BEFORE THE

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

In the Matter of	)	
	)	
CALIFORNIA STATE MOTOR	)	Docket No.
VEHICLE POLLUTION CONTROL	)	EPA-HQ-OAR-2006-0173
STANDARDS; REQUEST FOR	)	
WAIVER OF FEDERAL PREEMPTION.	)	
	)	
	)	

PUBLIC HEARING

JOE SERNA JR. CAL/EPA HEADQUARTERS BUILDING

BYRON SHER AUDITORIUM - SECOND FLOOR

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SACRAMENTO, CALIFORNIA

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Reported by:
John Cota

APPEARANCES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY PANEL

Christopher Grundler, Presiding Officer

David Dickinson

Robert Doyle

Michael Horowitz

Karl J. Simon

Amy Zimpfer

PANEL TESTIMONY

Susan Kennedy, Chief of Staff, Office of the Governor, State of California

Jerry Brown, Attorney General, State of California

The Honorable Fabian Nu¤ez, Speaker, California Assembly

Fran Pavley, Former Assembly Member

Robert F. Sawyer, PhD, Board Chair, California Air Resources Board

Catherine Witherspoon, Executive Director, California Air Resources Board

Christine Kehoe, California State Senator

Ira Ruskin, California Assembly Member

Heather Fargo, Mayor, City of Sacramento

Rocky Anderson, Mayor, City of Salt Lake City

Christopher Cabaldon, Mayor, City of West Sacramento

Steven P. Douglas, Alliance of Automobile Manufacturers

Andrew Clubok, Alliance of Automobile Manufacturers

Michael J. Murray, Sempra Energy

PANEL TESTIMONY

John Busterud, Pacific Gas & Electric Company

Bob Epstein, PhD, Environmental Entrepreneurs

Mary Nichols, University of California, Los Angeles, Institute of the Environment

Henry Hogo, South Coast Air Quality Management District

Henry Hilken, Bay Area Air Quality Management District

Barbara Lee, Northern Sonoma County Air Pollution Control District

Mel Zeldin, California Air Pollution Control Officers Association

Vandana Bali, Department of the Environment, City and County of San Francisco

Henry T. Perea, Council President, City of Fresno and Governing Board Member, San Joaquin Valley Air Pollution Control District

Brigette Tollstrup, Sacramento Metropolitan Air Quality Management District

Ron Curry, Secretary, New Mexico Environment Department

Erik Skelton, North East States for Coordinated Air Use Management

Larry Greene, National Association of Clean Air Agencies and Sacramento Metropolitan Air Quality Management District

Dr. Peter H. Gleick, Pacific Institute

Dr. Roger Bales, University of California, Merced

Dr. Margaret Torn, Lawrence Berkeley National Laboratory

Dr. Mike Kleeman, University of California, Davis

Dr. Louise Jackson, University of California, Davis

Dr. Larry Dale, Lawrence Berkeley National Laboratory

PANEL TESTIMONY

Russell Long, Bluewater Network & Friends of the Earth

Tim Carmichael, Coalition for Clean Air

Patricia Monahan, Union of Concerned Scientists

Roland Hwang, Natural Resources Defense Council

Derek Walker, Environmental Defense

Michael Brune, Rainforest Action Network

Bonnie Holmes-Gen, American Lung Association of California

Donna Dorsey Fox, California Nurses Association

Alex Kelter, MD, Volunteer, American Lung Association

Kris Rosa, Silicon Valley Leadership Group

Michael D. Jackson, TIAX LLC

Bob Roberts, California Ski Industry Association

Carl Zichella, Sierra Club

Jason Barbose, Environment California Research & Policy Center

Christopher B. Busch, PhD, Union of Concerned Scientists

Mike Somers, Arizona PIRG Education Fund

Buddy Burke, Republicans for Environmental Protection

Matt Vander Sluis, Planning and Conservation League

Thomas Cackette, Chief Deputy Executive Officer, California Air Resources Board

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PROCEEDINGS

ASSOCIATE DIRECTOR ZIMPFER: Good morning. My name is Amy Zimpfer, I am an associate director of the US EPA's office in San Francisco, the Region 9 Southwestern US EPA, and that covers Arizona, California, Nevada, Hawaii and the Pacific Islands.

It is my honor today to welcome you all to the hearing and to welcome our colleagues from our headquarters Office of Transportation and Air Quality.

Before we get started I do want to say thank you very much to the Air Resources Board and to Cal/EPA for providing the hearing room today and all of the tremendous logistical support. It certainly makes our job easier to have the support of our state colleagues.

So without further adieu I would like to introduce Christopher Grundler. He is the Deputy Director of the Office of Transportation and Air Quality, he works out of Ann Arbor. And with him today are a number of folks from our headquarters office in Washington DC. And we are very much looking forward to all the testimony and we will be taking it all into consideration as we deliberate on the waiver request. Chris.

PRESIDING OFFICER GRUNDLER: Let me add my welcome to all of you to this public hearing on the California Air Resources Board's request for a waiver of preemption for its

greenhouse gas emissions regulations.

As Amy mentioned I am Chris Grundler, I will be the presiding officer for today's hearing.

I want to just express at the outset how much we appreciate very much all of you taking the time out of your days to present testimony today. I know many of you have traveled many miles to participate today. My staff and I certainly recognize the significance of this request for the state of California. In fact it has been many, many years since we have actually convened a waiver hearing in the state of California and that speaks to the significance that we attach to this request.

We also recognize the importance of this proceeding and this request by other states, by the general public, by the environmental community, by the industry. This is certainly a very serious undertaking and so I am very pleased that we have such a wide representation from the public today.

Joining me on the panel today are to my right, Karl Simon. He is our Executive Division Director of the organization that will be evaluating all the information that we are gathering through these proceedings. To my left is David Dickinson, an Attorney-Advisor in Karl's division, and Michael Horowitz from our Office of General Counsel.

Today's hearing allows for interested parties to

provide comments in person. However, there is also an opportunity for anyone to send in additional written comments. The written comment period will close on June 15. Although I do want to add that we have a request for an extension of this comment period and that extension is currently still under review.

We have a list of people who have signed up previously to provide testimony today. That list is outside at the table. If any other members of the audience who have not signed up and do wish to provide testimony, I urge you to go and add your name to that list. We are prepared to stay here as long as it takes so that everyone has an opportunity to provide testimony.

Let me just describe how we will hold today's hearing. As noted in our April 30, 2007 and May 10, 2007 Federal Register Notices announcing this hearing we are being guided by Section 209(b) of the Clean Air Act and we are seeking comments on the questions raised in he April 30, 2007 Notice.

We are conducting this hearing informally and on the record. As presiding officer I am authorized to strike from the record statements which are deemed to be irrelevant or repetitious and to enforce reasonable limits on the duration of statements of any witnesses.

Witnesses must state their name and affiliation

prior to making their statement. And when a witness has finished his or her presentation, if you are using slides or other materials, please provide them to our court reporter here today. And witnesses are reminded that any false statements or false responses to questions may be a violation of law.

Finally, a court reporter is recording these proceedings. If you would like a transcript of today's public hearing please see the court reporter to make those arrangements. We will place a copy of the transcript from today's hearing in the docket for the rulemaking. Also California is webcasting today's proceedings and I'll be reminding everyone periodically of that.

With that I would like to introduce our first panel of witnesses. From the State of California they are Susan Kennedy, Chief of Staff to Governor Schwarzenegger; Attorney General Jerry Brown; the Honorable Fabian Nu¤ez, Speaker from the California Assembly; Former Assembly Member Fran Pavley; and representatives from the California Air Resources Board, Dr. Bob Sawyer, the Chair, and Catherine Witherspoon, Executive Officer.

Welcome, everybody. Ms. Kennedy, please proceed.

CHIEF OF STAFF KENNEDY: Thank you very much. On behalf of Governor Schwarzenegger I want to thank you for coming to California to conduct this hearing today.

We believe the EPA is legally obligated to grant our request under the Clean Air Act and the agency must take action without further delay. It's the right thing to do, it's urgent and it's the law.

EPA's obligation to approve California's waiver is unambiguous and specified in the Clean Air Act itself.

From the inception of the Clean Air Act congressional authors recognized California's pioneering leadership on environmental issues. In fact, Congress specifically anticipated that California's standards would be more stringent than federal standards.

When Congress adopted the 1977 amendments it expressly ratified and strengthened California's waiver provision, affirming the underlying intent of that provision which was, and I quote, to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.

This provision of one of our nation's most environmental protection laws sets in stone the central tenet of our constitutional system, that when the federal government fails to act the right of states to lead is unequivocal.

Twelve states, including California, have already adopted tailpipe emissions standards that would cut greenhouse gas emissions from cars, light trucks and sport

utility vehicles by almost 400 million metric tons by the year 2020, the equivalent of taking 74 million cars off the road for an entire year.

Seven other states have already committed or are considering to enacting the same standards upon approval of California's waiver by the EPA.

That represents 143 million American citizens, or nearly half of the US population, taking matters into their own hands.

Yet for 16 months the EPA has failed to act on our waiver.

With all due respect: The federal government has failed to lead. For the past 16 months it has refused to follow and it is time now to get out of the way.

The Governor, the Legislature and the people of California recognize the profound importance of addressing climate change and the growing threat that it poses to our environment and our economy.

The threat to our public health and safety from climate change is now omnipresent: Scientists predict California will lose up to 40 percent of its snowpack over the next few decades, some say much higher, the primary source of drinking water for two-thirds of Californians. This is not theoretical science, it is already happening.

Higher snow lines and early runoff are causing

flood flows in our rivers earlier in the year that are now beginning to collide with more powerful winter storms, threatening our levees and flood barriers that were never designed for this level of battering.

The heat wave last year that killed 150 people is predicted to be just the beginning of the hottest and driest years on record in the Western United States.

Continued drought in the West threatens not only our water supply but our energy supplies from hydroelectricity.

Warmer temperatures lead to concentrations of ground level ozone, increasing smog and pollution that cause asthma and heart disease. For which, I might add, the federal government is threatening to cut off federal transportation dollars for failing to meet air quality improvement goals.

There is no question that the need to address climate change is compelling and extraordinary.

That is why the Governor signed historic legislation authored by Assembly Speaker Fabian Nu¤ez to cap carbon emissions and roll back California's greenhouse gas emissions to 1990 levels by 2020 and another 80 percent below 1990 levels by 2050.

But with 40 percent of greenhouse gas emissions coming from the transportation sector, the only way to meet

these targets is to address auto emissions. And to do so requires the EPA to approve our request for a waiver that is the subject of today's hearing.

More than 40 similar waivers have been approved over the past three decades.

In delaying this latest request as long as it has the federal government is blocking the will of 100 million Americans who are not willing to wait any longer for the federal government to act.

California supports a strong federal program that aggressively reduces greenhouse gas emissions from motor vehicles, and we will work with the EPA when it takes on this task and the tasks announced by the White House. But the EPA must grant California's waiver. There is simply no legal justification to do anything else. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Ms. Kennedy.

Mr. Attorney General.

ATTORNEY GENERAL BROWN: Thank you. I want to address just a couple of very specific points. First of all the automobile companies and the opponents of what we are trying to do here are saying that EPCA, the Energy Policy Conservation Act, preempts California from this waiver request. I want to address myself to that.

That is completely false and has no justification in the law. EPCA includes by it's very terms the provision that says in setting fuel efficiency standards, the CAFE standards, the Secretary of Transportation must consider other standards of government. Other standards of government. If a waiver is granted by EPA a standard of government is the emission standard that we are asking to be validated in this proceeding.

So it is very clear that EPCA envisioned the actions under the Clean Air Act. The Clean Air Act envisions California taking their own separate program and putting it under effect. The argument that EPCA preempts California cannot be true because, number one, the language envisions a consideration of the California standard, any government standard, and preemption destroys the standard, eliminates it, it becomes a nullity. So just by the text alone that argument has to fail.

Secondly, in the case of Massachusetts v. EPA the Supreme Court expressly held that the two statutes, the Clean Air Act and EPCA, need to be harmonized. You harmonize them not by destroying one but by giving both their full operation.

The Clean Air Act aims at reducing pollutants, emissions of substances that cause harm. That cannot be stopped by EPCA. The fact that fuel efficiency is a

byproduct or a consequence does not negate the authority under the Clean Air Act.

Under EPCA there is a balancing and EPCA can be fully realized and implemented by weighing and balancing many factors, one of which is the Clean Air Act standards themselves. So the Supreme Court itself and the text both call for a harmonization and giving full effect to the Clean Air Act. And in this case California has its own piece of that Clean Air Act under the law.

Now the second point I want to talk about is the waiver itself. Expressly in legislative history the word is narrow grounds for EPA to deny the waiver. It has to be very extraordinary. There has been talk about, are there really compelling and extraordinary conditions. The auto companies want to say, well, California is no different than the rest of the country, of the world. That issue has already been decided. The fact that similar conditions exist elsewhere does not negate California's authority under the law.

If you go back to the legislative history I think it's pretty interesting. Right in the legislative history itself it made this quote: "Senator Murphy convinced the committee that California's unique problems and pioneering efforts justified a waiver." Now Senator Murphy was the California senator. He got into a legislative battle with

John Dingell. Dingell was trying to restrict the ability of EPA to grant a waiver. Senator Murphy wanted the broadest interpretation to make it as easy as possible for California to get a waiver. He won. It says so right here.

Two points have to be, should be acknowledged. One is the unique conditions in California, compelling conditions. The geography, the topology, the mountain ranges in Los Angeles that build up smog, the concentration of vehicles, the number of vehicles. All those conditions exist today.

The other aspect, number two because there's two prongs here, pioneering efforts. California is the pioneer, was and is. Legislative history talks about California leading the way, setting the pace and thereby helping the rest of the nation. To me it is impossible to conclude that a waiver can be denied under the legislative history, the Supreme Court rulings and EPA's own decisions.

I want to make one final point. It's kind of a subtle one, I've had a bit of trouble grasping it myself. The compelling and extraordinary condition does not refer to the particular standard. It doesn't refer to California's emission greenhouse gas standards that are at issue in this waiver.

In the key decision in 1984 on diesel particulates Ruckelshaus, the administrator, said very clearly what is

required to be compelling and unique are the conditions in California that once found justify the program that is different and separate and more stringent. So it is not --

The findings here are not about the specific greenhouse gas standards, it's rather, does California continue in the state of its unique topology, its number of cars, their concentration. Is that true? And it certainly is true. Is California still in the pioneering, the extraordinary role of pioneering new standards? Yes. If you say yes to both of those then you've satisfied the compelling and extraordinary circumstance. And of course the idea that this affects other people doesn't in any way negate or undermine that it's affecting California.

One final point in support of this. In 1977, two years after EPCA was passed, Congress added the provision that other states could follow California's law, California's standard. Once you grant that waiver because of the continuing, compelling and extraordinary circumstance then not only California can impose the regulation but all the other states. Which in this case are already 11 signed up. Those 11 states don't have to show you any extraordinary, any compelling need. They don't have to show you anything, it's automatic.

And that really goes to the point that what is at issue in the law here is the unique historic situation in

California. Which once established continues to justify the waiver unless there is some radical change in circumstances, which hasn't happened. It's just continuing exacerbation of the problem. And even to get specific, global warming will make worse all the criteria of pollutants. So on every ground California is justified. And as Susan Kennedy has said, this is a legally required waiver.

And I would just end by general statement. We have been told in the press that the national government will stand alone and reject all the other nations, the G8 countries, all the major developed countries of the world gathered in Germany next week. America will stand alone fighting any timetable or target.

I think in that context it is particularly compelling, if not extraordinary, for the EPA following the law, not the politics, not the person who appoints the administrator, but rather the law serving the people, to allow California and the 11 other states and many more to follow actually to join the other nations of the G8 countries and take a stand for timetables and targets.

It's well thought out, it's scientifically and technologically based. This is a great opportunity for the EPA to reinvigorate its role as a champion in the protection of our environment. Thank you.

PANELIST DICKINSON: Attorney General Jerry Brown,

appreciate your testimony today. You did take part of it to discuss the EPCA statute and I invite you or your Air Resources Board colleagues to, in your written comments perhaps to provide a clarification as to whether you think EPCA is relevant to EPA's waiver review or not. And then if it were relevant how that would play out.

ATTORNEY GENERAL BROWN: Well I have to say, again, that it is not relevant. Number one because that is a judicial decision. And by the precedence of EPA you are not allowed to consider issues like preemption from another statute. You can only consider your precedence.

Number two, in fact it is not preempted because EPCA itself envisions taking into account regulations that are standards of the government. If you grant the waiver then these are standards of the government. Therefore by the very language of the 1975 EPCA Act you have to take it into consideration, not ignore it, which preemption would require.

I'll be glad to commit that to writing but to me it's crystal clear.

PANELIST DICKINSON: Thank you.

PRESIDING OFFICER GRUNDLER: Thank you for your testimony, Mr. Brown.

Mr. Speaker, welcome.

ASSEMBLY SPEAKER NU¥EZ: Thank you very much,

Mr. Grundler and ladies and gentlemen of the committee. We want to thank you first of all for making the pilgrimage to Sacramento to consider this waiver.

As you know climate change that has been brought upon by manmade emissions of greenhouse gases has become the environmental crisis of our time. Climate change is a very serious threat to our sustainability. And as you know, here in California you have the opportunity to help make our state take a vital step in showing this crisis and combatting this crisis by granting us a waiver that would allow for tailpipe emission standards of global warming causing greenhouse gases to be stopped.

A little background on this issue. In 2002 Assembly Member Fran Pavley, who sits to my right, authored Assembly Bill 1493. Landmark legislation that requires tailpipe emission standards to reduce greenhouse gas emissions.

Last year I joined Ms. Pavley in authoring Assembly Bill 32, the Global Warming Solutions Act of 2006. Yet another California first, which requires California to reduce greenhouse gas emissions by 25 percent by the year 2020. With the transportation sector as California's largest emitter of greenhouse gases reductions in this sector are absolutely critical. AB 32 will not succeed without major reductions from the transportation sector.

The regulations being considered here at today's hearing will achieve about 17 percent of the reductions we want to achieve through Assembly Bill 32. In order to meet our goal and address the leading environmental issue facing our state and our country today California needs to be granted a waiver by the United States Environmental Protection Agency. A waiver, I might add, that was requested 18 months ago. We think that it's time for the Environmental Protection Agency to act to allow California to move forward.

I know that the Environmental Protection Agency has granted many requests. In fact in California alone we have seen over 50 requests that have been granted in the last four decades. Each time the EPA has found that California has met the requirements under the Clean Air Act. We believe there is no basis for the EPA to treat this request any differently.

The standards we are proposing are workable with technology already in the market, which will save vehicle owners in lower maintenance and operating costs over the lifetime of the vehicle. The standards give auto makers the flexibility to apply any technology they choose to reduce the vehicles' emissions of greenhouse gases, including production of vehicles that use lower carbon fuels. The standards were developed over four years. Four years

through careful and measured technical review, and I might add, vast public input.

We here in California are working very hard to protect our children from a changing environment. The Bush Administration has a choice. Will it support that right that the Clean Air Act gives us or will it continue to slow or stop any real action to global warming.

On December 1, 2005 the Air Resources Board officially requested this waiver. It is now 18 months almost to the day. The later -- We are finally getting our chance here today to show the Board the national base of support that we have for California's waiver. And we would respectfully ask you on behalf, not only of California, but the mission of the Environmental Protection Agency, which in its very core by its own definition is to protect the environment. We want to ask for your help to help us here in California protect our environment. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Speaker.

Ms. Pavley, welcome.

FORMER ASSEMBLY MEMBER PAVLEY: Good morning. Thank you very much for coming to California. A few of you I saw just last week in Washington DC. It's a pleasure for me to be here today as the author of this bill and sitting alongside Speaker Nu¤ez as the author of AB 32 because this

is a very important component in our broader, more comprehensive policy to do our fair share here in California to reduce greenhouse gas emissions.

Forty-one percent of California's greenhouse gas emissions come from automobiles and light duty trucks. We have 25 million cars and light duty trucks on the road in California today. It's important that we attack this very critical problem.

The Clean Air Act, as you know, allows California to adopt more stringent air emissions standards and over the last three to four decades, as Speaker Nuªez said, the EPA has approved nearly 50 waivers in a row, none denied.

The arguments I heard last week in Washington DC and just a little while ago at a press conference in the room adjacent to this by the automobile manufacturers sounded vaguely familiar to me, not only through our hearing processes here in California but the same arguments that came up when California passed laws relating to unleaded gas that the EPA approved, laws relating to catalytic converters, which the EPA approved through the waiver process, and most recently a law I authored which allowed single occupant hybrid drivers to access HOV lanes, also opposed in California by the automobile manufacturing associations.

The recent Supreme Court decision said that the

Environmental Protection Agency indeed has the authority under the Clean Air Act to regulate greenhouse gas emissions as air pollutants.

We have demonstrated unequivocally, compelling and extraordinary reasons for this waiver. Our topography, dwindling snowpack, the availability and supply to our agricultural and urban water users.

In particular I am very concerned about air quality impacts. Warmer temperatures will make ozone levels worse, a prime ingredient of smog. We have asthma and respiratory problems in the LA area and a growing number in our Central Valley with children.

We're having continuous problems now with weather extremes, particularly in relation to wildfires. Where our wildfire season is not just September and October anymore but is year-round and that has health implications in particulate matter affecting respiratory problems, fire fighters as well as our citizens here in California.

There is a long list of compelling and extraordinary reasons to grant this, also in regards to our 1100 miles of coastline and sea level rise. And one of our largest insurance carriers, Allstate, is talking about not granting any more new homeowner policies because of weather extremes, weather patterns and rising costs associated with climate change.

One of the arguments made by the automobile manufacturers last week in Washington DC is, what's the point, California is just one state, one state out of 50. Well they brought that argument to our attention when we passed the bill back in 2001 and 2002.

Now as you know California under the Clean Air Act can pass more stringent air emission standards and other states have two options and only two options only. Adopt California standards or federal government standards. California standards only if they are more stringent than the federal government standards. Well that's not really a patchwork quilt, that's two choices.

Well 11 other states have now adopted California clean car standards. The governors of New Mexico and Arizona have indicated through executive order they will also add to this. We know, like in the case of unleaded gas or catalytic convertors that other states across the country will soon become places where cleaner, more efficient cars will be sold. That's the pattern that's been demonstrated time and time again.

And I have also seen on a firsthand level that when California sets a standard, whether it is unleaded gas or catalytic converters, it is not just limited here, it spreads to other states and indeed other countries.

Several years ago I went to Canada and they have

adopted a voluntary memorandum of understanding with the Canadian automobile manufacturers. Interestingly enough the same automobile manufacturers that are represented here in this room, Ford, GM and Chrysler, et cetera, and the international alliance. They adopted a voluntary MOU standard to reduce tailpipe emissions through almost the identical strategies that our Air Resources Board envisioned when they adopted the regulations required in 1493.

That's cost-effective, maximum feasible, technologies that are readily available on cars today. Canada has done that. They just issued and they sent to me just yesterday a regulatory framework for air emissions and they talk about there's currently a memorandum of understanding between the auto industry and the government with a target of 5.3 megatons of greenhouse gas emission reductions by 2010.

We're talking about the automobile market in the United States now with the 11 states plus Arizona and New Mexico plus Canada. We're tipping over 40 percent of all the automobiles sold. That is not a patchwork quilt, that is responsible legislation in response to the most threatening global and economic problem of the 21st century. I ask for your waiver. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much, Ms. Pavley.

Dr. Sawyer from the Air Resources Board, nice to see you again.

AIR RESOURCES BOARD CHAIR SAWYER: Thank you.

PRESIDING OFFICER GRUNDLER: Please proceed.

AIR RESOURCES BOARD CHAIR SAWYER: Thank you and welcome to California.

PRESIDING OFFICER GRUNDLER: It's great to be here.

AIR RESOURCES BOARD CHAIR SAWYER: Our presentation will be much shorter than last week's in Washington DC. We will focus on issues that were of interest to last week's hearing panel. We will also attempt to bring some clarity to the rather vague issues raised by the single automotive manufacturer representative who last week presented industry concerns to the panel and audience.

