

State of California
AIR RESOURCES BOARD

Summary of Board Meeting
May 24 & 25, 2007

San Diego Marriott Del Mar
11966 El Camino Real
San Diego, California

MEMBERS PRESENT: Robert R. Sawyer, Ph.D., Chair
Sandra Berg
Dorene D'Adamo
Henry Gong, Jr., M.D.
Jerry Hill
Lydia H. Kennard
Ronald O. Loveridge
Barbara Riordan
Daniel Sperling

Agenda Item #

07-5-1: Report to the Board on a Health Update: Long-Term Exposure to Air Pollution and Incidence of Cardiovascular Events in Women

SUMMARY OF AGENDA ITEM:

The ARB staff provides the Board with regular updates on recent research findings on the health effects of air pollution. This month, staff presented a study that examines the effects from long-term exposure to fine particulate air pollution on the incidence of cardiovascular disease and death among postmenopausal women.

It is well known that particles are associated with adverse health impacts. Substantial epidemiologic and experimental evidence support the contribution of ambient particle pollution to cardiovascular disease. However, there is some evidence that the magnitude of the effects from fine particles may be gender specific with women being more susceptible. This study investigated 65,893 postmenopausal women without previous cardiovascular disease in 36 U.S. metropolitan areas from 1994 to 1998. Exposure to PM_{2.5} was determined by using the monitor located nearest to each woman's residence. This study found a 24%

increase in the risk of a cardiovascular event and a 76% increase in the risk of death from cardiovascular disease per 10 $\mu\text{g}/\text{m}^3$ increase of PM2.5. The result from this study adds to other studies presented in a previous health update (see the following link for the December 2005 presentation <ftp://ftp.arb.ca.gov/carbis/research/health/healthup/dec05.pdf>) showing that fine particulate air pollution may be of particular concern among postmenopausal women. ARB is currently funding a California specific women study titled, "Air Pollution and Cardiovascular Disease in the California Teachers Study Cohort" to help elucidating further the link between PM2.5 and premature mortality from cardiovascular disease in postmenopausal women within California.

Dr. Sawyer thanked staff, and mentioned that the findings presented indicate the need to continue the effort to reduce the impact of particulate matter on public health. He also mentioned that the Board would be taking up one such measure the next day. Board Member Dorene D'Adamo asked Ms. Garcia about the study's definition of long-term exposure. Ms. Garcia explained that in this study, the subjects were recruited in 1984 to 1985, and they were followed for an average of six years. Therefore, long-term exposure means the effects observed during that period of time.

Board Member Henry Gong commented on the public health implications of exposure to PM2.5, as well as all particle sizes, on the general population and for post-menopausal women. He also acknowledged the wide confidence interval for the increased risk of death shown in the figure on slide four. However, he mentioned that the 24 percent increase (for cardiovascular events) had a smaller confidence interval, which he thought gave us more confidence in the results. Dr. Gong added that perhaps for the past ten years cardiovascular disease in women has been under diagnosed and under treated. The consequence of this may be a higher rate of mortality.

ORAL TESTIMONY: None

FORMAL BOARD ACTION: None (Informational Item)

RESPONSIBLE DIVISION: Research Division

STAFF REPORT: No

07-5-4: Public Meeting to Consider the Draft Report "Planned Air Pollution Research, Fiscal Year 2007-2008"

SUMMARY OF AGENDA ITEM:

Staff presented the draft report entitled, "Planned Air Pollution Research, Fiscal Year 2007-2008," which contained research projects addressing areas of health and welfare effects, exposure assessment and technology advancement, and global climate change. The report described proposed research projects; some recommended for funding and others recommended if funding becomes available.

The Board acknowledged the resignation of Dr. Michael Lipsett from the Research Screening Committee. The Board issued a resolution to Dr. Lipsett thanking him for his years of service and commitment to the Board.

ORAL TESTIMONY:

J. Russell Lemon
Terry Wirth

FORMAL BOARD ACTION: The Board approved resolution number 07-17.

