug-in hybrids – Paul Boskovitch (Ricardo)  
Benefits of advanced diesel hybrids – Konstantin Neiss (Daimler)  
Fuel cell vehicles – Britta Gross (General Motors)  
Nissan Green Program 2010 – Jack Sayed (Nissan)

12:30 – 1:30 Lunch

## SESSION II PRICING MECHANISMS

1:30 – 3:00    **Feebates**

How effective are feebates in reducing GHG emissions? A study by the University of Michigan Transportation Research Institute (UMTRI) shows that an additional 9% GHG reduction from the light-duty fleet could be obtained by having a “feebate” in place along with the Pavley regulation. Other studies have explored the efficacy of feebates in the absence to regulatory emission limits. A panel will discuss these studies with respect to their effectiveness in reducing emissions in California.

***Panel Moderator: David Greene (ORNL)***

John German (Honda)

Brian Maas (California Motor Car Dealers Association)

Spencer Quong (Union of Concerned Scientists)

Walter McManus (University of Michigan)

3:00 – 3:15    Break

3:15 – 4:45    **Market Mechanisms**

This session will discuss other market mechanisms and pricing policies including vehicle fees proportional to their GHGs, and vehicles included in a cap and trade type program. A panel will provide a brief overview of these policies and their likely impacts.

***Moderator: Anthony Eggert (ARB)***

Michael Replogle (Environmental Defense)

John DeCicco (Environmental Defense)

Lee Schipper (UC Berkeley)

Ken Kurani (ITS-Davis)

4:45 – 5:00    **Concluding Discussion**

5:00            *Adjourn*