This week Catherine Witherspoon, the Air Resources Board Executive Officer will make the primary presentation. She is joined by Tom Cackette, Chief Deputy Executive Officer, Steve Albu and Paul Hughes of our Mobile Source Control Division, Bart Croes, chief of our Research Division, Reza Mahdavi of our Economics Branch, and Tom Jennings and Aron Livingston of our Legal Office. Catherine.

AIR RESOURCES BOARD EXECUTIVE OFFICER WITHERSPOON: Thank you Dr. Sawyer, and good morning.

I am going to start with a very brief review of the motor vehicle greenhouse gas emission standards that are the subject of this proceeding. While you may hear again today from manufacturers that this is a CO2-only regulation, the simple fact is that the regulations control all of the pollutants shown here and provide substantial credit to those manufacturers reducing highly potent refrigerant emissions and to those introducing alternatively-fueled vehicles.

As in our EPA-approved LEV II regulations, the greenhouse gas regulations establish two categories, one for passenger cars and smaller light trucks, another for larger trucks, SUVs and medium-duty vehicles. Pure commercial work trucks are exempt.

We used the results of a technical study initiated by the Northeast States Center for a Clean Air Future and applied staff's expertise and engineering judgment to arrive at packages of potential technologies that could be applied in the 2009 to 2016 time period. The standards flowed from that projection, setting increasingly stringent fleet-average greenhouse gas emissions standards in grams per mile.

As you can see the near-term standards start with the 2009 model year and achieve a 22 percent reduction in 2012. The mid-term standards start with the 2013 model year

and will achieve a 30 percent reduction in 2016.

The regulation also provides flexibility, including a delay of regulatory requirements until 2016 for small and intermediate volume manufacturers.

Now just to remind everyone of the three key principles in waiver proceedings. The first is that EPA's review is limited in scope to three issues: protectiveness, California conditions justifying our motor vehicle emissions standards, and consistency with the technological feasibility and lead time provisions in the Clean Air Act.

Second, and contrary to what the manufacturers' representative asserted last week, the burden is on waiver opponents to demonstrate why California's waiver should not be granted; the regulations come to you with a presumption of regularity. This burden will be difficult indeed, and we think insurmountable, though to date in this proceeding we and the public have had little opportunity to evaluate the waiver opponents' arguments and evidence, despite the burden that they have. Finally, waiver law and history counsels EPA to give substantial deference to California's judgments.

This slide covers the finding regarding the protectiveness determination the Board made in its September 2004 Resolution approving these regulations. The Board reached its determination in a public process, and easily found that the standards were more protective in the

aggregate than federal standards because our program remains more protective for other pollutants and also addresses greenhouse gases.

Last week the auto manufacturers' representative hinted that California was obligated to do more. That is, to compare our greenhouse gas standards to other federal standards not adopted by EPA. The text of Section 209(b) is not amenable to such contortions. It states that we must determine that our standards will be, in the aggregate, at least as protective of public health and welfare as applicable federal standards. Clearly this simple language is no license for EPA to look beyond its own, and in this case non-existent, standards.

EPA has never required California to compare its standards to any other standard other than EPA's own, and for good reason. The repetition of the phrase applicable standards in Section 209(b) clearly applies in each case to just one set of federal standards, EPA's. One reason for the protectiveness requirement is that once the waiver is granted, compliance with California's standards is treated as compliance with EPA's standards, something that would be inappropriate if EPA standards were more protective. Any vehicle standards of other federal agencies will apply alongside California's.

Even if EPA unwisely chooses to go beyond the text

of 209(b) to consider standards like those under EPCA or CAFE, it's clear that our standards were more protective at adoption and remain so today. As Mr. Doniger pointed out last week, it is likely our standards will remain more protective into the future given potential federal rulemaking timetables.

Obviously, if our standards weren't more protective and required lower greenhouse gas emissions than under EPCA/CAFE, the manufacturers would not have hired a legion of lawyers to challenge them across this country. Plaintiffs in those actions have taken great pains to argue how much more difficult it will be as a technological matter to meet our standards than to meet EPCA/CAFE. In effect they have demonstrated for us the greater protectiveness of California's standards.

The second issue before EPA is whether California needs its state motor vehicle standards to address extraordinary and compelling conditions in our state. As you heard last week, California easily meets this test. In fact, the only question for EPA to address is whether the conditions in California are such that we still need our motor vehicle program as a whole to address air pollution in our state.

Again this slide shows how nothing has changed in these conditions. California continues to truly stand alone

in its ozone problem. That is the end of the story as a legal matter.

But last week we heard questions that sounded like EPA was considering rejecting established waiver law and history on this point. Should EPA choose this path it would still arrive at the same destination, as California clearly does need our greenhouse gas standards to meet extraordinary and compelling conditions. This was demonstrated by the overwhelming evidence presented by Dr. Schneider, ARB, and others last week. I will briefly recap that evidence here.

It is beyond question that California continues to need ozone reduction strategies to address extraordinary and compelling conditions in our state. This chart shows how higher temperatures that we can expect from global warming will increase ozone concentrations.

Even at the low to mid-range projections for global warming temperature increases California faces dozens of extra unhealthy days conducive to ozone formation, shown here for the South Coast and San Joaquin Valley. Since greenhouse gas emissions indirectly exacerbate ozone concentrations, California's need to regulate emissions of hydrocarbons and oxides of nitrogen in order to address ozone concentrations also applies here to regulating greenhouse gases.

We also spoke last week about the current higher

wildfire incidence and the projections as shown here. Again, if increased wildfires weren't an extraordinary condition in their own right, particulates and other emissions from increasing wildfires will further exacerbate the health impacts from increased smog projected from higher temperatures.

We also mentioned these projected impacts from global warming that should likewise be considered extraordinary and compelling conditions. We identified eight experts whose reports on the particular effects of global warming in California will be entered in the record. Some of those we listed are here today to speak on separate panels and will be joined by other experts in their respective fields.

Last week a question was raised as to whether California must show a temperature impact in California resulting solely from its greenhouse gas reduction regulations. The answer is no, for three reasons. First, EPA cannot second-guess California's judgment on the effectiveness or need for any particular California standard.

Administrator Train addressed this point when he stated that neither costly controls nor marginal improvements in air quality were pertinent to his decision. EPA has accepted this principle numerous times since. So

the manufacturers' argument last week that ARB cannot prove a temperature change and air quality benefit from these regulations is not pertinent to this proceeding. It is enough that such standards address the problem in some way.

Second, the manufacturers' argument that we must show modeled temperature decreases proves too much. As we pointed out in our December 2005 waiver submittal, an appropriate analogy here is to ozone attainment demonstrations. We cannot demonstrate that a particular emission standard requiring small ozone precursor emission reductions directly causes a specific parts per million ambient ozone reduction in a particular air basin. Yet EPA has in the past approved waiver requests for marginal adjustments to our motor vehicle emission standards even though we presented no modeling demonstrating a measurable reduction in ozone.

Similarly, no regional climate change models can show a temperature impact in a particular area from measures of this magnitude. In fact, it takes the accumulation of several countries' emission reductions to show a change in temperature, or a temperature change avoided. For global climate change, the relevant modeling exercise is the IPPC scenarios.

Yet as Dr. James Hansen's expert report in the Central Valley case makes clear, and as Dr. Schneider

pointed out last week, there is a direct relationship between incremental reductions in greenhouse gas emissions and reduced radiative forcing. The Hansen report is one of the reports we will be submitting for the record.

Last week Mr. Tripp described the measures that automobile manufacturers and others are taking to rein in their greenhouse gas emissions. GM is to be commended for recently joining the United States Climate Action Partnership, but EPA should not countenance its trade group's attempts to minimize those emission reductions or these --

Finally, this argument runs counter to the rationale the Supreme Court gave in rejecting one of EPA's reasons not to regulate. That is, that regulating won't make much difference given other sectors' and nations' emissions. In fact, that is precisely why both California and EPA must regulate, because global warming must be attacked incrementally, with many measures. The Massachusetts decision counsels us not to cower in despair as worldwide emissions continue to go up but to attack that increase in every possible way.

The third reason we need not show a temperature impact is because the manufacturers' argument misreads the text of 209(b)(1)(B). The statute asks only whether California needs such state standards to meet extraordinary

and compelling conditions in California. The answer is clearly yes. We need these standards. We need other standards to be established under our AB 32, the Global Warming Solutions Act.

We need the federal government to act. We need other nations to act. Because we need all these things to occur to even have a chance at avoiding some of the worst extraordinary and compelling impacts that have been identified. Each particular regulation in isolation is by definition needed.

To further illustrate, as Dr. Schneider conveyed last week, the difference between the potentially devastating high or medium-high scenarios and the lower emissions scenario pictured here will reflect a combination of many greenhouse gas reduction measures. In the context of all these measures our AB 1493 motor vehicle standards will undoubtedly be among the more important. What kind of signal would EPA be sending if it concludes that California does not need these major greenhouse gas emission standards to meet extraordinary and compelling conditions?

Due to rapid global warming over the past 30 years the earth's temperature is reaching levels not experienced in 10,000 years. An increase in just one degree centigrade will lead to temperatures not seen in a million years. And if emissions of CO2 continue with the business as usual

scenario, increasing by two percent per year, we can expect an additional warming of two to three degrees centigrade this century. If that happens we and our children and grandchildren will all be living on a different planet.

Research conducted by Hansen, et al, has estimated that to avoid this two degree centigrade increase, heat trapping gases need to be stabilized so that their net climate change effect is less than 450 parts per million CO2 equivalent.

If the United States and other industrial nations would cut current emissions by 60 to 80 percent this goal would be achievable. Governor Schwarzenegger's Executive Order S-3-05 calls for an 80 percent reduction of greenhouse gas emissions from 1990 levels by 2050. If the industrialized world were to follow in California's footsteps the most severe climate change impacts could be avoided.

Again, showing projected end of century temperature increases it matters whether California takes this step, with others, towards reining in greenhouse gas emissions.

The groundbreaking report by Pacala and Socolow in 2004 showed how incremental emissions reductions matter. This slide graphically demonstrates how actions in a variety of sectors can in combination have a profound effect. The

US can immediately begin to make very significant reductions in carbon emissions with the implementation of existing technologies and strategies such as end-use efficiency, passenger vehicle efficiency, renewable resources, and carbon capture and storage.

This green wedge shown here represents the cumulative reductions needed from the US transportation sector to stabilize atmospheric greenhouse gas concentrations below 550 parts per million. EPA estimates that a cumulative 21,500 million metric tons of CO2 equivalent gases is needed from light-duty vehicles to achieve this goal. Greenhouse gas reductions from California and the 177 states that have adopted our standards achieves 3800 million metric tons, 18 percent of the estimated reductions needed from light-duty vehicles.

It's clear that we have only begun to address reducing greenhouse gas emissions from motor vehicles if we are to avoid the consequences of global warming.

This slide shows why it is critical to achieve the wedges from the previous slide as soon as possible and not wait for a federal solution to reducing motor vehicle greenhouse gases. Heat-trapping emissions are cumulative and have a very long lifetime in the atmosphere. The emissions already in the atmosphere mean that the world will continue to see increased warming over the next century. We

need to take strong and immediate action to prevent that warming from becoming catastrophic. Delaying the decision to reduce emissions will only make the task of solving it that much more difficult.

As the blue curve in this graph shows, if national emission reductions start soon we can stay on the stabilizing heat-trapping gases path at 450 parts per million with an annual emission reduction rate that gradually ramps to 3.2 percent per year. But if we delay a serious start and allow continued emissions growth at nearly the business as usual rate, the annual mission reduction rate required to stay on the path jumps to 8.2 percent per year, as shown on the red curve.

Finally, we have heard arguments that the impacts to California from global warming must be worse or unique in order for California to address them. This becomes relevant only if EPA repudiates the principle it has followed for the last 23 years that the pertinent question is California's need for its own motor vehicle emissions program, not for the specific standards under review.

But focusing on greenhouse gases alone, if Congress in 1967 had known what we know now about the potentially catastrophic impacts of global warming, would it have said that the compelling and extraordinary threat to California only justifies California standards if the threat

is more compelling and extraordinary in California than in any other state? We think not. At the existence of Clean Air Act Section 177, allowing other states to adopt California's standards as their own, shows that conditions in more than just our state may justify the California standards we adopt.

Although our impacts may not be unique or more severe, impacts in California are arguably unique and more severe. We are uniquely positioned to feel the brunt of global warming's exacerbation of existing ozone problems. We are uniquely positioned for wildfire impacts to make air quality impacts even worse. Our dependence on the Sierra snowpack to provide year-round water in the nation's most populous state, seasonal irrigation in the nation's number one agricultural production area, and to mitigate the dangers of flooding is unique.

Global warming could cause this snowpack to shrink as much as 80 percent. As Dr. Schneider put it, we are not happy to be in this vulnerable position but the fact is that we are. Again, you will hear more about the severity of these impacts vis-…-vis other states later today from science panelists.

And now to briefly discuss the technological feasibility of our regulations -- Excuse me, a little script correction.

The third issue before EPA is the consistency of the standards with Clean Air Act Section 202(a). Previous waiver decisions make it clear that this issue primarily relates to whether the standards are feasible in the lead time provided, giving appropriate consideration to the cost of compliance in that time period. We have demonstrated the technologies that can be used to comply with our greenhouse gas standards, and most are commercially available right now. For those that are not, ample lead time is provided.

In addition, the state and federal test procedures need to be sufficiently consistent that one set of tests can be used to determine compliance with both the state and federal standards. We don't expect this to be an issue since there can be no conflict with non-existent EPA greenhouse gas test procedures.

We made a comprehensive demonstration of the technological feasibility of our standards at the May 22 hearing in Washington DC so I will only touch on a few elements here.

This is a list of the technology packages ARB selected to set the near-term greenhouse gas emission standards, which requires an overall 22 percent reduction in greenhouse gases by 2012. All of the technologies listed here have already been commercialized by one or more vehicle manufacturers. Note we did not consider diesels or hybrids

in setting the near-term greenhouse gas standards, even though these technologies will be sold in California during the near-term standard phase-in.

It's important to note here that the greenhouse gas emissions standards are performance standards that do not require manufacturers to use these particular technologies or packages so long as they ultimately meet the requirements on a fleet-wide basis. Clearly we were, as any agency would be, constrained in evaluating all possible technology combinations available to the manufacturers. The manufacturers have demonstrated innovative approaches to meeting the requirements of the LEV program. We expect them to do the same in meeting the greenhouse gas requirements.

The mid-term technology packages include three emerging technologies. The integrated starter/generator has already been commercialized. Homogenous charge compression ignition, HCCI, is now close to commercialization, and camless valve actuation, which one supplier has said will be in vehicles by 2009 or, excuse me, 2010.

What you don't see in either the near-term and mid-term packages are hybrid electric vehicles or HEVs. There is a growing market for HEVs and manufacturers have announced plans to introduce HEV technology across all vehicle classes. To the extent that manufacturers include hybrids in their vehicle mix, then the burden of compliance

with the standards will be less.

This slide presents our conclusions on technological feasibility. The technologies we projected would be available to meet the near-term standards are being used by more manufacturers. Other technologies, such as E85, are also being introduced in greater numbers. Today the technology choices to reduce greenhouse gas emissions are greater than they were in 2004.

The industry's criticism of our modeling is rapidly becoming irrelevant as the technologies they raise doubt about are used in cars being sold today. Our cost estimates remain sound. Lead time is adequate and the safety issues industry raises remain specious.

We conclude with great certainty that the regulations remain feasible, cost-effective and are necessary to address global warming.

Before I conclude I want to further address one of the three supplemental questions raised in the Notice, the question of whether the Energy Policy and Conservation Act, or EPCA, fuel economy provisions are relevant to EPA's consideration of this petition or to CARB's authority to implement its vehicle greenhouse gas regulations.

Regarding whether the EPCA/CAFE provisions are relevant to our authority, as we explained last week, those provisions do not preempt our standards. Emission controls

and fuel efficiency have always overlapped but emissions standards come first, as NHTSA decisions, EPCA itself, and now the Supreme Court have all determined. EPCA/CAFE is no barrier to California exercising Clean Air Act authority.

Is the potential effect of the EPCA/CAFE fuel economy provisions on California's authority at least relevant to EPA's consideration of the California waiver request? The answer is clearly, no. The effect of EPCA/CAFE on California's authority, like constitutional and other statutory questions not identified in Section 209(b), is not relevant to EPA's waiver decision. The waiver decision must be made solely on criteria in Section 209(b), as reinforced by the Massachusetts decision. The authority issue is relevant to this proceeding only in the sense that EPA asked the question and ARB has accordingly responded.

The EPCA/CAFE fuel economy provisions can, however, be relevant to the question of technological feasibility since it is one of the issues identified in Section 209(b). We believe that compliance with the President's proposed annual four percent fuel economy improvement would make compliance with California's greenhouse gas emissions standards, which come first, relatively simple.

In conclusion, AB 1493 vehicles will look, cost and perform like today's vehicles. California's request

meets the three permissible prongs of EPA's waiver analysis. Neither the Supplemental Issues EPA noticed nor Constitutional concerns change that analysis. The Massachusetts v. EPA decision strengthens California's position and provides no excuse for EPA to delay acting on this request. Waiver law and policy require more, not less, defence to California to regulate vehicle climate change emissions. Therefore, US EPA must grant California's request, and must do so by October 25, 2007.

One final note. In separate letters the Alliance requested both a 30 day extension of the written comment deadline and afterwards a second 45 day period to respond to comments submitted. ARB wrote opposing these extensions for numerous reasons, most notably that the opponents, who have the burden of proof in this proceeding, are not entitled to hide the ball as they did in our 2004 rulemaking and await others' comments. The supporting materials ARB is relying on in this proceeding are for the most part publicly available, and like waiver opponents, ARB is not precluded from entering new information into the docket by the June 20, excuse me, June 15 deadline.

We are happy to answer the panel's questions at this time and at any time throughout the day, and we welcome the opportunity later today to briefly address principal opposition arguments you may hear. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Ms. Witherspoon, and thank you for addressing some of the questions that came up at our first hearing.

Any further questions from the panel? Thank you again for your time.

Our next panel is comprised of public officials from the state of California and the state of Utah. Senator Christine Kehoe from California, Assembly Member Ira Ruskin from the state of California, Mayor Heather Fargo from Sacramento and Mayor Rocky Anderson from Salt Lake City. I would also like to invite or ask if there are any other public officials in the audience who would like to present testimony at this time? If so please join the panel.

Thank you very much. Senator Kehoe, please proceed.

SENATOR KEHOE: Good morning. Good morning. Is that better? Thank you for the opportunity to testify today. I am Christine Kehoe. I represent most of the city of San Diego and I chair the Senate Energy Utilities and Communication Committee.

And I'm here to express my strong support for California's request for a waiver of the federal Clean Air Act preemption provisions so that California can implement and enforce its greenhouse gas tailpipe standards for new cars and light duty trucks.

Even with the cleanest cars and the toughest clean air standards in the country, California still suffers from some of the worst air pollution and largest greenhouse gas emissions of any state.

Over 41 percent of the climate emissions produced in the state come from transportation sources such as cars and trucks. California wants to exercise its option under the Clean Air Act to adopt its own motor vehicle greenhouse gas emission standards. As the largest state in the country by population and vehicle fleet, California has a vital interest in reducing global warming emissions from vehicles and other sources.

To put the extent of the emissions problem in perspective, there are over 36 million people living in California. Los Angeles County, with some of the worst air quality in the nation, has a population of at least 10 million people. Compared to the rest of the nation, there are about 40 other states with less population than one county here in California, that is Los Angeles.

Our Governor, the State Legislature and the citizens stand united in their commitment to reduce greenhouse gas emissions from the largest single source of those emissions, automobiles.

The need for action is no longer in dispute. Both the world's scientific community, and now the US Supreme

Court, have confirmed the perils caused by global warming and the legal authority of the US EPA to act to reduce greenhouse gases.

The request has been pending for over 17 months. It was originally filed on December 21, 2005 along with a solid demonstration that the state's greenhouse gas emission standards meet relevant criteria, waiver criteria.

Therefore, in addition to supporting California's waiver request I strongly support the Air Resources Board's recent letter notifying the US EPA of its intent to file an unreasonable delay lawsuit if US EPA fails to take final agency action during that time period.

I hope that the agency will see that the law, science and sound environmental policy all argue strongly for the immediate adoption of this waiver, and urge your agency to do so as soon as possible.

Thank you very much for the opportunity to testify this morning.

PRESIDING OFFICER GRUNDLER: Thank you, Senator.

Assembly Member Ruskin, please.

ASSEMBLY MEMBER RUSKIN: Thank you. Thank you to all for being here and the opportunity to testify on this critical issue. I represent in the California State Assembly a portion of Silicon Valley and I am Chair of the Budget Subcommittee on Natural Resources.

AB 1493 is landmark legislation and has been held up for much too long.

Today you will hear from some people that these regulations, for example, are too expensive. The auto industry says they can't meet these standards because they don't have the technology or because the technology is cost prohibitive. They do have the technology. And existing research clearly indicates that technology which can reduce vehicular emissions is available and is cost-effective.

Opponents say these regulations shouldn't be implemented because they are federally preempted by CAFE standards under the Energy Policy and Conservation Act. But AB 1493 states clearly that fuel standards are not an option available to the California Air Resources Board in order to meet the requirements of the bill. These regulations and the spirit of the law are not in conflict with the concept of CAFE.

Some may say it is unwise to have a California-only standard. But in fact 12 other states are waiting to adopt these standards. We are at a critical juncture, as I think you will be able to sense from all of the testimony requesting the waiver today. And every year implementation is delayed is a year that we lose the chance to reduce emissions. The regulations are supported by research that is feasible to implement.

Much is in your hands. Your decision is quite vital to us and to the nation and I urge the EPA to give us this opportunity. I believe that it is fair and within the law and a vital necessity to our constituents. Thank you for the opportunity to meet with you today.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Ruskin.

Mayor Fargo. Your Honor, welcome.

MAYOR FARGO: Thank you and good morning and welcome to you. Welcome to Sacramento as well as to California.

We have a very simple request for you today and that is that we are asking for a waiver and you are the people who can grant it. We are asking for the waiver because we in California would like to do more. We are willing to pay for it, we are willing to do it, we are willing to make it happen.

There is no disagreement in this state about global warming and about our need to step up and deal with the emissions from vehicles. It is very clear in our state that that is one of the major causes not only of greenhouse gas emissions but of air quality. In Sacramento we are in the top ten in the nation for bad air quality. It is not the kind of list we want to be on and it is not the kind of list we want to stay on.

People in my city take this very seriously. They would like the state to do more and they would like the federal government to do more. We as a city are joined by many other cities around California and around the nation in taking global warming seriously, in developing our sustainability plans, in changing our fleets and doing anything that we can do to be better environmental stewards.

But dealing with the emissions from vehicles is not something that cities can do. We might be doing it if we could. But we are -- That is not one of our jobs, it's one of your jobs. And we in California have a long history of asking and receiving waivers such as this so that we can step up and do more, not only for ourselves but for the rest of the nation. After all our air flows across the rest of the nation after we're done with it. So we think there is a compelling reason for the waiver to be granted.

We are joined by many other cities, as I say, throughout California and throughout the nation. Last year for the first time ever we had to open up warming centers during our winter because we had such a long stretch of below-freezing weather here in Sacramento. And last summer we had to open up cooling centers because we had over a two week stretch of temperatures that didn't drop below 85 degrees at night. So it is very real to us and it is very compelling to us and it is very urgent to us.

So what we are asking you to do is to allow us to help ourselves to do more, to clean up our air, to reduce our flood risks, to improve the health of our communities. We have an inordinate number of asthma cases and people who are dealing with respiratory problems, not only in Sacramento and the rest of the Valley but throughout California.

So I am joined by the US Conference of Mayors, which is very involved in climate change and in a number of efforts to try to reduce greenhouse gas emissions and slow global warming and by the California League of Cities as well as the National League of Cities as we try to step forward and do what we can do as mayors and as cities. And people are willing to do that. And you will hear from Rocky Anderson next about all that they are doing.

But we need the federal government to give us this waiver. And that is what the request is really all about today, it's really very simple. And if you could agree sooner in the day than later we could probably all stop talking at you. But we really urge you to take this request seriously.

And I hope that you get a break at some point during the day. Kitty-corner across the street is Cesar Chavez Plaza. Every Wednesday we have Farmers Market in the Plaza and today is Wednesday and you're welcome to join us

there. I hope you go and look at the fresh fruits and vegetables that are grown in this region that are at risk because of global warming.