RESPONSIBLE DIVISION: Research Division

STAFF REPORT: Yes

07-5-3: Allocation of \$25 Million for Alternative Fuel Incentives

SUMMARY OF AGENDA ITEM:

Pursuant to Assembly Bill (AB) 1811, ARB is required to develop a joint plan with the California Energy Commission (CEC) to spend \$25 million to assist in the development of specific measures to reduce air pollution and greenhouse gas emissions. AB 1811 requires the funds to be encumbered by June 30, 2007 and fully expended by June 30, 2009.

There are a number of recent State policy directives that call for substantial expansion of the use and production of alternative fuels made from biomass and to reduce dependence on petroleum-based fuels. These include Executive Order S-06-06 – the

Governor's Executive Order on biofuels, the Bioenergy Action Plan for California, and the Climate Action Plan. The Alternative Fuels Incentives program was designed to be consistent with the state policies on alternative fuels and the provisions of AB 1811.

The Board approved recommendations on the proposed allocations of \$25 million for the Alternative Fuel Incentive Program. The Board approved about \$5.4 million to fund 10 projects that will support the use of E-85, biodiesel, electricity, and CNG primarily through new fueling stations or station upgrades. The largest grant in this category was a proposed award to the Sacramento Metropolitan Air Quality Management District of \$3.5 million to establish a grant program that would ultimately establish 20 E-85 public stations and 10 E-85 fleet stations in the Sacramento metropolitan area.

The second major category of funding is for the start-up of small biofuel production facilities. There were ten proposed grants representing \$6.0 million in this category, with six of the grants to develop biodiesel production facilities, two for converting landfill gas to liquefied natural gas, one for converting dairy waste to biofuel, and one for the production of methane from a dairy digester.

The third major category of funding is to encourage the use of plug-in hybrid and other alternative fuel vehicles. Seven projects were proposed for funding accounting for a total of \$5.0 million. In general, most of the funding is used for demonstrating and supporting plug-in hybrid vehicles in both light-duty and medium-duty applications.

The remaining categories were designed to fund a number of projects to support transit bus projects (\$2.0 million); support an alternative fuel vehicle incentive program (\$1.5 million); enhance consumer education and outreach (\$1.6 million); and conduct various research and testing projects to facilitate the use of alternative fuels (\$3.2 million). The Board approved recommendations to shift \$300,000 to support an alternative fuel vehicle incentive program.

Eleven stakeholders provided comments to the Board in support of the staff's proposed allocation of \$25 million for the Alternative Fuel Incentive Program. One stakeholder provided comments to the Board neutral to the staff's proposed allocation. Four stakeholders provided comments to the Board in opposition to some of the staff's proposed allocations of the \$25 million for the Alternative Fuel Incentive Program. The commenters encouraged ARB to fund their

respective projects that were not recommended by ARB and CEC staff.

ORAL TESTIMONY:

Scott Kessler, City of San Diego
Charles Botsford, Aerovironment
Kate Miller, Alameda Contra Costa Transit District
Glen Tepke, Metropolitan Transportation Commission
Sven Thesen, PG & E
Byron Bliss, Phoenix Motorcars
Tom Gage, AC Propulsion
Cynthia Verdugo-Peralta, SEETA
Irene Stillings, Center for Sustainable Energy
Dale Hill, Mobile Energy Solutions
Matt Miasato, South Coast AQMD
Mark Abramowitz, CA Hydrogen Business Council
Paul Scott, ISE
Richard Gillis, Energy Alternative Solutions, Inc.
John Williams, Ovonic Applied Technology Center
Don Zweifel, SoCal BioFuel, Co.

FORMAL BOARD ACTION:

Resolution 07-16 was presented to the Board. The Board approved this resolution.

RESPONSIBLE DIVISION: Stationary Source Division

STAFF REPORT: Staff Report on the Proposed Allocations of \$25 Million for the Alternative Fuel Incentive Program

07-5-2:

San Diego 2007 State Implementation Plan (SIP)

SUMMARY OF AGENDA ITEM:

The San Diego Air Basin is classified as a “basic” ozone nonattainment area for the national 8-hour ozone ambient air quality standard and is required to attain the standard by June 2009. In February 2007, the San Diego Air Pollution Control District released a plan demonstrating that existing local, State, and federal controls will bring the San Diego ozone nonattainment area into attainment by June 2009. The District’s Governing Board adopted the plan on May 23, 2007.

ARB staff reviewed the San Diego 2007 Ozone Plan and concurred that it demonstrates attainment of the national 8-hour ozone standard by June 2009.

ORAL TESTIMONY: None.

FORMAL BOARD ACTION:

The Board adopted Resolution 07-15, approving the 2007 San Diego 8-Hour Ozone Attainment Plan and directing the Executive Officer to submit the plan to the U.S. Environmental Protection Agency as a revision to the California SIP.

RESPONSIBLE DIVISION: Planning and Technical Support Division

STAFF REPORT: Yes.

07-5-5: Status Report on the California Air Resources Board's Zero Emission Vehicle Program

SUMMARY OF AGENDA ITEM:

At the 2003 Zero Emission Vehicle (ZEV) Program hearings, the Board adopted Resolution 03-4 directing staff to conduct a review of ZEV technologies and to advise the Board on the findings. As part of this review, the Board directed that an independent panel of experts (Panel) be established to report on the status of advanced technologies and their readiness for commercialization.

The ZEV program update included a presentation by Panel members of the status of various technologies being developed by industry to comply with the program. Staff then presented a review of the key findings of the Panel and their impact on the regulation, industry-wide compliance status, and the development of infrastructure necessary for vehicles in the ZEV program. ARB staff suggested several areas where changes are needed to strengthen the program based on the Panel's findings and data collected by staff.

In response to the presentation and comments from stakeholders, the Board directed that staff return to the Board with proposed modifications before the end of the 2007.

ORAL/WRITTEN TESTIMONY:

Alan Weverstad, General Motors
Robert Cassidy, Nissan Technical Center North American, Inc.
Fred Maloney, DaimlerChrysler
Robert Brown, Ford Motors Co.
Ben Knight, Honda
Karl-Heinz Ziwick, BMW of North America
Dr. Christopher Guzy, Ballard Power Systems
Steve Douglas, Alliance of Automobile Manufacturers
David Modisette, California Electric Transportation Coalition
Martin Eberhardt, Tesla Motors
Tom Gage, AC Propulsion
Alec Brooks
Chelsea Sexton, Plug-In America
William Korthof, Electric Auto Association
Eric Neandross, Gladstein Neandross & Associates
Charlie Botsford, AeroVironment
Dan Kaypaghian, Deutsche Bank
Danielle Fugere, Bluewater Network
Spencer Quong, Union of Concerned Scientist
Chung Liu, South Coast AQMD
Sven Thesen, PG&E
V. John White, Center for Electric Efficiency and Renewable technologies
Felex Kramer, CalCars
Daniel Davids
Daniel Elliott, Phoenix Motor Cars, Inc.
Kenneth Boshart, Boshart Engineering
J. Russell Lemon, Electric Vehicle Association of San Diego
Bill Hammons, Electric Vehicle Association of San Diego
Linda Nicholes, Plug In America
Richard Kelly
Tom Young
Colina Young
Doug Korthof, EV & Solar Power
Jay Friedland, EAACC
Ron Freund, EAA
Chris Paine, Director of "Who Killed the Electric Vehicle"
Evan House, Altairnano Technologies
Robert Pedrazza, Altairnano Technologies
Marc Geller, SFEAA
Heather Burnakoff, EVA South California
Dennis Hogan, Phoenix Motor Cars
Jeff Ulrich, Phoenix Motor Cars
Bonnie Holmes-Gen, ALA

Lisa Rosen, PIA
Thomas Oakes, Solar Hydrogen Co.
Dr. Kelloon Glinder, Palo Alto Medical Foundation
Thomas Oakes, Solar Hydrogen Co.
Bryon Bliss, Phoenix Motor Cars
Rick Remhard

FORMAL BOARD ACTION: The Board unanimously adopted Resolution 07-18, directing staff to return with proposed changes to the program by the end of 2007.

RESPONSIBLE DIVISION: Mobile Source Control Division

STAFF REPORT: Yes

07-5-6: Public Hearing to Consider Proposed Regulation for In-Use Off-Road Diesel Vehicles

SUMMARY OF AGENDA ITEM:

Existing off-road diesel vehicles are responsible for nearly a quarter of the diesel particulate matter (PM) emissions and nearly a fifth of the oxides of nitrogen (NOx) emissions from mobile diesel sources statewide. These emissions have significant adverse health impacts, including causing an estimated 1,100 premature deaths per year in California. Diesel PM is also a toxic air contaminant that contributes to ambient concentrations of fine particulate matter (PM2.5), while NOx emissions are of concern because they lead to the formation of ozone and PM2.5 which can lead to increased mortality.