But thank you for coming to Sacramento and for taking this issue seriously and I urge you to grant the waiver that the Air Resources Board has requested. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mayor.

Mayor Anderson, proceed.

MAYOR ANDERSON: Thank you. It's a pleasure to be with you today.

As a nation we face serious challenges from the alarming warming of our planet, due in large part to the burning of fossil fuels. Droughts, heat waves, hurricanes, floods and other extreme weather events are projected, in fact virtually certain, to become more frequent and severe due to global warming. Rising sea levels will threaten major coastal populations around the world, creating millions of environmental refugees.

Sir Nicholas Stern, the former chief economist at the World Bank, concluded in a 2006 report that inaction on climate change would lead to a 20 percent reduction in global gross domestic product. According to a 2004 Pentagon report, abrupt climate change will exacerbate tensions between nations as supplies of food and water dwindle. And

refusing to enhance fuel-efficiency standards will deepen our nation's abject reliance on dangerous, authoritarian petro-states and subject our economy to continued de-stabilizing fuel price fluctuations.

Continuing our present level of fossil fuel dependence and failing to combat the effects of global warming will engender economic and social de-stabilization on a colossal scale, in the United Stats and especially in many poorer countries throughout the world that are far less able to adapt to changing climate patterns. The challenges we face compel us to take rapid, decisive action, at all levels of government, in the private sector and in our individual lives to enhance efficiencies and curb global warming pollution. Efforts to reduce global warming pollution are particularly compelled in the US transportation sector, which by itself is responsible for more greenhouse gas emissions than the entire economies of all other nations except China.

Unfortunately, Americans have learned that we cannot fully depend on federal regulation to meet our pressing energy and sustainability needs. Fuel economy standards for cars have not risen since 1990, and the average fuel economy for new passenger vehicles is lower today than it was in 1987, 20 years ago.

Although we know that many on the EPA staff,

especially long-time staff members, recognize how vital it is that we act urgently and effectively to combat global warming, as evidenced by the fact that I was honored a few years ago to receive the EPA climate protection award, to even have the EPA consider regulation of global warming pollution now required a lengthy legal battle and a ruling by the United States Supreme Court.

Efforts by California and 11 other states, and I suspect there would be more on board if the EPA took the correct action that's requested today, these efforts by these states to regulate global warming pollution to a stricter standard than those required now by the federal government deserve praise and celebration. Not, as has been the case, obstruction, condemnation, and more legal action.

The 12 states attempting to implement the standard under the Clean Cars Program collectively represent 40 percent of the United States automobile market. The EPA should allow these states to improve sustainability, air quality and reduce global warming pollution within their borders, which will have a salutary effect on fuel efficiency standards nationwide and help our nation meet the tremendous challenges posed by global warming.

We have heard before about supposed deleterious effects projected to occur in implementing stricter regulations on auto emissions. History has judged these

claims as unfounded. When the catalytic converter was introduced in the late 1970s, many in the auto industry predicted that mandating the inclusion of a catalytic converter would significantly reduce the performance and increase the price of automobiles. Today, every car sold in the United States has a catalytic converter, reducing nitrogen dioxide and carbon monoxide emissions by more than half per vehicle mile traveled. Meanwhile, vehicle performance has increased.

States and cities serve as important laboratories for innovation. In Salt Lake City we have turned the challenges of global warming and sustainability into enormous opportunities. In 2002 I committed Salt Lake City, in its municipal operations, to abide by at least the Kyoto goals in reducing carbon dioxide emissions by at least 21 percent below our 2001 baseline by 2012. By 2005, three years later, we had far surpassed that goal, reducing global warming pollution by 31 percent several years before the 2012 target date, with significant cost savings to taxpayers.

There are hundreds of mayors across this country in large cities and small alike, tremendous geographic diversity, that have joined together in working with organizations like ICLEI, the International Council for Local Environmental Initiatives, the US Conference of

Mayors. Mayor Fargo came and joined us. In two years we have had about 70 mayors from around the country join us at Sundance Summit to learn the science, learn best practices, take the kind of measures we can at a local level. We know what an enormous difference can be made if local and state officials are given the freedom to enact these effective measures.

Utah Governor Jon Huntsman, Jr., has also recognized the importance of and opportunities attendant upon combatting global warming. The State of Utah recently became a charter member of the Climate Registry, a multi-state and tribe collaboration designed to establish a common greenhouse gas emissions reporting system.

Utah also just over a week ago signed on with the Western Regional Climate Action Initiative with six other states including California, and much of this is due certainly to Governor Schwarzenegger's leadership and leadership of the Legislature here in California, to develop a regional market-based program to achieve significant reductions in global warming pollution. But to meet these goals we need to be able to implement these standards that are being sought today.

Salt Lake City and the State of Utah recognize the need for proactive efforts to achieve significant reductions in global warming pollution, including the regulation of

emissions from automobiles, which are responsible for 50 percent of our local air pollution.

In the next 100 years, average temperatures in Utah could increase by three to four degrees Fahrenheit in summer and five to six degrees Fahrenheit in winter. Precipitation in summer is projected to decrease by ten percent. Since 90 percent of water use in our region comes from surface water, 75 percent of which is produced by melting snow, reduced snow pack resulting from higher temperatures will lower stream flows and lake levels, effects we are already beginning to observe. The ski industry, which contributes enormously to the economy of our state, would also be dramatically impacted as ski seasons are shortened and base villages are cut off from ski runs.

To avoid the disastrous consequences projected to occur from global warming, and to protect the health and welfare of their citizens, Utah, California and other states must be allowed to pursue the effective standards on greenhouse gas emissions laid out in the Clean Car Program. Fostering local and state efforts to meet our sustainability and energy challenges will improve quality of life, have tremendous economic benefits, and pave the way to a much brighter energy future. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mayor. And thank you for traveling all the way here to present your

views.

MAYOR ANDERSON: My pleasure, thank you.

PRESIDING OFFICER GRUNDLER: Sir, could you present your name and your constituency.

MAYOR CABALDON: I'm Christopher Cabaldon, I am the Mayor of the City of West Sacramento. I wanted to join my big city colleagues. We have been much in the news because we were just visited by two humpback whales who were scouting future territory in the Central Valley in areas where they know, with sea level rise, there will be additional habitat opening up which today is occupied by people and infrastructure in California's great valley.

You know, I am from a small town, not a big city, but I do know that the impacts are going to be extraordinary on our little town. Whether it's more severe and extraordinary than it will be in Boise, I don't know. I do know that our levees are not designed to withstand the changes in the variability of the snowpack and that we would be under 20 feet of water if those levees were to fail.

We are, along with Sacramento, the most endangered region in the country in our levee system. And all of the effects, the combined effects of sea level rise and the snowpack change, make that an impossible situation for us to manage. No amount of levee investment can protect us from the combined effects of sea level rise and snowpack

variation. So the effects here are going to be severe and extraordinary and we will feel them directly.

And I can tell my constituents that we can regulate leaf blowers for PM10 and for PM2.5 but we cannot protect them against the greatest potential catastrophe that could wipe out our entire community.

I'm from an ag county, not from the big coastal regions or from the giant metropolis here across the river. But all we're asking is if you can't help get the heck out of the way and let us do our part, do what we can to protect the lives and livelihood of the people of our communities and this state. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you. I'm glad to see your visitors have found their way back to the bay at least. Thank you, ladies and gentlemen for your testimony and your time today.

I would like to invite Panel number 3 up, representatives from the Alliance of Automobile Manufacturers, Sempra Energy, Pacific Gas and Electric and Energy and Transportation Technologies.

Also Mr. Bob Epstein from Environmental Enterprise from Panel 10 can join this panel so you can catch your flight. Environmental Entrepreneurs.

Mr. Douglas, when you're ready.

MR. DOUGLAS: Okay, thank you. I'm Steven

Douglas, I am with the Alliance of Automobile Manufacturers. And we had a PowerPoint presentation, I think they are trying to put that up now. But let me get started just with a brief introduction. There it is.

Again, I am Steven Douglas, I am the Director of Environmental Affairs for the Alliance of Automobile Manufacturers. The Alliance is a trade association representing BMW, DaimlerChrysler, Ford, General Motors, Mazda, Mitsubishi, Porsche, Toyota and Volkswagen.

And I'd like to thank you for the opportunity to testify again today. Last week I talked about the advances that manufacturers have made both in emissions and in fuel efficiency and we stated our support for improving fuel efficiency to the maximum feasible level.

Today I'd like to just take a couple of minutes to point out some of the technologies that manufacturers are developing and investigating. These are more than just concepts too. These technologies are in the dealerships and they're on the roads. In, in fact, 10.5 million of these vehicles to be exact.

Turning now -- Just to be clear, there is really no organization on the planet, not the state of California, not even the federal government, who is pursuing alternatives to the gasoline internal combustion engine with more zeal, more enthusiasm or more resources than the

automobile manufacturers.

Just looking at the technologies briefly. Hydrogen. Manufacturers see great promise in a hydrogen future. Some manufacturers are working on hydrogen fuel cell vehicles, others are working on the hydrogen internal combustion engines that are virtually zero emitting. And still others are working on both.

Biofuels. Again, most manufacturers are pursuing some form of renewable biofuel and they see a lot of promise in that. All vehicles today operate on E10 and many models are available that operate on both E85 and gasoline or on biodiesel.

Turning to hybrids. Many large manufacturers, in fact most of them, have introduced hybrid technology and some are developing plug-in hybrid vehicles and electric vehicles that pull energy from the electric grid.

And finally manufacturers will introduce a number of light duty, highly efficient clean diesel vehicles this coming year or this year.

In every single case manufacturers, and each manufacturer, is working on a diverse array of technologies. They're working on more than just one of these. However, the fundamental change to personal transportation is going to require more than just auto makers, it requires a partnership. A partnership between auto makers, government,

energy suppliers, and most importantly, consumers.

As I said last week, a patchwork quilt of state regulations, as California is now proposing, is entirely inappropriate and it is patently counterproductive.

With that I would like to turn now to California's waiver request. Our position last week and our position today is that EPA should deny the waiver. In at least two critical areas California has failed to meet its obligations under the Clean Air Act. And specifically California has failed to demonstrate that one, its standards in the aggregate are as protective of human health as the federal standard. In fact, California hasn't even submitted or analyzed, to my knowledge, let alone demonstrated whether their standards in the aggregate are as protective of human health as the federal standards.

Two, they have failed to demonstrate that it needs these standards to meet compelling and extraordinary conditions. In fact, these regulations have no impact on any of the conditions that have been identified by the Air Resources Board or that have been identified today.

So I'll talk briefly about the protectiveness claim and I'll ask my colleague, Andrew Clubok, to address the extraordinary and compelling issue.

California's program, its vehicle emission program can be divided into three categories. Those being the

emissions, these are the LEV II standards, the ZEV mandate. These two combine to effect smog or ozone. And then the last one is the CO2 or the fuel economy standards. And I'll just quickly look at each one of these in turn.

Looking first at the emission standard and comparing federal with California. The federal program was adopted in 2000, it's the Tier 2 program, and the California program was adopted in 1998, the LEV II program. They both apply the same standards to cars and to trucks, they began in 2004, they're both fully implemented at around 2007. They both rely on a fleet average to reduce overall emissions. Where the federal uses a NOx the California standard uses a hydrocarbon average.

And finally the federal program and the California program have different emission certification categories. The federal has nine and the California has four. The actual standards and the emission reductions associated with each are about the same. And I'll show you -- this next slide shows the emission reductions associated with the federal program and the California program. And as you can see there is very little difference between the two programs. And this is if California implemented the federal program beginning in 2009.

Turning now to the ZEV mandate. The ZEV mandate provides minimal air quality benefit. It does so at an

extraordinary cost. The values you see show a range of costs associated with each one of the ZEV mandate technologies, PZEVs, which are partial zero emission vehicles, advanced technology PZEVs, and then finally LEV. I've used the latest information from the ARB's expert panel report on that and this is generally with high volume production.

Finally there is the CO2 element. The CO2 requirements, they don't even have a theoretical health-based benefit. And to be fair, they are not intended to have any smog/ozone health-based benefit. However, again this regulation comes at a great cost.

So just to summarize each of the programs in California. You have the emissions, similar benefit, similar cost to the federal and California. The ZEV mandate, it has very high cost and small and negligible benefits. And then the CO2 mandate, which has extraordinary costs and no benefits.

So what does all this mean? There are really two problems with California's program. The first is what we termed the jalopy effect and that's that as you increase the cost, as you continue to pile costly regulation on top of costly regulation you increase the cost of vehicles and it causes people to keep their vehicles longer. And these are older, higher emitting vehicles.

Second, the CO2 mandate aims to, in part at least, to reduce the cost of driving. And that will result in consumers driving more and this is something that the Air Resources Board has acknowledged as well. But since the emissions are on a per mile basis more driving means more pollution. The result, the combination of these is that the California program results in higher, not lower, emissions.

Just to conclude, we do not believe that California has even analyzed, let alone demonstrated that their program in the aggregate is more protective of human health. And on that basis EPA should deny the waiver.

With that I would like to turn it over to my colleague, Andrew Clubok. Thank you.

MR. CLUBOK: Thank you. My name is Andrew Clubok and I am also here on behalf of the Alliance of Automobile Manufacturers. And we do appreciate the opportunity to present evidence in this proceeding.

Now some of the participants in these hearings, both here in Sacramento and in Washington, including the representatives of the State of California, have claimed that the EPA should simply approve this waiver request without allowing enough time for public comment. They have also claimed that the scope of the EPA's waiver -- I'm sorry, the scope of the EPA's review of the waiver request should be extremely narrow.

Because time is limited here today I am going to focus our presentation on evidence we have gathered that goes right to the heart of what even the Air Resources Board acknowledges must be considered under Section 209(b) and therefore is indisputably at issue here and that is whether or not the proposed regulation is needed to meet compelling and extraordinary conditions of this state.

If we focus on that question, and even if we consider the potential impact of this regulation if adopted nationwide or worldwide, what we quickly find is that this regulation will never have any measurable impact whatsoever on global climate change. Let me repeat that so I am clear. This regulation will never have any measurable impact whatsoever on global climate change, even if adopted nationwide or worldwide, thus it cannot possibly be necessary to meet compelling and extraordinary conditions of the state.

Now what is very important about what I just said is that the basis for that factual statement does not come from the automobile industry but rather it comes from the sworn testimony of the regulators themselves who devised this regulation and the experts they hired or retained.

When the regulators and their experts testified under oath in the ongoing federal court proceedings they admitted that they do not predict the regulation will have

any measurable impact whatsoever on global warming or on any consequence of global warming such as increased sea level, reduced snowpack, delayed spring blooms, et cetera.

They admitted that they have not identified any such effect even if this regulation were adopted nationwide or worldwide, even if it were adopted tomorrow, and even if the effects were measured through the year 2100. I daresay this is different from any other regulation that has probably ever been presented to the EPA. That even if adopted nationwide and ultimately worldwide, projecting 100 years into the future it will never have a measurable impact.

Now contrary to those facts one of California's representatives at last week's hearing before the EPA in Arlington, Virginia stated as follows, quote:

> "Although opponents may argue that California cannot show a temperature decrease in California due to these regulations, waiver opponents are unable to produce any evidence that these regulations are not one of the many measures nationwide and worldwide that are needed to meet extraordinary and compelling conditions global warming poses for California."

That was the EPA transcript at page 70, lines 10 through 16.

Now first of all it's important to note that this statement effectively concedes that California cannot show that its regulations will cause any temperature decrease within its own state. But more importantly what it shows is that, and what we will show today, is that California regulators and their experts themselves have conceded elsewhere that the regulations will never have any measurable impact even if adopted nationwide or worldwide.

As you listen to the regulators' own words on the subject, and I'm hopeful that the technology we have here will allow that, we have video clips from the sworn testimony of the regulators who testified under oath. When you listen to their own words on the subject it is important to listen not only to he explanation of what they did but perhaps more importantly what they did not do in connection with this regulation. That is, they did not even try to identify any positive environmental benefit that flows from this regulation, again, even if adopted nationwide or worldwide.

Their top experts, they did bring in top experts and they do have top experts who talk about negative consequences from global warming, things you've heard about like the snowpack and sea level et cetera.

And one of those experts I believe referred to

earlier today, Dr. James Hansen, he said that it would be relatively easy to calculate the impact of this particular regulation, even if adopted nationwide or worldwide. And when he was required to do so during his deposition he was able to do it in about ten minutes, sort of a back of the envelope calculation, that confirmed the regulation will never have any meaningful impact. Basically in his words, it was so low that it could never be measured without use of a microscope.

But he said that he has never performed the formal analysis that would confirm this result, even though he says he has one of the best computer models in the world and he could do so fairly easily. What he says, and you'll see his words in a moment, is that it wasn't worth his computer time to even bother to model the impact of this regulation even if adopted on a nationwide or worldwide scale. Now think about that and put that into context. The regulation is not worth a couple hours of his computer time because the impacts are so, predicted to be so low.

Now this answer that is readily apparent to anyone who considers the regulation with the models available for a short period of time, that probably explains why the state regulators here have not engaged in this exercise either. Because to do so, to actually calculate the projected impact of this regulation, would prove what, if we're honest,

everyone already knows.

And that is that this regulation, unfortunately, will never have any beneficial impact on any living organism on this planet, whether human, plant or animal, even if adopted nationwide or worldwide. Again, those are not my words. You will hear those are the words of the staff of the Air Resources Board who were asked to testify about it under oath.

What is perhaps even more important, however, is not just that this regulation will have no beneficial impact on global warming. But in fact it will certainly have a negative impact on health-based pollution. That is, smog-forming pollution will increase as a direct result of this regulation due to the predicted increase in vehicle miles traveled and the slower rate of fleet turnover.

Now ironically the regulators have dismissed those health-based pollution increases as being relatively small. A few percentage points they say. But regardless of how small those health-based pollution increases may be, that predicted increase in smog-forming pollution will dwarf the immeasurably microscopic predicted of this regulation on global warming.

As a result California is turning on its head its appropriate and traditional mission under the Clean Air Act, which is to regulate motor vehicle emissions as needed to

address compelling and extraordinary conditions of this state. To fulfill that mission California has been entrusted with a special role in regulating air quality. And as you will see from the testimony, they have now sacrificed that mission and that trust in favor of a purely symbolic gesture, unfortunately with no regard for the harmful consequences.

Now I'd like to just turn to, as I said, and hopefully we'll see if this technology works, the words of the regulators that we asked under oath whether or not there would be any impact of this regulation, even if adopted worldwide.

(A video clip of Thomas Cackette was played.)

MR. CLUBOK: We have the text of Mr. Cackette's comments also here, they just repeat what he just said.

We asked other regulators from other states who have adopted the regulation, for example the chief regulator responsible for Vermont's adoption of the AB 1493 regulation if he had any different information. This is what he said:

(A video clip of Thomas Moye was played.)

MR. CLUBOK: That was Thomas Moye from the Vermont ANR.

We asked the same question to the regulator from

New York. Let's see. Well, we'll get a few technical glitches here. Mr. Flint from New York said essentially the same thing, no estimate of any measurable impact on the temperature even if adopted, even if all the states that adopted it were measured.

By the way, we also asked the NRDC, the Sierra Club and the Environmental Defense, all who have intervened into the litigation that's pending. We asked them under a process called Request for Admission, in which you are obligated to respond truthfully if possible. In response to one of the requests the environmental organizations said, or admitted that, quote:

> "Defendants are not aware of any credible scientific evidence to support the theory that CO2 emissions reductions resulting from the adoption of the Regulation in all 50 states in the United States would change average ambient temperatures in any place by a measurable amount."

That was in response to RFA 111 in the pending matter in federal court in Vermont.

One thing you could say is, well gee, they just haven't done the work yet, they haven't done the studies. Maybe if they did the work the studies would show something

different. So again we turned to Dr. Hansen who testified that he had one of the best computer models in the world that could do this analysis. So we asked him:

"Q Have you modeled the CO2 emission savings that would result if Vermont and New York --"

They were the two defendants in that particular matter.

"-- were to implement the AB 1493 regulation?"

"A I haven't modeled that. It would not be difficult to do it."

So we said, well why didn't you do it then? And he said:

"Well, I wouldn't run a model with such a very small change, because then you're wasting computer time, because you do have the problem of finding a signal when compared to the natural variability of the climate."

In other words, the effect is so small it can't even be detected from the normal fluctuations day to day of the temperature.

We said to Dr. Hansen, well okay.

"Let's move past Vermont and New York. Let's say that it's all 11 states. Have you modeled that? Have

you found the computer time or the time to model the total CO2 emission savings in all the states that adopted the regulation --"

This was actually trial testimony. That's why we don't have a video, because this is Dr. Hansen's testimony in federal court. He said:

"No. Because we try to do useful things."

We talked a little bit further and he explained, well, the difference in temperature between 2.8 degrees, which is the current prediction of the United Nations, the IPCC, the best estimate of the temperature increase by the year 2100, as contrasted with their previous estimate of 3 degrees. He said, well that difference is insignificant. In other words, two-tenths of a degree change is insignificant.

He said: "The uncertainties are larger than .2." In other words, on a day to day basis fluctuations of two- or three- or four-tenths of degree make trying to measure even two-tenths of a degree over 100 years really fruitless because the uncertainties are larger. Now keep in mind that's two-tenths of a degree that Dr. Hansen said would be insignificant and not worth even measuring.

This is the predicted impact of the regulation

when you actually run the computer model. It only took a couple of hours I think of computer time to do it. Our expert did it instead of theirs but everyone agreed. He used the Wigley equation, the common tool that's used by the United Nations, the IPCC. And using the commonly accepted method he concluded, or it was concluded, that the effect of the temperature --

If you assume that motor vehicles continue to operate for 100 years and you assume this regulation were adopted in the entire country tomorrow, and you assumed that all of the effects possible of potential benefits from this regulation, which of course assumes we keep driving the kinds of vehicles we drive today with just better fuel economy, the predicted impact of the regulation by the year 2100 would be about one-hundredth of a degree. This was about the same amount that Dr. Hansen got with his back of the envelope calculation that he performed in deposition.

Now to put that in context, this chart here shows the current, quote, best estimate of the predicted increase in temperature due to global warming as set forth by the IPCC in their 2007 recent publication. This is the so-called A1B scenario, one of the business-as-usual scenarios. And the best estimate is that the temperature is going to increase by 2.8 degrees absent some very drastic change. So the question is, what should the change be?

And the issue is, well, this particular regulation, if this were to go into effect and it were just to be, if we were focusing just on California, this is the difference. This is what the world looks like with the California regulation as compared with what the United Nations says is their best estimate in the absence of the regulation. Now both of those lines are on the screen at the same time. You can't see the difference because it is too small to measure. This is what Dr. Hansen said would be microscopic. The red line that you can no longer see is the world without the regulation, the orange line is the world with California's regulation.

Well what if we add the Northeast? We still there is still no measurable change. What if we add the whole country? Again no measurable change. The lines all basically look alike. And again, if you assume the world looks as it does today 100 years from now, which of course doesn't make much sense, there's got to be a different, better path to get onto to address global warming. It's clearly not this regulation according to their experts.

So we asked Dr. Hansen if he accepted these numbers and agreed. And we said well gee, if these are accurate then what does that mean about the impact of the regulation. And he said:

"[The impact] would be smaller than

the -- than the unforced variability of the system."

"Q You would need a microscope to see the impact put into that context; isn't that true, sir?

"A Yes. Put into that context, yes."

That's what we have to take into account when considering this regulation. Now that's the impact on temperature.

You've heard both in Arlington, Virginia and a little bit today and I'm sure more today about things like -- that everyone cares about. Everyone cares about the sea level, everyone cares about the snowpack, everyone cares about spring blooms and other issues. How would this regulation, even if adopted worldwide, do anything to affect any of those conditions of the environment. That's what we then asked the regulators responsible for this regulation and here is what they said:

(A video clip of Charles Shulock was played.)

MR. CLUBOK: We tried to think of anything else we could think of. I will admit we did not think about insurance rates. I heard someone earlier today, maybe it was Ms. Witherspoon who said that insurance rates might be going up because California is near the coastline and certain issues. And so one wonders, if this regulation were

passed, even if adopted worldwide, would that affect insurance rates in any way? That would be one way you could actually see an impact from the regulation. I daresay that's not the case. You'll see we asked about everything else we could think of and the answer was the same for each.