Diesel PM emission reductions from the existing diesel off-road fleet are needed to fulfill ARB's October 2000 Diesel Risk Reduction Plan (Diesel RRP) goal of reducing, by 2020, California's diesel PM emissions and associated cancer risk by 85 percent from 2000 baseline levels. Significant reductions of PM and NOx emissions from existing off-road vehicles are also essential for attainment of the State and national ambient air quality standards for PM2.5 and ozone in those areas of the state that currently exceed those standards.

Although manufacturers of off-road vehicles will be required to meet strict aftertreatment-based emission standards for PM and NOx beginning in 2011, many off-road vehicles in use today were manufactured before the mid-1990s when the first emission

standards took effect. Since some off-road diesel vehicles can last as long as 30 years or more, controlling emissions from existing vehicles is essential.

The proposed regulation would provide significant PM and NOx emissions reductions from nearly 180,000 existing off-road diesel vehicles by requiring fleet owners to accelerate turnover to cleaner engines and install exhaust retrofits. The regulation would apply to any person, business, or government agency that owns or operates diesel-powered off-road vehicles in California (except agriculture) with engines with maximum power of 25 horsepower or greater. Examples of vehicles subject to the regulation are crawler tractors, loaders, skid steers, backhoes, forklifts, cranes, and airport ground support equipment. Industries such as construction, mining, landscaping, airlines, retail, wholesale, equipment rental, ski, oil and gas drilling, recycling, and utilities would be subject to the regulation.

The regulation would establish declining fleet average emission rate targets for PM and NOx for all off-road diesel vehicles with engines at or greater than 25 horsepower operating in the state, regardless of whether or not they are California-based. The regulation would require each fleet to meet the fleet average emission rate targets for PM each year or retrofit up to 20 percent of its total fleet horsepower with the highest level verified diesel emission control system. The regulation would also require large and medium fleets to meet the fleet average emission rate targets for NOx each year or turn over up to a certain percent of their horsepower (8 percent in early years, and 10 percent in later years). The regulation's provisions are strictest for the largest fleets and least strict for the smallest fleets owned by small businesses or municipalities.

71 witnesses testified at the Board meeting, 21 in support of the proposed regulation, 45 opposed, and five neutral. Health and environmental advocates testified in support of a strong rule, many citing concerns regarding asthma and the other health impacts from off-road diesel vehicle pollution. Staff of the South Coast Air Quality Management, the San Joaquin Valley Unified Air Pollution Control District, and the California Air Pollution Control Officers Association testified in support of the rule, but asked that ARB strengthen the rule in early years to get more early NOx reductions.

Those testifying in opposition to the rule cited the following concerns:

- Some claimed that compliance with the proposed regulation could be so expensive that it would put some construction companies out of business and lead to losses in good-paying construction jobs;
- Some asked that ARB set a maximum dollar per horsepower cost beyond which fleet owners would not have to take more compliance actions;
- Some said that retrofits are not always feasible and may not be safe, and that installations of one recently verified retrofit system have been poorly done;
- Some commented that there may not be an adequate supply of repowers and used vehicles to meet the requirements of the proposed regulation;
- Some suggested that ARB had underestimated the overall cost of the rule and the cost it would impose on fleets;
- Some claimed that the regulation would raise the cost of construction significantly, and mean less work is accomplished through the \$40 billion in infrastructure bonds passed by voters in 2006;
- Some complained that the rule is too complex with too many exemptions and flexibility provisions, and that having fleet average targets that change with horsepower distribution makes it difficult to plan for;
- Some commented that the regulation may negatively impact contractors' bonding capacity, thereby reducing their ability to bid for large projects; and
- Some asked for more credit for turnover of engines toward the PM requirements of the rule.

Many affected fleets and industry trade group representatives asked that the rule be delayed by five years.

Some commenters also suggested that ARB needs to streamline its verification process so that more off-road retrofits can be verified quickly to meet the needs of the proposed regulation.

ORAL TESTIMONY:

Shawn Veen, Representing Assembly Member Lori Saldana
 Alexander Greiner, M.D., Allergy & Asthma
 Dr. Michael Kelley
 R. Gregg Albright, CalTrans
 Jim Bourgart, CA Business, Transportation, Housing Agency
 Elaine Chang, South Coast Air Quality Management District
 Henry Hogo, South Coast Air Quality Management District
 Tom Jordan, San Joaquin Valley Air Pollution Control District

Doug Quetin, California Air Pollution Control Officers Association
Frank Caponi, Los Angeles County Sanitation District
Major Jeremy Jungreis, Department of Defense Installations,
California
John McClelland, American Rental Association
Tim Pohle, Air Transport Association
Scott Johnson, Red Mountain Machinery
James Thomas, Nabors Well Services, Co.
Richard McCann, M3 Consultants
Ralph Ayala, Ayala Boring, Inc.
John Terry, Teamsters Local 36
Mike Bobeczko, SUKUT Construction
Michael Lewis, Coalition to Build a Cleaner California
Dr. David Kopet
Bruce Wick, California Professional Association of Specialty
Contractors
John Nelson, Association of General Contractors/Engineering and
General Contractors Association
Don Anair, Union of Concerned Scientist
Mike Carcioppoco, Hawthorne CAT
Gordon Downs, Downs Equipment Rentals, Inc.
Brant Ambrose, Downs Equipment Rentals, Inc.
Joyce Downs, Downs Equipment Rentals, Inc.
Dr. Rasto Brezny, Manufacturers of Emission Controls Association
Ina Bendich, Excel Law Academy
Tiana Pittman, Excel Law Academy
Teona Hill, McClymonds High School
Mr. Davilla Ervin, Excel Law Academy
Jazmine Caldwell, Excel Law Academy
Margaret Gordon, West Oakland Environmental Indicators Project
Jill Rather, Rose Foundation for Communities & the Environment
and Garth Team
Bonnie Holmes-Gen, American Lung Association of California
Tara Hass, Engineering and Utility Contractors Association
Mike Shaw, Perry & Shaw, Inc.
Dave Porcher, Camarillo Engineering Inc.
Bill Haller, Sierra Club, California
Gary Rohman, ECCO Equipment
Rick McCourt, Sukut
Judi Quan, CA Alliance for Jobs
Ralph Potter, C I T Equipment Finance
Mike Buckantz, Justice & Assoc.
Andy Katz, Breathe California
Norman "Skip" Brown, Delta Construction Co., Inc.
Kathryn Phillips, Environmental Defense
Dave Sabaffi, Granite Construction

Don McIntosh, McCoy and Sons
Seth Hammond, Specialty Crane & Rigging
Bob Shepherd, Quinn Power System Caterpillar Dealer
Guy Prescott, Operating Engineers #3
Debbie Day, Engineering & General Contractor Association
Cash Benton, Southern California Contractors Association
Scott Erreca, Erreca's, Inc.
Kenneth Coat
Jon Cloud, J. Cloud, Inc.
Tom Koettters, Carde Pacific
Carey Haughy (Hoy), Blue Mountain Minerals
Tom Brickley, Brickley Environment
Jerry Dalrymple, McClaughlin Engineering
Taylor Rasmussen, CA Rasmussen, Inc.
Liza Bolanos
Scott Molloy, BIA, San Diego
Brent Tregaskis, Big Bear Mountain Resort
Claude Fiske, Steve P. Rados, Inc.
Barry Blanchard, TNT Grading Inc.
Jan Eric Jansson, Soil Retention
Steve Coker, T.C. Construction

FORMAL BOARD ACTION:

The Board voted to continue the hearing until ARB's regularly scheduled meeting on July 26, 2007, in Sacramento. At that meeting, the Board will resume its consideration of the proposed regulation and make its final decision. The Board also directed staff to work with industry to reconcile differences between staff's and industry's cost estimates for the proposed regulation and to meet with affected fleets to come to a common understanding of the expected costs of compliance.

RESPONSIBLE DIVISION: Mobile Source Control Division

STAFF REPORT: Yes