(A video clip of Charles Shulock was played.)

MR. CLUBOK: That was Charles Shulock, the Air Resources Board's Program Manager for Motor Vehicle Greenhouse Gas Reduction and the 30(b)(6) designated representative of the Air Resources Board on this subject.

We asked him if he had a personal opinion if there was going to be any real world impact and he said no.

But I am just going to skip forward to -- After we had asked him all these questions we said well let's try Mr. Cackette, who is the Air Resources Board's Deputy Executive Officer if there was any other information that he was aware of in any way that related to the subject and here is what he said:

(A video clip of Thomas Cackette was played.)

MR. CLUBOK: I asked a similar question to Mr. Flint.

(A video clip of Steven Flint was played.)

MR. CLUBOK: You know, those words were very carefully chosen. Mr. Flint paused a long time and thought about his answer. I had asked him, was there any environmental impact from the regulation. After thinking about it for awhile he very carefully said:

> "We have not identified specific environmental benefits would accrue from implementation of this regulation."

A very candid answer.

And Mr. Flint had available to him and worked closely with the California regulators. They all share their information, they testified they reviewed it carefully. And even with this careful, thoughtful review they couldn't identify any benefits, any environmental benefits that would accrue from implementation of this regulation. That's a fairly extraordinary comment.

There is an impact, though, of the regulation it turns out and perhaps that is what Mr. Flint had in mind when he thought so carefully about his regulation. Unfortunately the impact is a negative environmental impact. The regulation, excuse me, will increase smog-forming pollution and we asked Mr. Flint also about that subject.

(A video clip of Steven Flint was played.)

MR. CLUBOK: So we know there is going to be more

pollution if normal course of events happen. That is, fuel economy improves so people drive more. So we asked him if he had, if anyone he was aware of had quantified that impact.

(A video clip of Steven Flint was played.)

MR. CLUBOK: Again Mr. Flint was the 30(b)(6) representative on this subject so he knows, he's the person who knows the most about it in New York after receiving all the information from California. That's an increase in pollution due to vehicle miles traveled. There is another problem with the regulation in that it's going to slow fleet turnover causing increased pollution as a result of an aging fleet, and again no effort to consider that or quantify it.

(A video clip of Steven Flint was played.)

MR. CLUBOK: There are other adverse pollution risks in this regulation, none of which were analyzed either. One in particular that came up in the discovery process in internal emails and in the testimony was an issue of whether or not the particulate matter emissions that would be permitted from diesel power engines could have an immediate and local effect on local climate change.

That's something that is a tradeoff potentially. With diesel fuel you get better fuel economy but you may

have more either health-based emissions or you may have an effect on global warming that's localized. That is an issue that the regulators chose not to even consider or analyze at all in connection with this regulation.

We have submitted in the rulemaking the evidence of what the emissions increase will be. This is net increase when you calculate the so-called rebound effect or the additional vehicle miles traveled if fuel economy were to go down -- I'm sorry, were to go up. The fleet turnover effect and then the reduced -- upturn in emissions because you need less fuel being delivered.

And this chart that we have presented here was presented in the rulemaking and it suggests that the regulation by the year 2020, that's pretty soon relatively speaking, would have the impact of approximately two million additional cars being driven. It's as two million more cars were driving around in California. That's how much additional smog-based or health-based pollution would result from the regulation.

Now that's not looking into 2100, which is how far you have to go to even get an insignificant impact on global warming but that's within at least a time period that is the normal time period that people analyze the effects of regulation. And you can see how quickly that negative impact ramps up.

Those are all of my prepared remarks. I would like to just briefly respond to one thing that we heard today. I heard it outside in the press conference and I guess we're going to keep hearing this. And that's sort of the argument that goes like this. It says, well, there they go again. The automobile industry has in the past objected to regulations and they're just doing that again.

Now I won't go in detail about all of the different past instances. I think much of that is being mischaracterized and we could talk about how the industry has very much been a partner in improving safety, emissions, addressing issues with regulators, et cetera. But to the extent it's even relevant to go back in time, particularly 35 years to find some quotes that suggest the automobile industry has been reticent in doing its part.

You know, if we're going to go back in time and look at past events what is a far more relevant comparison would be just about 10 or 15 years when the Air Resources Board staff, frankly the same staff, the exact same staff members who applied their engineering judgment to determine what the costs and benefits of this regulation would be, those staff members predicted that electric vehicles by the end of the 1990s could be sold to the public at an incremental cost of something like $1500 with the invention of new technology that wasn't yet available.

As Mr. Douglas' chart shows, now the Air Resources Board's best experts, they now admit that it's at least ten times that cost. Far, far greater than was predicted back then. Back then the industry went along with it and they actually said, let's try. Let's invest billions of dollars. And that's again, testimony that was presented in federal court. We asked the same staff members, isn't it true that you had predicted that the cost of the sales quota for the electric vehicle portion of the old ZEV mandate was going to be something like $1500, they said yes. They now admit that they were off by about ten times and they admit that that mistake cost the industry billions of dollars.

I think this waiver proceeding needs to be judged on the facts of this waiver proceeding and this regulation needs to be analyzed under the criteria of Section 209(b) for itself. But to the extent that people want to go back in time and talk about what's happened in the past, there are many examples on both sides and we think that's not really a productive approach.

But otherwise we appreciate very much the opportunity to present this evidence against the evidence we've -- some of the evidence we've gathered from the staff members who worked on this regulation and we will be submitting this and responding to some other issues in our written comments.

PRESIDING OFFICER GRUNDLER: Thank you very much.

Do panel members have any questions for the Alliance representatives?

PANELIST SIMON: I had one. Mr. Clubok, please. I recognize you presented testimony today and evidence about what the representatives in New York and Vermont have done in their analysis. Are you implying that California did not take on those issues in terms of their record when making their records for their program?

MR. CLUBOK: Well, what the representatives from New York and Vermont said is that they simply took the information that they had received from California. So they said in one part they did nothing independently but all they did was collect the information from California.

And so to the extent that they couldn't discern any of these studies or any of these impacts from the record they had received and carefully reviewed before they adopted the regulation we think that's telling. Obviously we also had quite a bit of information from California staff members as well regarding the impact of the regulation.

There is some dispute, I understand, about the pollution impact of the regulation but the chart that we have up on the screen right now I think represents the best evidence of the health-based pollution impact.

PANELIST SIMON: Thank you.

PRESIDING OFFICER GRUNDLER: Related to that can you tell me or submit for the record what assumptions you made with respect to the rebound effect that generated this graph.

MR. CLUBOK: Yes, we will submit -- It's all in the rulemaking record. We provided all of that and it's in the record. We are happy to go into detail about that in the written comments if that would be helpful.

PRESIDING OFFICER GRUNDLER: The same with the so-called jalopy effect?

MR. CLUBOK: Yes, we will. There is also I believe some testimony by the regulators that goes to the rebound effect and we may submit that as well.

PRESIDING OFFICER GRUNDLER: Thank you. Karl, anything else? Thank you.

Please proceed.

MR. MURRAY: Good morning. My name is Michael Murray and I am the Director of Corporate Environmental Policy for Sempra Energy. I want to thank you for the opportunity to come and present our testimony today.

Sempra Energy strongly supports the Air Resources Board's request for a waiver of preemption to allow CARB to implement regulations to reduce greenhouse gas emissions for passenger cars, light duty trucks and medium duty passenger vehicles. We urge the EPA to grant a waiver of preemption

at the earliest opportunity.

The Clean Air Act expressly recognizes California's right to set vehicle emission standards that are stronger than the federal standards and the right of other states to adopt California standards. The Environmental Protection Agency has granted California's waiver request more than 40 times in the last three decades. Each time EPA has found that California has met the requirements under the Clean Air Act. There is no basis for EPA to treat this request differently.

Sempra Energy considers CARB's request particularly compelling in light of actions in California since CARB has made its request. With the signing into law of Assembly Bill 32 last year California has embarked on an aggressive program to reduce the level of greenhouse gases emitted by activities within the state. AB 32 sets a target to reduce the state's GHG emissions to 1990 levels by 2020.

Since mobile sources account for almost 41 percent of statewide greenhouse gas emissions it is vital for the state to be able to look at the transportation sector for a fair share of emission reductions in order to help the state achieve its goals.

This will increase the ability of the state to achieve reductions in the most cost-effective and equitable manner by allowing it to explore a broader range of

reduction options with contributions by a larger number of sectors of our economy.

The transportation sector has a number of options for reductions that the energy industry can help to leverage such as the use of natural gas as a fuel and the use of plug-in electric vehicles. California is already exploring these and other similar options such as the use of biofuels.

Sempra Energy's utilities have already taken actions in our own fleet to reduce greenhouse gas emissions. We have converted over 1200 vehicles to natural gas fuel, assisted many other fleets to make similar conversions, and provided natural gas vehicle fueling infrastructure including 16 refueling stations that are accessible to the public.

Likewise, as a member of the California Electric Transportation Coalition, our electric utility, San Diego Gas & Electric, is supporting the development and use of zero emission electric vehicles, hybrid electric vehicles, electric transit busses and rail.

By granting the waiver that CARB has requested EPA can help to facilitate these kinds of activities that can transform the transportation industry's GHG footprint. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Murray.

Mr. Busterud.

MR. BUSTERUD: Good morning. My name is John Busterud. I am director and counsel for Pacific Gas & Electric Company. PG&E is a California gas and electric utility serving 1 in 20 Americans and is a leader on climate change and clean air transportation.

Climate change is an urgent issue and immediate action is needed to reduce emissions. Accordingly, PG&E was among the first companies to support enactment of California's historic climate change legislation, AB 32, which is intended to achieve a 25 percent reduction in the state's greenhouse gas emissions by 2020.

PG&E was also one of the founding members of the United States Climate Action Partnership. Our customers have invested in a clean, electric generating portfolio so that our greenhouse gas emissions are among the lowest of any utility in the nation.

PG&E has a vital interest in ensuring that all sectors of our economy, including the transportation sector, contribute their fair share toward achieving greenhouse gas reductions. For that reason PG&E supports California's request for a preemption waiver so that California can implement its motor vehicle greenhouse gas emission standards.

According to the California Air Resources Board

the transportation sector is responsible for almost 41 percent of California's greenhouse gas emissions. Achievement of significant greenhouse gas reductions in the transportation sector is crucial to the state's ability to meet its goals under AB 32. If motor vehicle greenhouse gas emissions cannot be reduced as expected other sectors of California's economy will have to make up the difference and will be unduly burdened by the need to reduce emissions by more than their fair share.

The Clean Air Act establishes specific, limited criteria for EPA action on a preemption waiver request from California. The material submitted by California with its December 21, 2005 waiver request, and in the presentation by Air Resources Board Chairman Dr. Sawyer at last week's EPA hearings clearly show that California has satisfied these criteria.

First, California has determined that its motor vehicle emission standards will be in the aggregate at least as protective of public health and welfare as applicable federal standards. In our view the information submitted by the ARB also shows that its protectiveness determination is not arbitrary and capricious. That California does need its own motor vehicle emission standards to address compelling and extraordinary circumstances and that the California standards are consistent with Clean Air Act section 202. On

that basis the Administration -- the Administrator must approve the waiver request.

I also want to address two of the points on which EPA specifically requested comment. First, the fact that the California standards in question relate to global climate change should not make any difference in EPA's evaluation of the waiver request. Nothing in Clean Air Act Section 209 regarding the California waiver, or elsewhere in the Act for that matter, provides any statutory basis for evaluating the waiver criteria differently for a California emission standard that regulated greenhouse gas emissions.

Second, the US Supreme Court's decision in Massachusetts v. EPA is relevant only because it establishes that EPA has statutory authority to regulate greenhouse gas emissions for motor vehicles. Which means that approval of a waiver for California motor vehicle greenhouse gas emission standards is also within EPA's regulatory authority. Massachusetts v. EPA does not otherwise affect EPA's evaluation of the waiver criteria.

For these reasons PG&E encourages EPA to promptly grant California's request for a preemption waiver so that the motor vehicle emission standards vital to reducing the state's greenhouse gas emissions can be implemented.

Thank you for the opportunity to testify here this morning.

PRESIDING OFFICER GRUNDLER: Thank you.

Mr. Epstein.

DR. EPSTEIN: Thank you very much. My name is Bob Epstein. I am here today representing Environmental Entrepreneurs; we are a national group of volunteer business people. We focus on the economic benefits of good environmental policy. And collectively our members have started more than 800 companies in the Unites States. I feel we have a great deal to offer at this hearing in terms of a business perspective that is not from the automotive industry or any particular industry but a general look at how these things work and how they drive innovation.

My message is pretty straightforward today. We request that you grant the waiver and grant it without delay.

E2 was the principal business organization that worked with Assembly Member Fran Pavley in 2001 and 2002 to both analyze the bill and help demonstrate the fact that it both was technically feasible and economically beneficial to California and potentially to the entire United States.

Nothing has changed in that method and I'd just like to comment on a few points.

First of all you have already seen that the consequences of not addressing climate change are severe, particularly to the state of California. But we don't hold

ourselves to any unique standard there, it's dangerous for everybody.

Secondly, the technologies that were considered were limited to those that were demonstrateable or already in production in 2002/2004 time period. This was to make it as favorable as possible for the auto industry to comply with the bill. And at that time using known technologies it was shown we could get a 30 percent reduction by 2016.

The third was to demonstrate doing this was a net economic benefit to the consumer. This was analyzed based on the fact that it would be lower operating costs. Now at the time this was done the assumption was gas would be $1.78 as adjusted for inflation.

So the analysis that you just saw earlier from the auto industry as well as previous ones would all need to be revised concerning the fact that in today's prices -- I don't know if anyone expects to ever see $2 gas again but the higher gas prices are a mitigating factor. So that basically means that the analysis is even more favorable if it were to be redone today.

Now the other thing we looked at is the history of regulations and how do you estimate what is going to be the price of the vehicle and how do things work out. And this failure to not be able to predict accurately has been consistent both by the industry, by EPA, by the California

Air Resources Board.

And I just want to give you one example drawn from the 1990 federal Clean Air Act that looked at the '96 Tier 1 standards. At the time the industry submitted an estimate it would cost $432 per vehicle, your own staff at EPA estimated the cost to be $150 per vehicle, and finally the US Bureau of Labor Statistics upon taking the data discovered the actual cost ended up being $88.42.

And there is a reason why it's hard to predict this. Because until something goes into effect you can't calculate what the innovations will be. And that's our main point here is the costs are likely to be significantly lower because given the challenge and requirement to do it the innovations, just like in every other measure, will occur and they will create things that we could not have predicted in advance or it wouldn't have been prudent for a regulator to make any assumptions about.

Let me also talk about the reasonableness of the time frame. As you know AB 1493 was passed in 2002. The regulations were adopted in September of 2004, a full five years in advance of the model year of which they'd be required. So we feel that ample opportunity has been given to allow time to come into effect.

And lastly I'd like to address this question about whether this regulation makes a difference in terms of

climate and also in terms of health and safety. And I find no inconsistency with our request for a waiver to be granted and Mr. Clubok's demonstration that happened here a few minutes ago and let me explain why I believe that.

First of all, transportation accounts for 40 percent of our greenhouse gases and that is a material amount. Worldwide it's probably about 30 percent, between 30 and 33 percent. So that is a material part of the problem. Addressing it is a material part of the solution.

But no one ever said that unless you get there in one step it doesn't count. There is a requirement on the part of this regulation that the steps to be taken be technology feasible and to be a starting point. Our number one objective is to reverse the trend. This is the fastest growing segment of greenhouse gases. We have to slow it, we have to stop it and we have to reverse it.

So this regulation chose a starting point based on technical feasibility. One way to interpret Mr. Clubok's comments here would be to say, these are not aggressive enough. And on that point I completely agree. I believe at this point if the regulations were looked at we could be much more stringent than what's in there but that is not what is on the docket for today. It's a starting point and it is based on giving the industry ample opportunity to advance. I fully agree that going forward over time it has

to be more aggressive because it's one-third of the pollution. But we are asking you for a waiver today so we can get started.

The next point is about the cost of vehicles. As I've mentioned in the testimony just previously you can't predict that. All you know is that consistently the regulators' estimates are conservative and things come in much better than planned. Also we see rising fuel prices here and increasing pressure on that. That is only going to serve to benefit the cost-effectiveness.

And lastly I don't understand at all the argument that says, if we make cars too inexpensive to drive it will be bad for your health. If we look at what we can do in California a huge amount of emissions are from a relatively small number of vehicles. We can put programs in place to help buy those out, et cetera. So if your only issue is a mitigation of how you deal with the fact that we're making driving more affordable, and that's a bad thing, that can be managed through other mitigating measures.

So in summary I urge you to give us the waiver we need. If we look at what's happening in California, this state is determined to lead this effort on a worldwide basis. We have regular visitors from the EU, from Japan. Every week there are visitors here. This law has already had an impact worldwide. It's getting everybody focused on

how do we get less greenhouse gases while still allowing people to drive their vehicles. We all agree on that as the goal. I urge you to pass this waiver without undue delay. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you. Any questions for the remaining witnesses?

Thank you all for your time and for your testimony. I'd like to invite Panel number 4 up. It's great to welcome back our former colleagues Mary Nichols.

MS. NICHOLS: Thank you.

PRESIDING OFFICER GRUNDLER: And Dr. Lloyd. I saw him earlier.

MS. NICHOLS: Actually Dr. Lloyd asked me to apologize. He had to catch a plane so he will not be able to join us.

PRESIDING OFFICER GRUNDLER: Ms. Nichols, when you're ready please proceed.

MS. NICHOLS: Thank you very much. I must say --

PRESIDING OFFICER GRUNDLER: Will you press your button so we can all hear you.

MS. NICHOLS: There we go, thank you. I's a pleasure to be here this morning. It's a pleasure to be with former colleagues. I can't exactly say it was a pleasure to be reminded that of the many waiver requests that EPA has handled I personally have been involved either

at the state level or on the federal side in quite a substantial number of them. But I hope that gives me some perspective to bring to this hearing.

I am here supporting the grant of the waiver. I think it's well-justified and I think the program is important. And I am not going to duplicate the points that have been made well by others but I would like to try to just focus in on a couple of the issues that I think are relevant to the waiver.

In preparing for the hearing today I did go back and think about whether there have been events in history in dealing with past waivers that might be particularly useful for your panel to consider in putting together your decision here. Because obviously this is a hotly contested issue and the auto industry clearly feels very strongly that the waiver shouldn't be granted or they wouldn't have mounted the kind of attack that they have shown here today.

Frankly I have never seen in my history of dealing with the industry the kind of ad hominem attack that was mounted here today. The out of context use of testimony from an unrelated court proceeding to me was frankly somewhat shocking. But clearly it indicates that there is something at stake here.

So I wondered whether some of the same issues in terms of dealing with a really quite different state program

might have presented themselves in the past. And I did get a copy of a document which isn't available on-line. I know it's available to you because it's in your archives. It's called the Waiver of Federal Preemption for California Low Emission Vehicle Standards and it is dated January 8 of 1993 and signed by then-administrator William Riley.

What I think is interesting about this, about this decision, aside from the fact that it does go back to a former President Bush and a different set of political players, is that it deals with a set of California standards which were just totally different than what EPA was doing at the time but where EPA had to make a decision about the legal standard that was applicable in this matter. It's a quite lengthy and I think very well-reasoned decision, about 188 pages to be exact.

But in talking about the standards, and again I won't repeat the legal arguments that were ably presented by the Governor's Chief of Staff or the Attorney General of the State of California, who was by the way the man who appointed me to the Air Resources Board so I think he knows what he's doing here.

But in terms of the deference that was to be paid to the California approach, it's laid out quite clearly that the standard that EPA is going to be looking at here is one of essentially saying that unless California is being

demonstrably arbitrary and capricious in its finding of a compelling need that it is not the place of EPA to step in and think differently.

It is also interesting that since this is the decision that originally involved the ZEV waiver, which again, you know, is a new kind of animal. It was not an emissions standard per se, it was a specific mandate to do something that related to the type of technology being used as opposed to air emissions. The administrator found that where there wasn't a specific regulation by EPA that would preempt this regulation, even if there might be a conflict with other federal statutes, and in this case it was a different federal statute, the NEPAC that was being alleged to conflict, that there was no issue of federal preemption.

So I would encourage you to look to this decision as at least one source of thoughtful analysis of how to deal with this kind of situation. Again, it also deals at some length with the issue of whether the standards have to be in the aggregate as protective as opposed to being more protective. And it talks both about the enforcement mechanism and the standards themselves.

Because at that point the auto industry, which was opposing the waiver, was making a very strong claim that because at that point California's inspection and maintenance program was less effective than the federal

inspection and maintenance program that in use the California cars would not actually be as clean as the federal cars.

Again I think that's a kind of an interesting and potentially useful avenue to pursue in looking at this argument about what the end-use effects will be if it turns out that the cars that are built under this waiver become so cheap to drive that people are driving them more and therefore creating more emissions. Actually that kind of reminded me once again of the old arguments between the auto and the oil industries about, you know, who was to bear the cost of meeting cleaner air standards in California.

But basically I think the message that I am here to deliver as a friend of both agencies that are dealing with the situation is that when in doubt it's best to go with the state of California, and if there is no compelling reason not to do so I think that is what Congress told you to do. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Mary, it's great to see you again.

South Coast, welcome.

MR. HOGO: Good morning. I do have a short PowerPoint presentation if that could be brought up. And while that is being brought up I'll start my testimony.

Good morning. My name is Henry Hogo, Assistant

Deputy Executive Officer in the office of Science and Technology Advancement at the South Coast Air Quality Management District. Thank you for the opportunity to speak today and express the South Coast AQMD staff's strong support of California's request for a waiver of federal preemption of the adopted greenhouse gas emission regulations for light and medium duty passenger cars and trucks.

US EPA's approval of the waiver request will provide not only reduction in greenhouse gas emissions but also concurrent reductions in criteria pollutant emissions critical for the South Coast Air Basin to attain applicable federal eight-hour ozone and fine particulate air quality standards.

The Draft 2007 Ozone and Fine Particulate Air Quality Management Plan for the South Coast Air Basin calls for reductions from all criteria pollutants to meet applicable federal air quality standards. And note that this plan calls for over 30 percent reduction in oxides of nitrogen by 2015, and in 2023 76 percent reductions, for the region to attain the federal eight-hour ozone air quality standard by 2024. In addition, the draft plan identified control measures that could provide concurrent greenhouse gas benefits.

As you can see here, over 30 of these measures,

total measures, are mobile source measures. Mobile source contributes over 80, 85 percent of the air quality problem in the South Coast Air Basin.

While the principal purpose of today's hearings is on California's regulation of greenhouse gas emissions from light and medium duty vehicles we strongly believe that California's regulation will provide concurrent reductions of greenhouse gases and criteria pollutants.

Based on over four decades of air pollution data compiled by the South Coast AQMD one central fact must be recognized by the US EPA as it examines this issue. Peak ozone levels in Southern California are heavily influenced by risking temperatures. As a result the South Coast Air Basin faces the most serious ozone vulnerability to rising greenhouse gas emissions in the entire nation. California needs these standards to meet compelling and extraordinary air quality conditions.

California's regulation on light and medium duty vehicles, of which there are over 11 million registered vehicles in the South Coast Air Basin, is the first step in helping to reduce these higher temperature impacts, thus reducing the resulting ozone increase. The regulation at issue here will also directly result in fewer NOx and VOC emissions, reducing both ozone and fine particulates. In addition, many of the advanced mobile source technologies

such as hybrids and plug-in hybrids will lead to reduced use of petroleum based fuels and reduced criteria pollutant emissions. Automobile manufacturers will look to these advanced technologies to comply with California's regulations.

Lastly, improvements in vehicle efficiency would also have direct air quality benefits due to reduced emissions from refineries, fuel distribution and retail marketing.

The US EPA's favorable decision will have an immediate effect in reducing not only greenhouse gas emissions but also air pollution on a more local level. I would like to end my comments with the following slide.

And this slide shows the population exposure to ozone and PM above the federal ambient air quality standards. The pie chart on the left shows that the South Coast region has about 52 percent of the population-weighted particulate matter exposure compared to the rest of the nation. In addition, as seen in the pie chart on the right, the South Coast region has over 25 percent of the ozone exposure, and therefore the health impact burden, compared with the rest of the nation.

The success for the South Coast Air Basin to attain federal air quality standards relies directly on achieving the benefits of California's entire mobile source

control program, including their expeditious implementation of greenhouse gas emissions controls under AB 1493.

I am going to divert a little bit from my prepared statement to respond on the Alliance comment about increased hydrocarbon and NOx emissions due to the regulation. Our Air Quality Management Plan shows that VMT, vehicle miles traveled, will continue to increase. And despite this increase the California mobile source control program will bring those emissions down. What we believe will happen with these regulations is that it will help bring the current levels down even further. So we strongly disagree with the Alliance comment.

In summary, we strongly urge US EPA to approve California's request for waiver of federal preemption under Section 209(b) of the federal Clean Air Act. The South Coast AQMD legal staff has reviewed the waiver request and is in full agreement with the California Air Resources Board's response to the questions posed by US EPA in its notice.

Thank you for this opportunity to speak. We will provide more specific written comments on this important decision. I'll be glad to answer any questions you may have.

PRESIDING OFFICER GRUNDLER: Thank you very much. And if you could submit for the record your analysis of the

situation in the South Coast with respect to VMT and emissions with respect to this whole protectiveness dispute that would be useful to us.

MR. HOGO: We will.

PRESIDING OFFICER GRUNDLER: Thank you.

MR. HOGO: Thank you.

PRESIDING OFFICER GRUNDLER: From the Bay Area, Mr. Hilken.

MR. HILKEN: Good morning. I am Henry Hilken, I am the Director of Planning and Research at the Bay Area Air Quality Management District. Thank you very much for the opportunity to speak to you this morning.

The staff of the Bay Area Air District strongly supports ARB's waiver request and we urge EPA to grant it promptly. We believe these emission reduction regulations are very important and necessary to improve air quality and public health in California.

The Bay Area District was created by the State Legislature in 1955 to regulate air pollution in the Bay Area.

Over the past more than 50 years we have made significant progress in air quality in the Bay Area. The maximum concentrations and number of days over health-based standards have gone down dramatically. That's true for pretty much the entire state of California so it's really

something for us to be proud of. However, most of the state still does exceed health-based standards and so much more needs to be done.

These levels of air pollutants in the Bay Are and elsewhere in California do have health effects, direct health effects, on the residents of California. Asthma attacks, emphysema, bronchitis, lung damage. As you are well aware children and the elderly are the most susceptible to these effects so it is really critical to the health and welfare of our state that we move forward with these and parallel regulations.

We are very concerned that the increased temperatures that could result from global warming will worsen air quality conditions in California and reverse much of the progress that we have made over the years.

We currently in the Bay Area suffer or experience less than 20 extreme days per year. An analysis by the California Energy Commission has looked at various scenarios but predicted under various scenarios of global warming that the number of extreme heat days could increase to up to 40 or as much as 130 days per year. Which would certainly increase the number of days where we would exceed or would experience high ozone levels in the Bay Area.

And our own preliminary analysis has shown that fairly modest temperature increases in the Bay Area will

significantly increase ozone concentrations in our region. So we really see this as important from the global climate change perspective but also from our public health requirements in the Bay Area.

And as you're well aware and I know other previous speakers have touched upon, there are many other impacts beyond air quality that climate change could and probably will have on the state, reduced snowpack, impact to our agriculture, rising sea level. That is a particular concern in the Bay Area. We have many billions of dollars of public infrastructure investments along the San Francisco Bay shoreline. That's true for much of the California coastline. And even modest increases in sea level would put those investments at risk.

And so it is because of these reasons that local and state and regional agencies are stepping forward and addressing climate change.

The Air District, the Bay Area Air District established our climate protection program two years ago, precisely for the reason that I've mentioned earlier. We were concerned that increasing temperatures could reverse a lot of the progress that we have made over the years. There are a lot of local governments and businesses and community groups in our region that are working on climate change, we are working very closely with them. We really want to make

the Bay Area and the entire state a leader on climate protection.

Similar as you know, as you're well aware, California is clearly a leader on climate protection. The Governor and the Legislature have made it abundantly clear that the state is going to move aggressively in reducing greenhouse gas emissions. The Governor has established very aggressive emission reduction targets. And the Legislature in adopting AB 32 and the Governor in signing AB 32 have made it clear that we are going to be implementing very aggressive programs to reduce greenhouse gas emissions. The emission reductions under these regulations, the 1493 regulations, are critical. They are a critical component to this statewide effort.

As other speakers have noted, motor vehicles contribute over 40 percent of the greenhouse gas emissions in California. We have to tackle motor vehicles if we are going to have any hope of addressing climate change in California, the United States and throughout the world.

So this is nothing new. State and local governments have worked closely together for many years on air quality programs. I mentioned much of the progress that we have made over the years in the Bay Area in regulating maybe stationary sources. The region has spent many millions of dollars to reduce emissions from stationary

sources. And industry in the Bay Area is among the cleanest in the country.

Similarly the California Air Resources Board has taken dramatic steps in reducing air pollution. They are a world leader in air pollution control. They have -- Their ARB regulations on motor vehicles and other mobile sources set the standard, quite simply, and they have been instrumental in improving air quality in California and have been followed and had profound benefits in the rest of the United States.

So we need the partnership of the federal government today. We need you to work with the state and approve this waiver so that we can move forward and implement these regulations to reduce these emissions further.

California is the second largest emitter of CO2 in the country. The United States is by far the largest emitter of CO2 in the world.

As I have noted and others have noted, motor vehicles contribute a major portion to greenhouse gas emissions. We have to address motor vehicle emissions of greenhouse gases.

The AB 1493 regulations call for auto makers to limit CO2 emissions from new vehicles. The technology is readily available and cost-effective, it's available today.

We have over the years, as previous speakers have noted, there have been -- In response to federal and state regulations auto makers have been able to step up and produce the technology to achieve these standards. We are very confident that they can do so once again. This is nothing new for the auto makers, they have been doing it for years.

Indeed many countries -- The United States fuel efficiency lags considerably behind much of the industrialized world, Canada, Europe, Japan, Australia. Even China's new standards are more stringent than the CAFE standards or fuel economy standards in the United States. So auto makers already will have to produce vehicles that are more efficient than we see today to sell their product in other countries. So we don't see this as a leap in the United States.

So in conclusion we see these regulations as critical to reducing greenhouse gas emissions in California. It is extremely important for protecting the public health of Californians and we urge EPA to grant the waiver promptly.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Hilken. Thank you all for your testimony, appreciate your time.

I'd like to invite Panel 5 to come forward. Panel

5 is comprised of additional local air quality district representatives. We'll start off with Northern Sonoma County, Barbara Lee.

MS. LEE: Good morning, Panel Members. My name is Barbara Lee. I am the Air Pollution Control Officer for the Northern Sonoma County Air Pollution Control District. I appreciate this opportunity to testify before you today in support of the request by the Air Resources Board for a waiver under Section 209(b) of the Clean Air Act.

As you are aware and have certainly heard today, this waiver request is a very important part of California's efforts to do its part to address global climate change. It is important that California does this and it is consistent with the state's standing as a global economic and environmental leader.

At the same time, however, what is important to focus on is that this waiver request is part of the state's longstanding and comprehensive program to reduce emissions from motor vehicles and to achieve clean air for all Californians.

Congress rightly recognized the need of the state of California to set tailpipe emission standards for motor vehicles and provided this waiver process to support California's efforts. Congress further recognized that other states benefit when California does this and allowed

them to rely on the standards that California adopts. This waiver process allows California to advance the science to reduce pollution for motor vehicles while ensuring that engine manufacturers have a clear and consistent set of standards to meet. History shows us this process works.

The Air Resources Board has tremendous technical expertise and rulemaking capabilities, as you know. The staff and the Board have consistently put into place feasible and effective tailpipe emission standards that reduce emissions from motor vehicles without harming industry. In fact, over the decades ARB standards have promoted technology advancement and business growth.

The Clean Air Act provides clear standards for you as you review this waiver request. And after reviewing the state's extensive and robust process in setting its standards you will have to conclude, as you have in the past, that California has not acted capriciously, that it does need to maintain a separate vehicle emissions program, and that this program is consistent with the requirements of the Act.

On the points that you had specifically comment: First, the Clean Air Act allows the waiver for tailpipe emission standards, which this is. The pollutant basis is not limited and a comparison to the CAFE standards is not required. Second, the recent Supreme Court decision

confirms that this waiver request is squarely within your purview.

The request before you today is if historical importance in the battle to protect our climate and our environment. But you should recognize that it comes to you as part of a longstanding, feasible and effective program regulating tailpipe emissions for motor vehicles.

This waiver request, like so many before that you have approved, will advance technology and clean air in California and ultimately throughout the nation. Its costs and benefits have been carefully balanced by the Air Resources Board as they have historically done with all of their emissions standards.

I urge you to stand up for clean air, for fair and effective government process, and most importantly for the future of our climate and our world. Please grant the waiver request and do so expeditiously. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you. Next I'd like to call on Mel Zeldin representing the California Air Pollution Control Officers Association. Mel.

MR. ZELDIN: Thank you and good morning. I am Mel Zeldin, Executive Director of CAPCOA, the California Air Pollution Control Officers Association, which is a nonprofit organization representing the air pollution control officers from all 35 local air districts in California.

I am pleased to be here today to express our association's strong support for the state's waiver request on motor vehicle greenhouse gas emissions. The state has presented EPA with very compelling and convincing evidence and rationale that climate change is occurring and that granting California a waiver is absolutely necessary. We fully support the ARB's statements.

I would also like to add that there is currently an increasing groundswell of concern about climate change at the local level. Each of our 35 members has its own air pollution control board, all of which include locally elected officials. In many of our air districts these officials are asking staff for guidance on what can be done at the local level to contribute to the efforts in combating global climate change.

What is remarkable is that the actions and solutions to a global problem are being initiated at the grassroots local level. Incrementally every action to reduce the manmade carbon footprint, however seemingly small or insignificant in the context of a global scale, when accumulated over many such small actions adds up to something that will make a difference.

Nonetheless substantive programs to reduce greenhouse gases must be implemented at the state and national level to effectively address a problem of this

magnitude. Federal, state and local agencies as well as the private sector all need to do their part. California has exhibited remarkable leadership in moving forward in this arena and it is imperative that EPA not stand in the way of this vital progress.

In closing, we have only one planet to sustain human life as we know it and we have an obligation to do all we can to preserve it. EPA stands for Environmental Protection Agency and I can't think of a more important time or issue than this for you to uphold the mission embodied in your name. We urge you to grant the waiver and let California do its part to protect our planet for our children, grandchildren and many generations to follow. Thank you for the opportunity to speak.

PRESIDING OFFICER GRUNDLER: Thank you. And now from the City and County of San Francisco.

MS. BALI: Good morning, almost afternoon. My name is Vandana Bali and I am speaking on behalf of the Department of the Environment at the City and County of San Francisco. I thank you for the opportunity to testify today.

We strongly support the California Air Resources Board's request for a waiver in order to implement California's Clean Cars Law. Granting this waiver is essential to promote improved air quality and public health

in California.

As everyone has stated already earlier before today, California has the dirtiest air in the nation. Motor vehicles continue to be a major source of emissions that cause air pollution, accounting for 40 percent of California's total global warming emissions. In San Francisco motor vehicle emissions account for 51 percent of the total greenhouse gas emissions. San Francisco holds itself accountable for its contribution for global warming and we issued a Climate Action Plan in 2004, committing ourselves to dramatically reduce our overall greenhouse gas emissions to 20 percent below 1990 levels by 2012.

The Clean Cars Law provides a feasible, cost-effective pathway to substantially reduce emissions from vehicle technologies that are proven and readily available today. Without this law vehicle greenhouse gases, as well as ozone and particle pollution, will continue to rise as more cars travel more miles on the road today.

Research has demonstrated that bad air can lead to premature death, aggravate respiratory health, and it disproportionately impacts vulnerable populations like children, people with compromised immune systems and the elderly.

The impacts from global warming and climate change present serious threats to local governments. Local

governments are the first line of defense against global warming. Police, fire and emergency responders, hospitals, senior centers, emergency shelters, water and local utility districts, all will bear the immediate brunt of responding to calls for help in crises linked to global warming.

San Francisco as you know is a coastal city surrounded on three sides by water and it is extremely vulnerable to climate change. We are further at risk because we depend on the Sierra snowpack for our water supply and for hydroelectric generation that supplies power for our public transit systems, among other municipal needs.

According to a joint study by the Union of Concerned Scientists and Ecological Society of America, some of the possible effects of climate change on San Francisco include: Rising sea levels that could potentially be devastating. Low lying areas such as San Francisco International Airport, which is built on a wetland, Treasure Island, AT&T baseball park, portions of our financial district, our marina and harbor facilities could e threatened. Increased storm activity could increase beach erosion and cliff undercutting. Warmer temperatures and more frequent storms due to El Ni¤o will bring more rain instead of snow to the Sierras, reducing our water supply.

Such dramatic changes to San Francisco's physical landscape and ecosystem will be accompanied by financial and

social impacts. Tourism, San Francisco's fishing industry, and the regional agricultural industry could suffer. Food costs could rise, property damage could be more prevalent, and insurance rates could increase. The city's roads, pipelines, transportation, underground cables and sewage systems could be severely stressed or overwhelmed if rare instances of flooding or storm damage become more commonly -- occur more commonly.

The environment plays a large role in some diseases carried by insects as well. Warming could make tick-borne Lyme Disease more prevalent nd could expand the range of mosquito-borne diseases such as West Nile Virus. Another threat to the health of San Francisco residents is the air pollution caused by higher temperatures and increased ozone levels. Neighborhoods in the southeast portion of the city where asthma and respiratory illnesses are already at high levels would be especially at risk.

So in conclusion, the longer we delay the more emissions we spew. It is critical that we reduce vehicle emissions in order to decrease pollution and greenhouse gas emissions and thereby improve public health. Local governments cannot bear the cost burden of increased local government services due to increases in air pollution and global warming emissions

We strongly urge the US EPA to grant this waiver.

Thank you.

PRESIDING OFFICER GRUNDLER: Thank you. Feel free to submit your button for the record.

Next we hear from the City of Fresno.

FRESNO CITY COUNCIL PRESIDENT PEREA: Thank you. First let me thank you for being here today. I have sat in your positions many times so I know what you are going through in having to listen to a lot of testimony and you only have seven more panels to go. Because I know what you're going through and since we're getting close to lunch I'll be brief.

First let me start again by thanking you for being here in California. We appreciate having the opportunity to comment today on this very important issue for many of us in the state, but especially for us in the Central Valley.

I come to you today wearing two hats. One as the Council President for the City of Fresno, with a population of over a half-million people, and a governing board member of the San Joaquin Valley Air Pollution Control District.

Now what I can tell you about the San Joaquin Valley is that the issue of air pollution and global warming is at the center of a very hot debate at the local level. It is an issue that is in the hearts and minds of every constituent throughout the San Joaquin Valley. And every study and poll that is done by, whether it's newspapers,

universities or public policy institutes, will tell you that's true.

And because it is such a big issue in our community local elected officials are responding to that in many different capacities. At the local level what I can tell you, what we're doing at the City of Fresno and many other cities throughout the valley is that we are rapidly converting our fleets to alternative fuels. We are adopting strict, green building standards and we are also using more solar energy.

In fact just two weeks ago the City of Fresno decided to move forward on the largest municipal airport solar installation in the country. And we are continuing to do so at a rapid pace because of the issues and the concerns that are being raised by many of our constituents throughout the San Joaquin Valley.

Now let me take off my City of Fresno hat and put on my Governing Board Member hat for the Air District. What I can tell you as far as the Air District is we are doing our best and working hard to make great strides on a more regional level.

Just a few examples of some of the things that we're doing in the San Joaquin Valley is we are beginning to regulate farmers in a much more strict way. Depending on who you talk to some say it's not strict enough but we think

we're moving along in a very meaningful way. We are requiring -- prohibiting people to burn their fireplaces on certain days when the ozone and the air pollution is specifically bad. And we also have adopted the Independent Source Rule, which is the first of its kind in the nation that applies to home builders and holds them accountable for the air pollution that their land developments create throughout our community.

But the one thing we recognize is that much more needs to be done. The challenge that we face in the San Joaquin Valley, like many other communities, is that over 60 percent of our pollution is caused by mobile sources. Now of course as you know this is a source that we have no direct control over. We are doing our best to be creative and that is where the ISR rule came in, to try to mitigate some of the pollutants and CO2s that emit from mobile sources, but we don't have that direct jurisdiction.

So we need your help. We really need your help so that California can then set its own standards so that local agencies like mine can then do its share to make sure that we are holding ourselves accountable for the pollution that we create through local decisions that we're making, whether it's through land use, whether it's through, you know, different rules or regulations that we adopt as Governing Board Members. By granting this waiver you give us, you

empower local residents to do more at the local level.

I just want to leave, end with just a couple of statistics that I hope you'll keep in the back of your mind when you're making this decision, because it's a big decision, and these are statistics given to us by the American Lung Association. That is that Kern, Fresno, Tulare and Merced Counties are among the top ten counties in the nation for the number of at-risk people exposed to dangerously high levels of ozone pollution. Five of the valley's eight counties are on the 2005 top 25 worst polluted counties list.

Children in the Central Valley are more than 35 percent likely to have asthma than their national counterparts. And as a consequence one-third of children with asthma in the valley miss one or two days of school every month, leading to more than 800,000 absences a year and a loss of $26 million per year in valley schools. In addition nearly 12,000 people in the San Joaquin Valley Air District are hospitalized each year for asthma, including more than 5,000 children.

My request again is simple. Just give us the opportunity, give us the tools to manage and change our own destiny. Our district is in the process and we have a request in to the EPA to go into an extreme attainment designation. Our problems here are serious, they are

critical, and it is the biggest public health concern in the Central San Joaquin Valley. Please help us help ourselves. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much, Mr. Perea.

Now from the Sacramento Air District, Brigette Tollstrup.

MS. TOLLSTRUP: Thank you. Thank you for the opportunity to speak today on this critical topic. My name is Brigette Tollstrup, Program Coordination Division Chief at the Sacramento Metropolitan Air Quality Management District. Our district is one of 35 local air districts in California and our area of coverage is Sacramento County, with a population of nearly 1.4 million residents.

The Sacramento Air District is the lead district in the Sacramento Region for efforts towards attainment of the National Ambient Air Quality Standards. Over the years we have made great strides in reducing air pollution. Our nearly 100 employees are in the trenches every day continuing to make progress. Our federal eight-hour ozone plan will require even more programs and we are developing strategies to help Sacramento meet the 2006 PM2.5 standards.

While we have a dedicated and effective staff working toward meeting current criteria pollutant standards we now face a new and more daunting challenge, dealing with

greenhouse gas emissions. We have been tracking this issue for years through our membership in the National Association of Clean Air Agencies and through the leadership on the issue shown by the State of California.

In 2006 our Board of Directors adopted a forward-looking policy outlining steps to begin to address this new challenge. Global warming will work against our previous ozone attainment efforts and these negative impacts on air quality are one of many reasons to take every step possible to reduce emissions. Projections show that even under the most optimistic scenarios local average temperatures and the length of high temperature episodes will both increase, resulting in more exceedences of state and federal ozone standards. We simply cannot stand quietly by and allow our hard-won successes to be undermined by this new challenge.

I would like to outline for you the serious initiatives that the district and our partners in the local community have undertaken to address greenhouse gas emissions.

Like many districts in California we have been a focal point for local efforts to address greenhouse gas emissions. The leadership of our local elected officials are advancing greenhouse gas policies in their jurisdictions and encouraging support of others through their representative associations, including the National Mayors'

conference.

In coordination with local cities and counties and our electric utilities a local group has been meeting for nearly a year developing strategies and program that can be implemented locally to lower greenhouse gas emissions. Global warming was identified as an important regional issue on a recent 400-person lobbying trip to Washington DC sponsored by the Sacramento Metropolitan Chamber of Commerce.

Our air district has taken many steps to meet our own obligations. Over 70 percent of our employees carpool or take alternative transit to work, we are part of the local utility's green energy program, and all of our fleet vehicles are hybrids. We continue to evaluate new opportunities for reductions. We believe we can make a difference. But every level of government must do their share and implement aggressive greenhouse gas reduction programs and initiatives.

AB 1493, the California Clean Cars Law, was passed in 2002 to reduce greenhouse gas emissions from new passenger vehicles and to improve local air quality. We encourage EPA to grant the waiver authorized by the Clean Air Act, approving California's AB 1493 emission standards. This is a critical part of the state program. With your approval California will continue to lead the nation to new,

cost-effective solutions to reducing greenhouse gas emissions and global warming impacts on our local air quality. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you. Questions? Thank you again for all your testimony.

We're going to do one more panel and then break for lunch. I'd like to invite Panel 6 up.

We'd like to begin with Secretary Curry from the New Mexico Environment Department.

SECRETARY CURRY: Thank you for having me here today. My name is Ron Curry and I am Cabinet Secretary of the New Mexico Environment Department. I insist on bringing you greetings from Governor Bill Richardson today. He wishes he was here.

Global climate change is an extremely important issue to New Mexico and in New Mexico the lifeblood of our state is water. We simply don't have water to waste in our state and that is why Governor Richardson has taken a strong stance on all issues relating to global climate change.

In the summer of 2005 Governor Bill Richardson issued an Executive Order setting greenhouse gas emissions reduction targets for New Mexico. The goals are to reduce greenhouse gas emission to the year 2000 levels by the year 2012, to reduce emissions tn percent below 2000 levels by 2020 and 75 percent below 2000 levels by 2050. To meet this

2020 target we needed to reduce emissions by about 37 percent in a business-as-usual scenario.

One of the most important things that the Governor did and the State of New Mexico did was to establish the New Mexico Climate Change Advisory Group. after a year and a half of hard work this diverse group of 40 people, and I want to emphasize that word diverse. They came from industry, environmental groups, local and tribal governments and they developed 69 greenhouse gas emissions reduction strategies.

And they didn't do that by all singing Kumbaya and holding hands with each other. It was a very diverse group that talked very straightforward with one another. They came up with the 69 recommendations. And what was impressive about the 69 recommendations was that 67 of them were unanimous.

And there were included people from industry, the oil and gas, there were car dealers there, the dairy industry. So we are very proud of the process in New Mexico that the business leaders and the environmental leaders in the state not only looked at the environmental issues but the economic issues. And we continue to press the importance of the economic issue when looking at the greenhouse gas emissions, period.

One of the unanimous recommendations from the

advisory group is the adoption of the California greenhouse gas emissions standards for vehicles. In New Mexico transportation ranks third in the production of greenhouse gas emissions. Emissions in this sector are expected to grow faster than any other if conditions continue as they are now.

In New Mexico the coal burning generating plants are our number one source of greenhouse gas emissions and number two in New Mexico is the oil and gas industry, which provides between a third and a half of our revenues for our state government and our public schools. So it's an interesting group of people. Again referring back to the panel of 40 diverse people that we are very proud of because they hammered these issues out.

The standards for the California clean standard were determined to be the most cost-effective. In addition these standards will reduce transportation-related emissions approximately 30 percent by 2016 and will keep an estimated 10.5 million metric tons of carbon dioxide pollution from being released into New Mexico's air. It is evidence that if we are prohibited from adopting the California greenhouse gas emission standard we will not meet the Governor's greenhouse gas emission reduction target for New Mexico.

In the absence of a strong, national climate program, Governor Richardson is pushing for regional

solutions. On February 26, 2007 he signed a memorandum of understanding with Governor Arnold Schwarzenegger and the governors of Arizona, Washington and Oregon, creating the Western Regional Climate Action Initiative. Most recently Utah and British Columbia became members and we expect the membership to grow.

There is no reason for the EPA not to act quickly since California has met the criteria for receiving a waiver of federal preemption. They have determined that its motor vehicle emissions standards are at least as protective of public health and welfare as applicable federal standards. That it needs such motor vehicle emissions standards to meet compelling and extraordinary conditions and that California standards and accompanying enforcement procedures are consistent with the Clean Air Act.

Climate change could seriously impact public health and the environment of California; not to act on reducing emissions from the number one source of greenhouse gases in California would be arbitrary and capricious. Compelling and extraordinary conditions already exist as we are now seeing the effects of climate change globally. California's request is completely consistent with Section 202(a) of the California -- of the Clean Air Act.

Urgent action is needed to address the largest sources of greenhouse gas emissions in the nation. Yet EPA

after 18 months has still made no decision on the waiver. The matter is urgent and we cannot afford to wait. The EPA and the Bush Administration, we feel, have failed to effectively address climate change. It would be reprehensible to bar the state from taking action to reduce greenhouse gas emissions. The EPA should approve the waiver so states can do their job of protecting the health and welfare of their citizens.

We applaud the leadership and the work of the California Air Resources Board. We went to Congress as well in the last two months to discuss our concerns and again talk about the processes that we have used in New Mexico to come up with these conclusions. So we ask you for your help so that New Mexico can also move forward on this by the end of the year.

We joke in New Mexico -- and I say joke. It was brought up by a member of Congress when I had the opportunity to testify there in March. He asked if our concerns about greenhouse gas emissions were such that we were worried about New Mexico having a beach someday. And I retorted that we had plenty of sand but we wanted to leave it that way. We didn't want to see the water lapping up on the shores of Albuquerque.

And with that I ask you very humbly and sincerely to go ahead and grant this waiver. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Secretary.

Mr. Skelton from the North East States, proceed.

MR. SKELTON: Good afternoon. My name is Erik Skelton and I am here today representing the North East States for Coordinated Air Use Management or NESCAUM. NESCAUM is an association of state air quality agencies in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont.

California's December 21, 2005 waiver submittal provides a solid demonstration that its greenhouse gas emissions standards meet relevant criteria. NESCAUM and its member states therefore strongly support California's effort to move forward with its standards and we ask EPA to expeditiously approve the California waiver request.

Approximately 25 percent of total anthropogenic greenhouse gas emissions in the NESCAUM region come from passenger cars and light duty trucks. In recognition of this seven of the eight NESCAUM states have exercised their option under Section 177 of the Clean Air Act to adopt the California motor vehicle greenhouse gas emissions standards.

When the Northeast states implement these standards beginning with vehicle model year 2009 we project that they will reduce 27 million tons of greenhouse gases annually in 2020 and 39 million tons in 2030. This equates

to an 18 percent reduction in motor vehicles greenhouse gas emissions in 2020 and a 24 percent reduction in 2030 for our region.

The California program is a key linchpin in our regional efforts as well. In order to address greenhouse gas emissions from the region the New England governors have committed to reductions as part of the New England Governors, Eastern Canadian Premier's Climate Action Plan adopted in 2001. The goals of the plan are to stabilize greenhouse gas emissions at 1990 levels by 2010 and to achieve more significant reductions over the long term.

New Jersey's economy-wide greenhouse gas reduction legislation set similar goals. New York has spearheaded a regional initiative to reduce global warming emissions from large power plants. Given the transportation sectors' contribution to the greenhouse gas inventory, achieving the region's climate goals will require effective means to address the motor vehicle component.

The need for action is no longer in dispute, as again is confirmed recently by the world's scientists. I would refer you to the latest Intergovernmental Panel on Climate Change report on climate change impacts, adaptation and vulnerability. In terms of the specific risks of climate change for the Northeast states a study funded by the federal US Global Change Research Program noted that

global warming at the higher end of the projections would raise the average year-round temperature in Boston to a level currently measured in Atlanta, Georgia.

Associated impacts on the region could include more frequent and intense storms, increased damage in coastal areas from flooding, reduced revenue from traditional New England industries such as maple syrup and skiing as well as a variety of stresses on fishing grounds, forests and coastal ecosystems.

We believe that mounting evidence of the impacts of global warming necessitate immediate action to reverse the growth of greenhouse gas emissions from every sector, including transportation, as part of a comprehensive, state-led effort to combat global warming.

To assist the Northeast states in developing a viable strategy to reduce motor vehicle greenhouse gases NESCAUM's sister organization, NESCCF, which stands for the North East States Center for a Cleaner Future, conducted the most comprehensive study to date to assess the feasibility and costs associated with the introduction of technologies to reduce greenhouse gases from passenger cars.

The NESCCF study team, which included contractors that work regularly with the automobile industry, used state of the art computer modeling to evaluate 75 different technology packages on five vehicle types. The study team

also conducted a comprehensive cost analysis on the technologies evaluated.

The study found that cost-effective technologies exist to reduce motor vehicle greenhouse gas emissions for a range of reductions up to 55 percent. The study was designed to replicate a program that met the California greenhouse gas regulation requirements and restrictions.

The NESCCF study found that technologies currently in production such as improved air conditioning, variable valve timing and lift, six speed automatic transmissions and cylinder deactivation can be used to reduce motor vehicle greenhouse gas emissions by 25 percent. Much greater reductions up to 55 percent can be achieved through the use of more advanced technologies such as stoichiometric gasoline direct injection, hybrid electric and diesel vehicles.

Two-thirds of the technologies evaluated in the analysis are already in high volume production, defined as over 500,000 units manufactured per year. Examples of vehicles that are available today with these technologies include GM Tahoe, Suburban, Silverado and other models with cylinder deactivation. Honda Accord, Ridgeline, Fit and other models with variable valve timing and the turbocharged Volvo S60.

Recent high gasoline prices and the associated

high costs of operating vehicles have spurred automobile manufacturers to introduce some of these technologies at no additional cost to consumers. Other cars, SUVs and trucks are being planned that will include these and other technologies.

The recent supreme Court decision in Massachusetts v. EPA further supports the position in three important ways. First the Court determined that greenhouse gases fit well within the Clean Air Act's capacious definition of air pollutant. Second the court found unpersuasive EPA's argument that California's regulation of motor vehicle greenhouse gases would require it to tighten mileage standards. And third declared that EPA's steadfast refusal to regulate greenhouse gas emissions presented a risk of harm, both actual and imminent.

As you know on May 14 President Bush directed EPA and the Departments of Transportation, Energy and Agriculture to take first steps towards regulations to reduce gasoline consumption and greenhouse gas emissions for motor vehicles using the President's 20 in 10 plan as a starting point.

The President set a target date at the end of 2008 for completion of this process. Under this approach the earliest the federal government is likely even to be in the proposal stage for motor vehicle greenhouse gas standards is

well after the 2009 model year when the first low carbon California vehicles enter the market. Clearly the California program on the way now will achieve significant public health and welfare benefits many years earlier than a prospective federal program.

While we are pleased that EPA has now initiated the comment period and is holding this public hearing on California's request we are mindful that California submitted its request over 15 months ago. We are now hopeful that a positive decision is finally forthcoming from EPA. However, in light of the significant time that has already passed without constructive steps taken we strongly urge EPA to take final regulatory action on the greenhouse gas waiver request for passenger vehicles. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you.

Next we are going to hear from the National Association of Clean Air Agencies.

MR. GREENE: Good afternoon. I am Larry Greene, Executive Director of the Sacramento Air Quality Management District. I am here today on behalf of NACAA, the National Association of Clean Air Agencies, which represents the state and local air pollution control agencies in 54 states and territories and over 165 metropolitan areas across the country. I serve on the NACAA Board of Directors.

On behalf of our association I thank you for this

opportunity to testify on California's request for a waiver of federal preemption under Section 209(b) of the Clean Air Act to permit enforcement of California's new motor vehicle emission standards to control greenhouse gas emissions. NACAA is pleased to offer its strong support for full and prompt approval of California's request.

The state of California has traditionally led the national effort to reduce air pollution, dating back to 1963 when California adopted the nation's first motor vehicle emissions standards. Congress has consistently recognized and supported California's leadership role in its design of the federal Clean Air Act, which specifically authorizes enforcement of California-developed motor vehicle emission standards in California and other states subject to relatively minor procedural constraints. This provision has benefitted greatly not only California but the entire nation, allowing states to serve as laboratories of innovation.

In September 2005 after extensive research, consultation with the auto industry and public comment the California Air Resources Board adopted greenhouse gas regulations. The regulations meet the challenge laid out by Assembly Bill 1493 to achieve the maximum, feasible and cost-effective reduction in greenhouse gases for motor vehicles in a way that will not harm California's economy,

will be cost-effective for California's drivers and will preserve the right of any citizen to drive whatever class of vehicle he or she desires.

In December 2005 CARB requested that the US Environmental Protection Agency grant a waiver of federal preemption under Section 209(b) of the Clean Air Act to permit enforcement of California's regulations. This request has been pending before EPA for 17 months.

In the Clean Air Act Congress finds that the reduction of air pollution, including that which may have an effect on climate and weather, is the primary responsibility of states and local governments. Although the Act establishes a federal program to set minimum requirements to serve as a floor for state regulation it specifically authorizes more stringent state regulation.

While consideration of the potential adverse impact on commerce of many different state emission standards led Congress to preempt states other than California from adopting motor vehicle emission standards Congress does in Section 177 of the Act provide that each state can decide whether to enforce the federal emission standards or the at least as stringent California standards for new motor vehicles sold in-state. The federal government has no permissive role in this decision.

Since CARB's adoption of the greenhouse gas

regulations 11 other states, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington, home to 70 million people, have recognized the benefits of these rules and have adopted statutes or regulations that permit enforcement of California regulations in their own states.

However, these state programs cannot be enforced until and unless EPA grants California's request for a waiver. Thus EPA's failure to approve California's request in a time fashion vitiates states roles to protect the health and welfare of their citizens.

As established by Congress, and interpreted by EPA over the past 30 years, EPA's role in granting a waiver to California on a particular motor vehicle emission rule is narrow and deferential. EPA is not to substantiate its judgment for that of CARB as to whether a standard is too technically challenging or too expensive. Moreover, EPA may not base its decision on statutes other than the Clean Air Act or other policy considerations. Rather, EPA must grant California's request for a waiver unless it can demonstrate that the conditions of Section 209(b) of the Act are not met.

EPA must grant the waiver unless it can be shown by clear and convincing evidence that CARB acted in an arbitrary and capricious manner when it determined that the

addition of the greenhouse gas regulations did not render California's mobile source program considered, as a whole, less protective than the federal program.

Here it is difficult to imagine how regulating greenhouse gas emissions, where the federal program does not contain any parallel regulations, does anything other than make the California program even more stringent than it was before these regulations were adopted.

Given the fullness of the public process employed by California and the strength of the administrative record of support for California's decision there is no basis for EPA to determine that CARB's decision was arbitrary and capricious.

EPA must grant the waiver unless it determines that California no longer needs to maintain an independent motor vehicle emissions program. Under prior precedent the issue is not whether California needs a particular standard or whether any particular standard will significantly contribute to resolving an identified problem unique to California. EPA determined as recently as December 2006, one year after California submitted this waiver request, that there were compelling and extraordinary conditions warranting a continuing California vehicle emissions program.

In order to now reject California's waiver request

EPA would have to establish that something has occurred since that time that warrants the elimination of the California program. In this instance California has amassed an extensive record and documented its continued struggles with air pollution. With pollution from motor vehicles in particular and with global warming. There is nothing to suggest any significant change in circumstance.

EPA must grant the waiver unless it determines that California's motor vehicle program is not consistent with the requirements of Section 202(a) of the Act. Since California's program contains the same limitations as found in Section 202(a) the required consistency is established.

In its April 30, 2007 Notice of Public Hearing and Comment on California's waiver request EPA specifically solicits comment on three additional matters. NACAA will respond to each of these in our written comments as well. Our responses will offer further support for granting California's request.

In conclusion, California's greenhouse gas regulations and its request for a waiver are clearly in the public interest. The rules start the process of demonstrating that this country can address global warming and at the same time create jobs, enhance energy security, reduce our dependance on foreign oil and save money for the consumer.

The rules further provide a number of innovations that will allow California and the 11 states that have elected to opt into the requirements to continue to serve as the laboratory for development of national programs, consistent with the intent of Congress expressed in the Clean Air Act, thus providing a greater degree of robustness to the federal, multi-agency greenhouse gas decision-making process now scheduled for completion by December 2008.

NACAA urges EPA to respond to California's 2005 request without further delay and grant complete approval of the request for a waiver of federal preemption. Thank you for this opportunity to testify.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Greene.

We will take a break now and reconvene at 1:15. And we will stay here until everyone has an opportunity to present their views.

(Whereupon, the lunch recess was taken.)

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AFTERNOON SESSION

PRESIDING OFFICER GRUNDLER: We are ready to go with Panel 7, our science panel. And I'd like to ask Dr. Peter Gleick, Gleick to begin, from the Pacific Institute. Welcome.

DR. GLEICK: Yes, it's Gleick, thank you very much. And thank you both to the EPA and the Air Resources Board for inviting me. It's always a little dangerous, I guess, putting on a panel of scientists right after lunch but that was your schedule, not ours.

PRESIDING OFFICER GRUNDLER: We like science.

DR. GLEICK: Good, me too.

Let me begin by offering a little bit of my credentials. I'll submit written testimony and my CV will be attached. I am the Director and co-founder of the Pacific Institute in Oakland, which is an independent research institute. I am an elected member of the US National Academy of Sciences.

I have done quite a bit of work early on on the impacts of climate change on water resources, especially in the western United States. I am a MacArthur Fellow. And I have been asked by both the US government and the Intergovernmental Panel on Climate Change to review portions of the latest IPCC, as I am sure a number of my colleagues on the panel.

I am going to talk about two issues.

PRESIDING OFFICER GRUNDLER: Your parents must be very disappointed in you.

DR. GLEICK: Yeah. I'm going to talk about two issues and that is water and the rising seas and the impacts on California coastal communities and resources.

California's Legislature recognized pretty early in this waiver process, and the rulemaking record supports, both extraordinary and compelling conditions in California that make us especially vulnerable to climate change and the impacts of climate change.

In particular we have a very large coast, a very long coast, and coastal resources that are especially vulnerable to sea level rise and changes in storm patterns, changes in patterns of storms off the Pacific that hit the west coast. And our water resources are fundamentally tied to climate. The climate pattern in California is the hydrologic cycle and as the climate changes our water resources will change as well.

As noted I think in previous EPA decision the Air Resources Board has continually demonstrated the existence of compelling and extraordinary conditions. And I think the issue of climate change and the impacts on California support that.

In terms of the impacts of climate change, which

is I think going to be the focus of most of the panel here today, there is a very strong, scientific basis for understanding already what California can expect. There are over 1,000 peer reviewed scientific papers alone that address the issue of climate change on California water resources. Of course of particular interest to us.

The state is already beginning to think about mitigating and adapting to serious impacts on our water resources. The Governor has proposed infrastructure changes and management changes to deal with climate change and water resources. We are already thinking about how to deal with, if we can, rising seas and impacts on the coastal, on coastal communities. And I would argue that this waiver is a key part of that strategy for mitigating and adapting to climate changes that are probably going to be to some degree unavoidable.

But the key here I think is that there is a big difference between fast impacts and a big difference between slow impacts. And there is a big difference between large impacts and small impacts. And a key fundamental part of the state strategy to reduce greenhouse gas emissions is to change the impacts that we are going to experience from fast to slow and from large, hopefully to relatively small.

There are going to be thresholds, there are going to be things that don't happen for a while and then do

happen quickly. The degree to which reducing greenhouse gas emissions permit us to either avoid those thresholds or to put them off into the future and give us time to figure out strategies for adapting and mitigating is really critical to us.

I brought a few slides, I am going to show very few of them. I really just want to talk about three, I believe. Okay. Probably the best understood impact of climate change for California is going to be the loss of snowpack. You've heard a little bit about it already today. The science of how rising temperatures is going to affect California's snowpack is excellent. It is probably the best understood, highest confidence impact on water resources in the entire United States.

What basically the science is saying is that as it warms up in California we are going to lose more and more of our snow. What falls as precipitation is going to fall more as rain in the winter rather than snow. What does fall as snow is going to run off faster and earlier.

Now this slide shows two different scenarios for two different time periods. Lower emissions and higher emissions for the period from 2020 to 2049 on the left and lower and higher emission scenarios for the later period in the century, 2070 to 2099.

And the only thing I really want you to look at is

that first -- there are two points here. First of all we lose snowpack no matter what. A lot of snowpack. Which California water managers understand is going to complicate our lives enormously. But the other point to notice is that lower emission scenarios buy us both time and magnitude of impact. The emissions, the lower emission scenarios have slower loss of snowpack and less loss of snowpack. Basically this is bad news overall but it also points us to strategies for reducing emissions any way we can to reduce the impacts of these rising temperatures.

Similarly we worry about sea level rise. And very briefly, this is the historical record over the last 150 years of sea level rise in San Francisco Bay. It has been going up, it's gone up about nine inches over the last 150 years. This is that same record with the IPCC's projections over the next century, approximately. And it's a triangle. You can see there is an upper range and there is a lower range.

The difference between the upper range and the consequences for, for example San Francisco Bay, and the lower range, are enormous. It is the difference between unfortunately billions of dollars of impacts and perhaps hundreds of billions of dollars of impacts. Whatever we can do to get onto the lower trajectories for any of these impacts of climate change is a good thing.

There are going to be unavoidable impacts of climate change, we understand that. But we also understand how important it is to couple reductions in emissions with policies for adaptation and mitigation. And that is really the message. The message is, reducing emissions buys us time and it perhaps saves us lives and hundreds of billions of dollars of consequences.

Now the other people on the panel I'm sure will talk more about water, they'll talk about fires, about ecosystems. Let me just conclude by saying I think it is pretty clear that the law and the economics all support a granting of this waiver. I am not competent to comment on that. But I think it is also pretty clear that the science supports a granting of this waiver. And I would argue that further delay could potentially be seen not as a scientific issue or a legal issue but as a political one. And I urge you to promptly settle the review and to grant the waiver. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Dr. Gleick.

Dr. Bales.

DR. BALES: Is this on?

PRESIDING OFFICER GRUNDLER: No.

DR. BALES: I'll just talk.

PRESIDING OFFICER GRUNDLER: Press the button at

the bottom of the base.

DR. BALES: I see. How about now? That must be on now. Thank you. Thank you also for receiving my testimony today. Let me also first introduce my qualifications to speak on the subject of the unique vulnerability of California's Sierra Nevada snowpack to climate change and the critical impacts.

I am a professor at the School of Engineering and the Sierra Nevada Research Institute at the University of California in Merced. And if you don't know where Merced is it's south of here in the Central Valley. I joined this newest and tenth campus four years ago as a founding faculty member. Before that for 19 years I was a professor of hydrology and water resources at the University of Arizona.

I am a fellow of the American Geophysical Union, the American Meteorological Society and the American Association for the Advancement of Science. And I have published over 100 papers on the subjects related to what I am talking about today.

My primary field of research is the hydrology and climate of seasonally snow-covered mountains. I have carried out research in the Sierra Nevada for over 20 years and have supervised about that many masters and PhD theses on research there. I also do research on polar, using polar ice cores.

Now I want to draw on material from a paper that my colleagues and I published last year that presented evidence that the Sierra Nevada water cycle is on the threshold of three important changes, and try to attach a few numbers to that, and on the dramatic effect these changes will have on the water resources of California. These changes, as Peter mentioned, are shift from rain to snow (sic), earlier snowmelt and more severe flooding.

I am going to talk about these three figures, which illustrate those three points.

The Sierra Nevada snowpack is on the threshold of change because it is a relatively warm snowpack; in contrast to say the Colorado Rockies, which are a much colder snowpack. That is, a lot of the snowfall occurs at temperatures just below freezing. So a three degree Celsius or five degree Fahrenheit increase in the average temperature, well within projections for coming decades, could shift about one-third of this precipitation from rain to snow. This is strictly based on data, historical data, not on climate model forecasts.

And this same temperature increase would result in about 60 fewer days with average temperatures below freezing. That means the snow will melt earlier, it won't come as early in the fall, it will melt earlier in the spring and we may have melts during the winter season too.

That is the winter will be about two months shorter.

Now the Sierra Nevada -- I'm going to switch to the next slide. There. I'll switch to this one then I'll switch back.

The Sierra Nevada snowpack currently stores about 14 million acre-feet of water. I hope people are familiar with that term. But let's just look at the relative numbers. Thirteen-and-a-half million acre-feet in the terminal reservoir, the big foothill reservoirs in the Sacramento Valley, 11 million acre-feet. It's of comparable magnitude. Snowpack storage is not something that we can -- our reservoirs -- All this change in snowpack storage is not something our reservoirs are built to handle and it is of comparable magnitude to the reservoir storage in the Sacramento or San Joaquin Valley. Now let me go back if I can. Thank you.

Looking at the flooding issue. One of the consequences associated with changes in snowpack, the range of snow transition, the earlier melting, will be more severe flooding. Particularly in the central and southern Sierra Nevada where historically precipitation falls largely as snow. In some of these southern Sierra basins almost over 90 percent of the precipitation is snowpack.

With this -- Again, with this three degree increase in temperature nearly half of the larger storms in

the central and southern Sierra that are currently snowstorms, these big snowstorms will become rainstorms. And they could well be rain on snow storms, which is our worst type of flooding event associated with snow.

So California's dams and reservoirs are not designed to contain this increase in severe floods. In fact, they are already taxed by the occasional severe rain on snow storms, storms that will become more prevalent under a warmer climate.

Looking downstream, dams and levees that were built to contain these historical 100 year floods won't provide the same level of protection in a warmer climate, with real and severe consequences for the Sacramento-San Joaquin Delta, Central Valley cities, agriculture and the statewide economy.

So consequences for the reliability of California's water supply, the health of forests in a warmer and drier climate. If the water runs off earlier you get a drier climate in the summer and you get more severe fires. The sustainability of the Sierra Nevada communities subject to increased fire danger is also severe.

Now the geography, the geology and the engineering constraints limit California's ability to provide structural solutions to mitigate these changes in the snowpack. Our Sierra Nevada snowpack is critical but an especially

vulnerable resource, very sensitive to temperature increases. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much.

Dr. Torn.

DR. TORN: Thank you. Is this on?

PRESIDING OFFICER GRUNDLER: Yes.

DR. TORN: Okay, thank you. My name is Margaret Torn. Thank you very much for the opportunity to speak to you today. I am a staff scientist at Lawrence Berkeley National Laboratory where I am head of the Climate Change and Carbon Management Program and I am an adjunct professor in the energy resources group at UC Berkeley.

I have been conducting research on climate change for about 20 years, much of it on wildfire, and I have published several scientific papers on the effect of climate change on wildfire severity in California. And I contribute to the National Interagency Climate Change Science Program as a member of the science steering group for the North American Carbon Program and as a member of the ecosystems group.

And I want to make three points today, they are fairly simple. One is that wildfires are one of the major natural disasters in California. Two, that wildfire severity is a function of climate and the kinds of changes that are predicted in climate will make wildfire severity

worse in California. Third, that the way the amount of damage, the amount of risk depends on how much climate change we have and therefore a safer future depends on reducing emissions and reducing climate change.

So as I said, fire is a major natural disaster regime for California. Every year we have a lot of large fires. The average total area burned in large fires is 400,000 acres a year but in a bad year that can be two or three times that number so one percent of the state's area. And if you look at average annual damages and suppression, especially -- in an average year you're at something like $800 million. One single fire like the fire in Southern California in 2003 in October had $2 billion worth of damage.

And there are other losses as well of course besides property losses and suppression costs, casualties and injury. Fires are a major source of air pollutants. They lead to erosions and landslides. During periods of high fire danger, even without fire, logging and other economic activities are restricted in high fire danger areas.

And then fire is also a defining part of California's ecosystems. Fire is a major source of mortality but it is also a major source of regeneration. So it can be a very positive force but it helps define

ecosystem structure and function for the state.

In the last three decades wildfire frequency in the west has increased four-fold. And that was documented very nicely in a paper in Science published last year by Tony Westerling. And he looked at what this increase was attributed to and it was attributed to climate trends. He looked at other possible causes such as land use history but that does not increase this increase. What does explain the increase is warmer summers and earlier snowmelt that leads to drier conditions and more flammable forests like we heard earlier. And I would note that also as we heard, those are exactly the kind of conditions that are predicted to become more common, more prevalent in California.

I'll talk a little bit about severity, I mentioned that word. I just want to say what it means. We use it to mean how much area burns or how hard it is to suppress fires. How much time the state spends in a period of very high fire alert, which as I said restricts activities and costs some money in its own right. And how much property or ecosystem damage is done by fires. And those are all outcomes of great concern to California.

So as I said, climate has a big effect on wildfire severity. It affects the ease of fire starts, how easy it is to start a fire. Although starts in California are mainly anthropogenic. But whether a fire takes off. How

hot fires burn and how fast fires spread and that depends on temperature, precipitation, wind and humidity. And we look at predictions. Those are all predicted to change in most of the state in ways that will make wildfire conditions worse. And if fires start make fires spread faster and harder to suppress.

So it's as if we are looking at this wildfire danger sign. You have probably seen things like that so you are intuitively familiar with the importance of conditions, weather conditions for fire. Say we were in medium. We can be pushed up to the next higher level. If we would have been in -- now I can't read this anymore. But from high danger to extreme danger. And that is the risk that we face if climate change is unabated.

Now it is very difficult to predict the exact future fire damages because the outcome in any given year depends on when and where fires start combined with the variability of climate in any given day and place. But what we do is look at statistics and say that continued climate change is going to increase the number of days with severe fire danger and increase the length of the fire season.

But we can go farther than that and we have. For example in a recent analysis we actually used models of fire spread and fire suppression to look at predicted changes in climate in different regions of California. And what we see

is that because fires are predicted to burn hotter and spread faster they are much harder to suppress. They escape initial attack suppression. And fires that escape are the fires that can go on to become catastrophic fires. Those are the large fires that do all the damage.

What we found was that with continued high emissions the number of potentially catastrophic fires in California, and this was for Northern California, will double. We've redone the exercise also for Southern California and again see very high rates of increase in what's predicted to occur for escape. So those are the number of fires that could become large fires. And I will say that that increase occurs even though we let fire suppression be ramped up in those scenarios.

So how bad will it be? It certainly depends on how much climate changes and how fast. So as you can see from this graph, what you also saw earlier in the morning, the increase in the number of large fires depends on the emission scenarios. That yellow bar is lower warming range, the blue bar is medium warming range. And since more emissions will give more warming we can see that the higher warming or higher emissions have much higher increase in fires.

The other thing to notice here, it was probably already mentioned, is that the fire in the photo in the

background there is that Southern California fire in 2003, October, that I mentioned. Those are pollution plumes. Those are aerosols, CO, other species that help form smog in the state. And they happen to be going offshore here but you can see how big an effect wildfires can have on air quality over a very large area.

So this is the question, I think. In California we spend a lot of time and a lot of area of the state in very high fire danger. We have a long fire season. And the question is, where will climate change put us on this graph. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much.

Dr. Mike Kleeman.

DR. KLEEMAN: Thank you for the opportunity to present testimony here today. I'll begin as others did with a quick summary of my qualifications in this matter. I'm a professor of civil and environmental engineering at the University of California at Davis where I teach undergraduate and graduate classes. I've earned a bachelor's degree in mechanical engineering and then master's and PhD in environmental engineering science from the California Institute of Technology.

I have published more than 40 papers on urban and regional air pollution problems with a focus on ozone and airborne particles in California. I'm a principal

investigator for three current projects funded by the US EPA and the California Air Resources Board dealing with climate and air quality in California and I am an expert in those areas.

There's two main components of photochemical smog, those being ozone and airborne particles. And the health effects I'm sure are well known to you at this point from both of those pollutants and so I won't deal with them other than to say that California routinely exceeds the accepted health-based standards for these pollutants and we have to do something to protect public health.

I am going to focus my comments on ozone today because I believe that the weight of scientific evidence, even at this early stage, supports robust conclusions in that matter related to climate change.

California has the world's sixth largest economy, depending on the year that you measure it, and all of this activity is taking place in some very confined air basins. The South Coast Air Basin labeled on this map is home to Los Angeles with a population of around 15 million people. That means that approximately 1 in every 20 people in the United States lives in Los Angeles. So it's a very significant number of people living in that air basin. It has arguably the worst air quality in the United States as well. The San Joaquin Valley, a slightly larger air basin, is home to 3

million people. It is one of the most rapidly growing areas in California right now.

And no other place in the United States has the level of economic activity, the level of population, in such confined air basins. So there's a reason that California has such severe air quality problems, because we have all this economic activity in such well-confined air basins.

So how will climate change affect air quality in California? Well, the confined air basins are only one part of the problem. When the weather patterns produce stable atmospheric conditions we have a very stagnant atmosphere and we trap all of those emissions close to the earth's surface where we will breathe them.

By definition then it means that climate change will have an effect on air quality in California. There's temperature and relative humidity effects to consider, cloud cover. All of these things related to climate change will influence the air quality system. In order to try to understand what the dominant effects are we try to use model calculations and we try to look at the historical measurement record to try to understand in which direction climate change will push those things.

What I am showing you here is one example of a study where we predicted ozone concentrations for Los Angeles. And this is a typical episode, a severe

photochemical episode in Los Angeles. We're looking at the predicted one-hour concentrations of ozone in the region. And the health-based standard, one health-based standard that one could look at would be 90 parts per billion as an acceptable level and we can see that we're almost three times that level. I show this to you to emphasize that this is a well-studied episode. It has been the focus of many publications. And we think that we understand the dynamics that produce ozone formation in this episode.

The question then would be, what would happen if we would increase the temperature in that episode by five degrees? What would we see? And just due to the chemical reactions speeding up and the thermal decomposition of some chemical reservoir species we get an additional 60 parts per billion of ozone in this episode due to that increased temperature.

Now there are other things that happen at the same time. It's not just the effect of climate on chemistry that matters, there is also an effect on increased emissions. We know that biogenic emissions from plants increase at hotter temperatures. We know that evaporative emissions from mobile sources increase at hotter temperatures. And we expect that power plant emissions of oxides of nitrogen will also increase at hotter temperatures due to increased electrical demand. And those higher emissions will

generally then lead to higher concentrations of ozone.

It's actually worse than that because the background ozone levels are also increasing over time. If we look at the record, the measured record of ozone concentrations that are blowing into California from upwind sources, just sort of background ozone concentrations, those are going up over time due to various effects, emissions worldwide. And we expect that trend to continue.

Any ozone that blows into California adds to the ozone that we produce locally. The majority of our ozone currently is produced locally but every increase in the background ozone concentration reduces the amount that we can afford to produce before we impact public health. And so the status quo isn't enough. We really have to address this problem, it's changing over time.

This is a study performed by Harley and coworkers at the University of California at Berkeley where they looked at the combined effect of these different changes that will happen in the future related to climate and emissions controls and tried to see what the dominant effects were. And I want to point out several things on this plot. The first one is the effect just of temperature, here shown in this first cluster, on the ozone concentrations in Central California for Fresno, Sacramento and the Bay Area. And we're looking at the percentage

change of ozone. Increased temperatures in the future are expected to increase ozone concentrations and that's consistent with what other studies have shown.

The emissions effect of biogenic VOCs is also present. You can see that the effect of increased temperatures in the year 2050 on emissions from plants will increase ozone concentrations. And the boundary conditions will also go up over time and that increases ozone concentrations as well.

California is combatting this problem with emissions controls and so you see here the fourth column shows a large negative change in the ozone concentrations and that is due to the anticipated effect of the emissions controls that California is going to apply.

What I want to show though, I want to contrast the magnitude of that change in the concentrations that's driven by the emissions controls to the change that climate would mitigate onto that system. And so the final cluster here shows the combined effect of simultaneous changes in emissions controls and then the climate penalty that is imposed. And what you can see is that the climate changes that we see happening in the future are of sufficient magnitude to completely offset all of the emissions benefits that we gained in the Bay Area. And to reduce significantly the benefits to ozone concentrations in the other areas, in

Fresno and Sacramento in Central California.

And so that means that California will have to work harder. California will have to implement additional emissions controls in order to offset the climate penalty that we see coming from climate change.

So just in conclusion, California's air basins currently exceed the health-based standards, we have to do something. Background ozone concentrations are going up over time and the status quo is not enough. The weight of scientific evidence suggests that temperature will increase in California and this will have impacts on ozone concentrations and it will impose a climate impact on California, or a climate penalty on California, where we have to reduce emissions even further in order to achieve the same level of ozone control in the state.

With that I'll thank you.

PRESIDING OFFICER GRUNDLER: Thank you for your testimony.

Next I'd like to invite Dr. Louise Jackson to present. Welcome.

DR. JACKSON: Thanks for inviting me here and thanks for the opportunity to speak. My name is Louise Jackson. I am a professor and extension specialist at the Department of Land, Air and Water Resources at University of California at Davis. I am also the Orr Chair in Plant

Environmental Sciences. For most of my career I have worked on ecosystem processes in agricultural and grassland systems in California and I'd like to speak today about the impacts that I believe are very serious for California agriculture.

Agriculture in California only produces less than eight percent of the greenhouse gas emissions at present. But agriculture will suffer a disproportionately large impact from any results of climate change. That has a big impact on the United States as a whole.

California has the most productive area in the United States in terms of agriculture. It produces half of the nation's fruits and vegetables, 19 percent of the dairy. And about 85 percent of California agricultural products are used within the United States.

We have many diverse commodities with very unique growing conditions. You can see from the top ten that many are specialty crops. Crops that have special requirements for temperature and moisture that are hard to satisfy.

California agriculture supports a lot of employment, especially in the Central Valley, and many farms. So if there are impacts on agriculture from climate change California will definitely feel the pinch.

Some people have hypothesized, well maybe higher CO2 will increase plant growth, a benefit for agriculture. In reality the new studies that are coming out are showing

that we won't under most actual growing conditions see more than about a five to eight percent increase in vegetative growth due to CO2 enrichment. That's because other factors such as water are limiting.

The other big issue, especially for specialty crops, is that crop developmental responses are much more complex than a simple increase in growth from enriched CO2. One example is fruit trees. Fruit trees have winter chilling requirements. For example, fruit trees, we count those in chill hours, the number of hours per year that are less than 45 degrees, for example.

Already in the last century there has been a reduction of 50 to 500 hours per year in different growing regions in California. And you can see that that's a significant proportion of the hours required by fruit trees to flower and we're already seeing events such as in 2004 for peaches where low chilling requirements have prevented a good harvest of crops.

On the other side of the slide I've listed a number of factors that will affect California's specialty crops. For example tomatoes have reduced fruit number at temperatures of above about 100 degrees. For lettuce we might see higher growth rates in some of our cool season times of the year but bolting, which is the onset of flowering, can increase above about 70 degrees and there is

increased tip burn as well. So some of our coastal areas, even if they experience slight increases in climate change, may see problems for lettuce, which is one of our main crops in California.

For rice at higher temperatures we see reduced yields. I've already spoken a little bit about stone fruits. Chilling requirements, decreased fruit size and quality. Citrus is one of the crops that may actually benefit from climate change. What we might expect with citrus is to see the citrus production move further north because there's reduced frost losses during the winter. For grapes the speculations and models seem to suggest that we get premature ripening and reductions in quality and yield variability at higher temperatures.

There's a lot of unknown challenges as well. The newest research that is coming out is suggesting that water use will increase but that there is a unique response for each commodity. So even though there is some CO2 enrichment that might reduce -- that might increase water use efficiency the results of higher evaporation will increase water use.

As we just heard about ozone, it is likely to increase. And ozone affects not only humans but plants. Already we are seeing probably about a five to ten percent decrease in yields due to ozone as it stands today in the

Central Valley.

Crop pests are our biggest unknowns. Some diseases are likely to increase with warm, wet scenarios compared to warm, dry scenarios. For example, downy mildew in lettuce, which is a major pest. Insect pests are likely to be more likely to survive during winter but then leaf quality due to lower nitrogen, which is typical of plants growing under high CO2, might deter some of the damage. There might be some new C4 species, weeds that can grow under higher temperatures arriving in California. These are things we just don't know but have to plan for.

There is also in the cattle and dairy cows a likelihood of lower milk yield at higher temperatures of above 100 degrees.

This is an example of some modeling that was done for the Pink Bollworm in cotton showing that this insect pest, which is now just in the southern desert areas, if the winter temperatures were to rise to about 2.7 degrees Fahrenheit in the winter we'd see increased prevalence of that pest in the southern growing regions. If it increases to 4.5 degrees Fahrenheit we'll start seeing the pest in the Southern San Joaquin Valley where now it is not present due to the winter frosts that exist in the northern area.

So to sum up what I'd like to do is emphasize the fact that as global warming increases so do the impacts on

California agriculture. Agriculture is very sensitive to temperature change so that even small changes can have a big effect. Right now we are already seeing heat waves that cause crop damage, especially to specialty crops. But under high emission scenarios we'd expect to see double the heat waves that we will at lower emission scenarios. We would expect to see eventual loss of important commodities, especially at high emissions.

We are going to have to invest quite a bit of money into crop and livestock breeding for heat tolerance and possibly drought tolerance as well. One very likely issue is that land use will change. Specialty crops will move north and south and that is a big cost to industries that have whole production systems arranged in specific areas. And there is also some speculation that urbanization may increase if there is precariousness of different kinds of specialty crop production.

As we've already heard, dry scenarios are very likely to bring high economic costs in crop failure to agriculture. And the likelihood is we'll see some of our mainstay agronomic crops, such as alfalfa, cotton, rice, irrigated pasture that uses a lot of water, be replaced with either crops with lower water demand or other land uses.

We're going to need a lot of technological improvement for water conservation. And even more

expensive, as you just heard about, is the fact that there is going to be needs for levees and water storage to keep the deliveries going to California agricultural areas. Even if we have more water in the lowland areas we still need to deliver it.

So the conclusion that I would like to present is that when we are looking at high emission scenarios over the next 50 to 100 years for California agriculture they are likely to bring economic hardship, loss of livelihoods and instability of rural communities to California. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Dr. Jackson.

Dr. Dale.

DR. DALE: Thank you. My name is Larry Dale, I work at Lawrence Berkeley National Laboratory. I have been Associate Director at the California Climate Change Center for the last couple of years. And I'll report on some of the results of that work here largely related to water and to some degree energy use and the impacts of climate change on those production activities. I keep publishing all these papers and climate change studies but my mother will never be impressed with me, I think. (Laughter)

PRESIDING OFFICER GRUNDLER: Will you make sure your mic is on, please.

DR. DALE: Is it on?

As you have heard, water is essential to California's development. We are a semiarid state. We've got 35 million people here and none of us would be here if in one way or another we couldn't get some water either to agriculture or to the urban areas where we live. This development has been made possible by overcoming a fundamental mismatch in the timing of when water comes in the form of winter precipitation and snow and when we need it. We use about 75 percent of the water in the summer, largely for agriculture.

This mismatch has been resolved or is resolved by an elaborate system and a mix of both manmade storage, that's our reservoirs, and natural storage, which is the snow about which you've heard so much already.

Now climate change threatens half of that storage, which carries over the water when it comes and when we need it. If emissions continue unabated, as you saw the predictions are we're going to lose most of the snowpack. If we manage to curb emissions we can keep most of the snowpack. This is important. If we lose the snowpack we lose half the effective water storage used to bridge this time gap that I talked about.

This can have many adverse effects on the state, some of which you've heard. There's higher flood risk. Instead of that water falling and staying up in the

mountains as snow it can all come down in one big rush. This place could be underwater some day.

There will be more droughts. Under the climate scenario predictions that we've looked at using the climate models and the state models for water supply we see that over half the years would be classified as dry or critically dry years. That would mean lower divergence to farmers. In critically dry years now many farmers, many parts of the Central Valley that produce these crops that Louise was talking about would get no surface water supply.

Now the cost to the state of all these things, I'm an economist, I'm supposed to come up with a number. But the cost is likely to depend on what we do as a state. And the first reaction, in my opinion, is going to be an ironic one but we're going to increase the amount of electricity we use. Here we are trying to curb emissions, climate change is going to force us to increase electricity use unless we're careful.

This would happen because first farmers would do as they have always done in the past. When they don't get surface water they start pumping ground water. Enough years elapse and the studies we have done show ground water levels could be falling permanently 200, 300 feet down. That means a big increase in electricity use to get the water.

Similarly in urban areas the reaction will likely

be to increase desalination plants, recycling plants, both of which require large amounts of electricity. So do long distance transfers of water to the state.

Again, this is an ironic feature of what can happen because we'll be doing large efforts to curb our emissions but at the same time our demand is going to be growing.

In my opinion this reaction is not going to be sustained because I think we'll also do what we have done in order to avoid this for farmers and that is build new storage reservoirs. These are expensive but there is potential to do this. And if you want a number to hang on to as a notion of what the climate change can cost the state think of what it costs to build new storage in this state.

The estimates from the latest federal and state studies suggest the costs range between $700 and $4,000 an acre-foot of storage. The snowpack losses we've talking about average about eight million acre-feet of storage. So that's a number like $11 billion. That's a rough estimate of what it can cost the state due to climate change. If we curb emissions we can cut those costs in half.

So to sum up, water is essential to the economy. The snowpack is needed to bridge the timing of when water come and when we need it. Climate change can eliminate a lot of that bridge, a lot of that storage. And while the

economic impacts are hard to quantify, if we assume we're going to be building storage to make up for the loss of snowpack the costs can range up to $11 billion.

PRESIDING OFFICER GRUNDLER: Thank you very much. Any questions from the panel?

PANELIST HOROWITZ: I have a question for the entire panel. Earlier today we heard testimony from the auto manufacturers that there is no evidence that the greenhouse gas standards that we are talking about today, even if they were applied nationwide, would have any effect on the consequences of climate change that you have been talking about on the panel. Does anyone on the panel have any comment about that?

DR. GLEICK: I'll make a short one. It's wrong.

PANELIST HOROWITZ: Okay. Anything you can say to back that up or put in your written comments would be --

DR. GLEICK: Well sure. Other people have already testified with specific numbers but the transportation sector alone accounts for a very substantial fraction of national greenhouse gas emissions and a larger fraction of California's emissions. It is obvious these standards would have an enormous effect in the long run on reducing our emissions. You have also heard testimony from the other states that there are a number of other states willing to adopt California's standards as we move forward. It's one

piece of a large strategy to reduce emissions, it is not a silver bullet, but it's an important component of an overall strategy.

DR. BALES: There is no silver bullet but if you want to reduce greenhouse gases you look for sources of CO2 emissions that can be reduced and the transportation sector has to be part of that mix.

PRESIDING OFFICER GRUNDLER: Thank you again for taking the time to present such thoughtful testimony.

I'd like to invite the next panel, which is comprised of a number of non-governmental organizations. Please come up.

I'd like to remind everyone that these proceedings are being webcast so hopefully you've told your family members the website so that they can watch you. (Laughter)

I'd like to invite Mr. Russell Long to present the first testimony.

MR. LONG: If it's okay with all you I'd like to defer to Patricia Monahan at Union of Concerned Scientists who has, she has a previous obligation to leave.

PRESIDING OFFICER GRUNDLER: That would be fine.

MS. MONAHAN: To pick up my children so thanks for your accommodation. My name is Patricia Monahan. I am the Deputy Director of Clean Vehicles for the Union of Concerned Scientists and I am also the California Office Director. My

comments today are on behalf of UCS and our over 240,000 members and activists. UCS is a leading science-based nonprofit working on solutions to major environmental challenges like global warming. UCS's transportation program was born in California in 1991 and we have been working here for 15 years on policies and regulations to strengthen California's vehicle emission standards.

We urge EPA to allow California and the 11 other states to implement tailpipe emissions standards for global warming pollution from cars and trucks. Global warming is the gravest environmental challenge humankind has faced and you have heard from a number of reputable scientists on the impacts here in California, which are significant. By allowing states to act now we make it easier to avoid the most catastrophic impacts of climate change.

California's greenhouse gas standards for vehicles are achievable through fuels and technologies available today. California's standards require a 34 percent reduction in global warming pollution for cars and light trucks and a 25 percent reduction for larger trucks and SUVs within the next ten years. Auto makers can build affordable vehicles with existing technology that would meet or exceed California's global warming pollution standards. At UCS we have created a minivan design that shows how auto makers could meet the standards using a combination of vehicle

technology and low carbon fuels available today.

Our minivan, which we have dubbed the UCS Vanguard, runs on E85 fuel and features engine, transmission and vehicle designs available today. The Vanguard reduces global warming pollution by more than 40 percent, which exceeds California's emissions standards. This technology package would cost only $300 and would save the consumer over $1300 in reduced fuel costs.

All of the technologies in the Vanguard are in vehicles on the road today but auto makers have yet to combine them in a single package. We have a UCS Vanguard brochure that on the back, which I'll be submitting, has a list of all the vehicles that are available today with the package of technologies that we employed on the Vanguard.

This package can be achieved with no sacrifice in performance or size. And wince we're using off-the-shelf technologies we're not talking pie in the sky, we're not even talking hybrid. If you want to see more you can check out our website which has more detail on the features but I'll be discussing some of the more prominent ones on the Vanguard.

The Vanguard minivan design's key components can be found piecemeal in more than 100 vehicle models on the road today. The Vanguard uses conventional technology to achieve significant reductions in global warming pollution.

Here are some of the technologies that we employed:

Variable valve and timing on engines, such as the Honda VTEC. Cylinder deactivation, or as GM calls it, Active Fuel Management, which actives the cylinders when you need them. Automated manual transmission, which is in the Audi A3 and in several VW models like the Jetta. that blends the performance of a manual with the ease and convenience of an automatic. Six speed transmissions, which are in Ford Explorers and almost all BMWs. Air conditioning with better hoses and more efficient compressors. Improved aerodynamics and tires that reduce the load on vehicles. Electrification of components such as the steering on Acura's NSX. And flex-fuel capability to allow the vehicle to use E85. The technology package on the Vanguard can be used on the smallest cars to the largest trucks.

The Vanguard shows that global warming pollution reduction is possible with technologies and fuels used in cars today with no sacrifice required of the consumer. Vehicles meeting the standards have the same size, same acceleration, and same safety characteristics of higher polluting vehicles. And the consumer actually saves money.

We urge EPA to grant the waiver to allow California and the 11 other states who have adopted the standards to move forward immediately. By using technology already in vehicles on the market today the auto industry

can build no compromises cars and trucks that meet California's standards and the consumer's passenger-carrying, load-hauling and performance needs.

Historically auto makers have opposed basic safety and emission standards, making exaggerated claims about the cost of seat belts or catalytic converters. Auto companies need to look forward to a future with cleaner vehicles, rather than always looking into the rear view mirror at the past. It's time to make auto companies put their talented engineers to work on designing cleaner vehicles. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you.

Mr. Long.

MR. LONG: I'm Russell Long and I am speaking on behalf of the 80,000 members of Bluewater Network and Friends of the Earth today.

In January 2001 our organization developed a relatively simple legislative solution for reducing greenhouse gas emissions from automobiles. With Assemblywoman Pavley we introduced a bill that would reduce such emissions to the maximum, feasible and constant effect of extent possible. The goal was to prevent global warming by holistically targeting all of a cars' greenhouse gas emissions rather than focusing simply on tailpipe emissions as had been the practice with criteria pollutants. Our goal was also to provide continuing authority for the state to

make further improvements in the future.

And in deference to the auto industry's analyst's concerns about the need for regulatory flexibility there would be no specific mandates on how the industry should meet the targets. This approach would for the first time open the door to reductions in nitrous oxide emissions from catalysts, HCFCs from AC units, the carbon content of the fuels themselves, something that we're very pleased the Governor decided to act on last year, in addition permitting fuel efficiency measures such as engine and drive-train performance to meet any new standards set by the state.

Since we were pessimistic about federal action at the time we asked the state to use its unique authority to move this effort forward. And our hope was that if we succeeded other states would follow and this would eventually lead to the federal government -- lead the federal government to create a national standard quite similar to California's.

With so many states having now adopted the California regulations, and with Congress considering similar measures, we are very pleased that our original vision has been virtually borne out. During this process we pushed the Air Resources Board to consider all feasible alternatives for greenhouse gas emissions reductions, including the need to consider the use of plug-in electric

hybrids as well as alternative fuels as key elements towards creating a cleaner automotive sector.

At modest cost increases plug-in hybrids have the ability to reduce greenhouse gas emissions by 50 percent or more and continue to represent the most important area for short- and medium-term improvements in emissions.

And at this point I'd like address some previous comments by others. Once again the auto industry comments demonstrate the same doom and gloom attitude they demonstrated with seat belts as Patricia mentioned, with air bags, catalytic converters, unleaded fuel. They say, we can't do it, it's not feasible, it'll cost too much, it won't have any effect.

And today their pessimism has hit a new low with their approach to climate change. In essence their point is that even if this regulation were extended globally it wouldn't reduce global warming by any appreciable amount. Well first I would like to point out that much of the testimony and the comments by scientists and regulators that they cited were taken very much out of context so these need to be taken with a grain or perhaps a boulder of salt. This is true for Dr. Hansen's testimony as well as those by the New York and Vermont regulators.

Second, the Alliance fails to mention anything about climate tipping points. As many climate scientists

have noted, we are fast approaching a time when the planet could be tipped into runaway global warming. It is unclear exactly when that is but many respected researchers believe we are already dangerously close to that point. If we arrive there, there will be nothing that anyone can do to stop global warming. Every nation, every state, every industry, every citizen will have to do their share if we are to avert a catastrophe. Will that be enough? Nobody has that answer.

But unlike the auto industry, which seems to be arguing today that we should simply put our heads in the sands and hope the problem goes away by itself, we need to act now to protect our homes, our citizens, our jobs, our wildlife and our planet.

And the fact is that the projected amount of greenhouse gas emissions reductions from this regulation in California alone, let alone worldwide, is staggering. This is not a trivial reduction. As the global auto fleet approaches one billion cars, if this regulation were carried over to all new vehicles, global greenhouse gas emissions would fall dramatically from the baseline, representing significant progress in our fight to avert this problem. Plus the Air Resources Board does have continuing authority to tighten these regulations, which would allow us to dig even deeper.

Third, the Alliance has some explaining to do because in recent Congressional hearings they recognized that global warming is a problem. And they acknowledged the need to do something about it and they said this needed to be done on a national basis. How then can Mr. Clubok then claim today that there is nothing to be done. The Alliance testimony this morning was not only deceptive but inconsistent with what they are telling our federal legislators in Washington DC.

EPA has a long history of successfully working in conjunction with states, including California, to protect our air and water quality. Now is not an opportunity to strangle states rights. The EPA's job is to protect citizens and future generations so that we are not left with a Road Warrior future. That might be good for Hollywood films but it is not good for California citizens. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you Mr. Long.

Next I'd like to invite Tim Carmichael from the Coalition for Clean Air.

MR. CARMICHAEL: Good afternoon. My name is Tim Carmichael with the Coalition for Clean Air. It is a pleasure to be here. A thank you to EPA for having this hearing here in California and the one you had in DC and a thank you to all the people that have today to testify in

support of the waiver.

I had the privilege of working with Assembly Member Pavley and many of the people in the room in getting this bill that led to the regulation that we're talking about today through the California Legislature, signed by the Governor. And it was not something that was done lightly, it was not something that was done quickly.

And in fact there was a lot of participation by some of the auto makers. I think that is important to recognize in spite of the opposition today. Both through the legislative process and the regulatory process there was a lot of input, a lot of deference given to their perspective in how best to craft this program.

I have been thinking a lot about where this goes after today. EPA as an agency, this group and your colleagues, obviously have work to do relative to the scientific and legal questions. But I feel that the testimony has been very good in clarifying those points and giving you a lot to bolster our support of waiver approval.

But ultimately there is going to be a summary report that is going to go to the administrator and in all likelihood some version that is going to go to the White House. And I know that it becomes a public policy question, some would say a political question as to what the Administration does about this question.

And I have been thinking about the headline or the abbreviated version of the report back that at some level they are only going to see the headline. and to me what we've seen at the couple of hearings that you've had can be summarized in one line. California climate waiver: auto alliance opposed, everyone else strongly supportive. And I think that is really in a nutshell what you are going to get out of these two days and other correspondence that you're going to get.

And when I say, everyone else. You've had not just environmentalists that have been supportive of this for many, many years. You've had business leaders, including two of the biggest companies in the country testify in support. You've had elected officials from this state, you've had leaders from other states and you've had scientists. This is not a small subset of the population that is way out in left field on this issue.

In fact, and I'll just share just a couple of stats. In California the Public Policy Institute based in San Francisco is one of the most respected survey or polling groups that we have and they regularly do surveys on environmental questions. And just a couple of things that I think are insightful from their last year's survey.

They asked: How serious of a threat is global warming to the economy and quality of life for California's

future? And 79 percent of Californians said, very serious or somewhat serious. They also asked, excuse me. Would you be willing to see tougher air pollution standards on new cars, trucks and SUVs, even if this was more costly for the purchase or lease of your next vehicle? Two-thirds of all Californians said yes, even with the cost implications.

And lastly I want to share that they asked, because this is such a significant policy question and has been now for five or six years in California. They continue to ask about it periodically. And they asked specifically: What about the state law that requires all auto makers to further reduce emissions of greenhouse gases from new cars in California beginning in 2009? Seventy-eight percent of all Californians favor this law.

I encourage you to take back this message that you had the automobile alliance in opposition and everyone else strongly encouraging the EPA to grant this waiver. And I think that is the most important communication that can go up the chain. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you for your testimony.

Next, from the Natural Resources Defense Counsel, Roland Hwang. Welcome.

MR. HWANG: Good afternoon, thank you. Thank you for the opportunity to testify today in favor of

California's waiver request for it's motor vehicle emission control program under Section 209(b) of the Clean Air Act amendments. I am the vehicles policy director for the Natural Resources Defense Counsel based here in San Francisco. I represent NRDC and its 1.2 million members and activists in support of California's efforts to set standards for global warming pollution from new cars and light trucks.

Mr. David Doniger, policy director and senior attorney at the NRDC's Climate Center in Washington, DC previously testified last week on May 22 at the waiver hearing in Washington. He primarily addressed the legal standards that govern EPA's review of California's waiver request under Section 209(b). Our legal conclusion is clear, and this is also supported by our technical analysis to which I'll add more detail today. EPA has only one choice but to grant California it's waiver request. It must do so without delay. Mr. Doniger spoke about that last week. He also informed EPA in order to prevent further delay NRDC on May 21 joined with the Environmental Defense, a colleague of mine is sitting here, and the Sierra Club in notifying the agency of our intent to join with California to legally compel EPA to act if it does not issue the waiver by this fall.

In my testimony today I will supplement

Mr. Doniger's previous testimony by presenting our technical conclusions that support our legal conclusion. It is our belief that the program is technically feasible and cost-effective and there is sufficient lead time. Furthermore, events since the board's adoption in September 2004 serve to strongly reinforce this conclusion. These events include persistently higher fuel prices, a rapid consumer shift away from truck-based SUVs, continued development of clean car technologies and stringent new CO2 vehicle standards that are likely to be adopted in Europe. For these reasons we find there is no basis to deny the waiver under Section 209(b)(1)(C) as inconsistent with Section 202(a).

I'd like to start off my technical, the evidence I'd like to present to EPA with a survey of previous cost estimates or regulations on vehicle standards.

The auto makers claimed in 2004, back at the Air Resources Board hearing, that the cost of compliance in 2016 would be $3,000, ARB staff estimated $1,000. I think it is important when you look at these different cost estimates to review the past track record, if you will, of the various organizations involved in making these estimates.

In fact the difference in the cost estimates, based upon my survey of previous work including EPA's work on cost of compliance predictions versus actual for vehicle standards, my conclusion is that the $3,000 versus $1,000

estimates are consistent in actuality with what has happened in the past where that estimate in terms of the industry, auto industry estimates are two to ten times higher.

Earlier it was discussed about the Zero Emission Vehicle program and some of the cost estimates there. I do not believe that is a very good analogy for this program. The 1493 program, the California Greenhouse Gas Program, is about improvements to gasoline vehicle technology, it does not assume any kind of so-called advanced technologies.

As Ms. Monahan spoke of earlier, there is no need to employ advanced vehicle technologies to reach the standard that ARB has set for the 1493 program. This program in fact looks more like the Low Emission Vehicle Program which the Air Resources Board adopted in 1990 because it is in actuality improvements, incremental improvements to gasoline vehicle technologies.

And when you look at the past history of auto maker estimates of what those costs look like versus the actual cost the record has shown that the industry estimated the cost of the LEV program compliance in 1994, they estimated the cost to be almost $800. The actual cost turned out to be about $80, so in fact the auto industry over-estimated the cost of compliance for the Low Emission Vehicle Program by about a factor of ten. This should come as no surprise to folks who have worked in this field for

awhile.

The second point I would like to make is that we believe that the ARB staff assessment of the technology was very sound, and we testified to that in front of the Air Resources Board's Board Members back in 2004. And since 2004 the world has changed, and the conditions that have changed have led to us to reinforce our opinion that in fact the technological feasibility cost-effectiveness and the lead time has all more been more than adequately demonstrated by the Air Resources Board to comply with the waiver criteria.

There are at least four factors which have led us to conclude that since 2004 we have more evidence to believe that this is going to be, this program will be technically feasible, cost-effective and adequate lead time. The first is the higher fuel prices since 2004. ARB used $1.74, today we can see the prices around the country are about $3.20 a gallon. Even the Department of Energy's Energy Information Administration concurs that there has been a long-term structural shift in the oil price markets and their forecasts have also gone up. So clearly at $1.74 the program was cost-effective. At $3.20 nationwide and $3.50 here in California the program is even more cost-effective.

The second reason why we believe the program is even more cost-effective and the lead time is adequate is

that the higher fuel prices and other shifts in consumer demand has led to a very rapid shift away from truck-based SUVs. There has been a lot written about the rapid shift to so-called crossover vehicles and also to small cars, subcompact cars even. All of these trends point to that the ability for the auto companies to meet the standards are in fact eased by this market shift to these crossover vehicles and smaller cars.

The third reason is there has been quite a bit since 2004, a lot of developments in clean car technologies. ARB staff's presentation today noted that there are many of these technologies that are emerging or have been announced in the marketplace. And these include variable valve timing, cylinder deactivation, camless valve actuation, six and seven speed transmissions, continuously variable transmissions, gasoline direct injection engines with and without turbocharging, electric power steering, homogenous charge compression engines and advanced diesel engines.

Since 2004 these technologies have either been introduced or auto makers -- introduced by auto makers and suppliers or there have been major announcements about their introductions over the next several years. For example, GM has stated that one in six, or about 17 percent of its engines, will be gasoline direct injection by 2010. Another example of how fast evolving this technology is, late last

year Valeio, a French auto supplier, said that it expected to commercialize camless valve actuation technology by 2010 or 2011. And the final example would be GM, Ford, Nissan and i believe others all have announced their intentions to produce in the next several years HCCI engines.

The final development since 2004, which reinforced the technical assessment by the Air Resources Board, is that the European Union has announced, and it looks like they are very close to finalizing an agreement for a mandatory CO2 standard for their automobile vehicle fleet. That standard will likely be about 130 grams per kilometer by 2012. Though direct comparisons are difficult due to differences in vehicle fleet size and drive cycles, the 2012 standard is clearly more stringent that California's 2016 standard in terms of the auto company's compliance job.

To meet he standard auto makers will need to develop and commercialize for the European market many of the same technologies needed for the California program. Several years prior to when they will be needed for the California Clean Car state -- This will ensure the success of the technologies and also create larger economies of scale.

In sum my colleague, David Doniger, has already testified last week that our legal conclusion is clear. EPA has but one choice, that is to grant California's waiver

without delay. This supplemental comments demonstrate there is no technical basis to deny the waiver under Section 209 as inconsistent with section 202(a). NRDC also intends to file written comments by June 15 to supplement our oral comments. We appreciate this opportunity to present our perspective, thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Hwang.

Environmental Defense.

MR. WALKER: Good afternoon members of the panel. It is a privilege to be here and we thank you for holding this hearing. I am Derek Walker, Deputy Director of state Climate Initiatives for Environmental Defense. As most of you know we are a national nonprofit, non-partisan and science-based environmental organization and we have offices here in California in Oakland, Los Angeles and Sacramento. I respectfully offer my comments today on behalf of not only our numerous members in California who are deeply concerned about global warming but our hundreds of thousands of members across the country.

On December 21, 2005 the Air Resources Board requested this waiver for vehicles beginning with the 2009 model year. Californians entitled to such a waiver under Section 209(b) of the Clean Air Act, which was enacted in 1967 in recognition of this state's leadership in motor vehicle emissions control regulations.

209(b) compels the Administrator of EPA to grant California's request for a waiver unless he or she finds that one of the stated exceptions applies. The legislative history of Section 209, EPA's prior decisions on waiver requests and the court review of these decisions, clearly establish that EPA must be highly deferential to California and that grounds for denial are very tightly constrained by these statutory factors. As the DC Circuit Court found in 1979:

> "Congress has decided to grant California the broadest possible discretion in adopting and enforcing standards for the control of emissions from new motor vehicles."

EPA's past decisions have been consistent with this narrow scope of review, recognizing the tremendous benefit that our country has derived from California's expertise and efforts. It was 32 years ago that EPA administrator Russell Train explained that Congress disallowed EPA from second-guessing California's policy judgement. Administrator Train said:

> "Congress meant to ensure by the language it adopted that the Federal government would not second-guess the wisdom of state policy here."

EPA has similarly recognized that the phrase compelling and extraordinary conditions refers to general and fundamental circumstances including geography, climate and California's exceptional motor vehicle population, not, quote, "to levels of pollution directly." Consequently the Agency has concluded that the preemption waiver extends not only to regulations directed at Southern California's notorious ozone problem but to California's particulate control problem as well.

In its decisions on recent waiver requests, any suggestion that California did not need its own motor vehicle pollution control program have been readily dismissed. In action on California's preemption waiver request for the LEV II program, for example, EPA stated, quote, that:

> "CARB has continually demonstrated the existence of compelling and extraordinary conditions justifying the need for its own motor vehicle pollution control program. No information has been submitted to demonstrate that California no longer has a compelling and extraordinary need for its own program."

California unquestionably continues to face the

compelling and extraordinary conditions in its geography, climatic conditions, population and motor vehicle use. Just as EPA had no basis for denying waivers that allowed California to extend the scope of its programs to include particulate matter, the Agency similarly has no basis for refusing to allow California to broaden its programs to include greenhouse gases, given the serious health and welfare threats they are now known to pose to California's resources and to her citizens.

California is home to one in seven Americans and is the most populous state in our union. The state's population is growing rapidly and will increase by 60 percent by 2050. Furthermore, in 2005 we had 32.5 million registered vehicles, exceeding the number registered in any other state by a margin of almost two to one.

As in 1967 when Congress enacted the waiver protections for California, Californians also continue to suffer from some of the worst air quality in our country, and we heard some compelling testimony on that earlier. Thirty-eight of California's 58 counties are currently designated as non-attainment for the federal eight-hour ozone standard.

California's circumstances are also exceptional in the expertise and resources that our state devotes to air quality management. ARB's 2004 and 2005 budget was $130

million, with state and local agencies cumulatively pitching in an addition $550 million on air quality management activities. To put that into context, EPA's air program is only about $660 million -- I say only -- about $660 million. But compared to California I think that is a particularly relevant point.

Beyond these compelling and extraordinary demographic conditions, California is highly vulnerable t climate change. Our economy relies heavily on agriculture. The coasts are profoundly susceptible to sea level rise and the state's water resources are critically vulnerable. California, as we heard in the last panel, is extremely prone to wildfires, the incidence of which is expected to increase as climate change progress.

Moreover the challenge of reducing ozone levels in California, both in its cities and in agricultural areas, is expected to become harder as the climate crisis grows. As California laid out in the support document accompanying its initial waiver request, quote:

> "California's high ozone levels -- clearly a condition that Congress considered -- will be exacerbated by higher temperatures from global warming."

Thus, in addition to al the other compelling and

extraordinary conditions California is already facing this waiver request is intimately linked to the same, the very same air pollution problems that Californians were facing in the 1960s when Congress first considered and enacted this preemption waiver.

For our globe as a whole the expectation that surface temperatures will increase as climate change progresses is firmly established. California in particular is expected to experience warmer temperatures as climate change progresses in the coming decades.

Recently a regional scale climate model was used to downscale global climate simulations in order to examine projections for climate variables likely to affect air quality in the United states through the mid part of this century. Temperatures, solar radiation, rainfall, the stagnation of pressure systems and boundary layer ventilation were examined.

And the conclusion was reached that during the fall all indicators consistently suggest increased ozone concentrations will occur in the western part of the United States. The indicators of higher ozone pollution include warmer temperatures, increased downward solar radiation, lower amounts of rainfall, more frequent stagnation episodes and reduced ventilation. Summer temperatures are also projected to increase.

Higher temperatures are robustly linked to higher ozone concentrations based on both observations and on theoretical understandings of atmospheric chemistry. Recent global modeling studies that have investigated the impact of future climate change on surface level ozone concentrations concur in a basic conclusion that was stated by Murazaki and Hess in 2006, quote:

> "In general the impact of climate change alone -- on future ozone levels will be to decrease surface ozone in remote regions but to increase it in polluted regions."

In urban areas and in others with high levels of nitrogen oxides ozone is expected to increase with a combination of increased temperatures and an increase in water vapor.

Of course, no one expects climate change will occur without contemporaneous changes in the emissions of conventional air pollutants that directly impact local and regional air quality Without further intervention some of these changes and emissions will themselves be driven by climate change. For example, the increased emissions of NO2, carbon monoxide and fine particulate matter from the wildfires we've discussed, and increased emissions of volatile organic compounds from anthropogenic sources like fuel and solvent evaporation that are highly responsive to

temperature.

Other emissions changes could occur due to population and economic growth, regardless of what happens to the earth's climate. In particular these drivers are expected to dramatically increase emissions in Asia. global atmospheric chemistry and transport studies that have examined the combined effects of climate change and future emissions concur in the expectation that without further regulatory intervention ozone concentrations in the Northern Hemisphere will increase. Under some scenarios the projected increases in ozone concentrations are extremely dramatic.

Focusing on California, Aw and Kleeman in 2003 applied a state-of-the-art atmospheric chemistry and transport model to the South Coast Air Basin to examine the influence of changes in temperature on air quality. After evaluating the model they examined how predicted ozone concentrations would change if ambient temperatures were increased with no other changes introduced. Peak ozone concentrations were predicted to rise substantially as temperatures increased.

And Steiner recently, that's 2006, last year, recently applied EPA's Community Multiscale Air Quality, the CMAQ model, to examine the effect of climate change on the severity of a five-day pollution episode in Central

California. Their climate sensitivity cases were based on a regional climate study that predicted temperature increases ranging from one degree Celsius at the coast to about four degrees Celsius in the Sierra Nevada. With emissions and inflow boundary conditions unchanged form the historical base case that they used, the expected meteorological changes caused by global warming were predicted to significantly increase ozone in the San Francisco Bay Area. They conclude, quote:

> "In the future, the San Francisco bay area may be particularly sensitive to climate change despite strong reductions inn anthropogenic emissions. In this region, the severity and frequency of ozone episodes may increase, causing more annual ozone exceedences."

In summary, the circumstances that justified Congress' adoption of the preemption waiver 30 years ago still exist today. Climate change poses a profound threat to our state, with its reliance on agriculture, tourism and precariously balanced water resources. Climate change is also expected to exacerbate the same smog problem that California faced in the '60s, making it unmistakably clear that California continues to need its own motor vehicle

programs to address compelling and extraordinary conditions.

To comment on the earlier testimony of the automobile manufacturers, it is extremely disingenuous and dishonest to stand before this panel today and to claim that the impacts of AB 1493 will not be measurable either in the United States or around our world. The truth of the matter, and the reason why those regulators and scientists nodded their heads and said that they had not studied the impacts of this bill are that climate change science and modeling cannot accurately account for changes that are the result of single policy measures that do not impact, that impact less than ten percent of global emissions.

This bill is extremely significant. But again, the reason why those scientists and those regulators said that nothing had been studied on this bill -- And the reason why Dr. Hansen said he refused to waste computer time is because Dr. Hansen would rather focus on the limitations of current global warming science and modeling.

What Dr. Hansen does say, and I'm sure now wishes he were here to say today, is that this bill is well within the IPCC's low emissions scenario, which is intending to -- with a target of keeping the global increase in temperature to within one degree Celsius in the next century.

Dr. Hansen also would say and has said that any increase in carbon dioxide, increases radiative forcing, which also

increases warming. That is a basic scientific fact.

Making this change in California and in the 11 other states that have passed this automobile emissions bill will make a tremendous impact in carbon dioxide. As most of you know, cars and trucks represent a huge portion of California's emissions pie; 41 percent of California's emissions come from cars and trucks. If California were a country it would be the eighth largest emitter of CO2. And with the two states that are now considering this bill that would take it up t 15. There would be almost one-third or over one-third of the US auto market would be covered by this bill.

So California has been a leader in the past. California's actions and expertise have generated action both at the national and international stage. And again on behalf of hundreds of thousands of members of Environmental Defense I and we strongly encourage you to, without further delay, approve this waiver. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much, Mr. Walker.

Mr. Brune from Rainforest Action Network, the floor is yours.

MR. BRUNE: Good afternoon. Michael Brune from Rainforest Action Network. Thank you all for the opportunity to speak today. I admire your stamina.

I come here with a very straightforward message. I hope that the EPA will grant this waiver and will do so without any further delay.

One of the challenges of speaking later in the afternoon is that it is awfully difficult to offer much that is new so I'll just make three very quick points.

The first is that one of the benefits of speaking later in the afternoon is that while listening to testimony I have had the opportunity to do a little bit of research. I am happy to report that the wireless system here in this office is very fast and very reliable.

Almost every news article that I read today predicts that the EPA and the Bush Administration will eventually side with the auto industry and the oil industry and will deny the waiver. I can only hope that this isn't true. I can only hope that the EPA will not side with the auto industry and will not rule against everybody else. I picked up over 600 articles on this hearing and on the hearing last week. The world is watching and the stakes are absolutely enormous.

The EPA has never turned down a waiver request from the state of California and I really hope that you don't start now. We have heard powerful testimony today about the impacts of climate change on human health, California's snowpack, the state economy, ozone levels, the

federal economy and so on.

My second point is to highlight the impacts of climate change on forests. The prestigious journal Nature released a comprehensive study about a year ago documenting the impact of climate change on biodiversity around the world. Up to 34 percent of all species around the world would be threatened with extinction. Threatened with extinction due to climate change, even at conservative estimates, by 2050. The study also showed that up to 85 percent, 85 percent of all species in the Amazon, will be threatened with extinction by 2050 using conservative estimates of climate change.

Again, scientists are documenting that species are migrating towards higher altitudes, migrating towards northern latitudes. We're seeing the deepest, the warming of the deepest oceans. All of this is due to a warming of about one degree so far. Dr. Hansen tells us that there is another degree of warming already baked into the atmosphere. The time to act is now.

My final point is actually just to make a personal request. Like a lot of people who have spoken here today I am also a parent. My daughter is three years old, her name is Olivia. By the time she graduates high school scientists predict that we may lose the glaciers at Glacier Mountain National Park, we'll lose the snows of Kilimanjaro, and up

to 70 percent of coral reefs will be destroyed because of climate change. This happens before my daughter graduates high school.

By the time my daughter is 30 up to 500 million people throughout Asia and Africa will face severe and life-threatening water shortages. Again, just because of climate change. And by the time my daughter is in her mid-40s, again, up to 87 percent of all species in the Amazon will be threatened with extinction because of climate change.

How much more evidence do we need to take strong action? How much more evidence do we really need to take strong action? Please, I urge the EPA not to stand on the wrong side of history, not to stand with the auto industry and the oil industries. Please grant this waiver. Momentum is building to fight climate change and here in California, as you can sense, our determination is very strong. Please, don't stand in our way. Please grant this waiver as soon as possible. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much, Mr. Brune. Any questions from the panel? Michael.

PANELIST HOROWITZ: A quick question for Mr. Walker. Your testimony indicates you believe that climate change will exacerbate the smog problem in California. The earlier testimony from the auto industry indicates that the standards might in fact increase smog-

causing emissions. Do you have any comment on that?

MR. WALKER: My testimony actually says that smog will increase and decrease variably depending on the concentration of population and other factors in different areas.

PANELIST HOROWITZ: But you said that in areas where there was already a severe smog problem that it could exacerbate the smog problem; is that right?

MR. WALKER: Right. I mean as temperature increases to that degree it can trap more of the particulates and cause a greater problem. But again that varies depending on population.

PANELIST HOROWITZ: And do you have any comment on the Alliance's testimony earlier that the standards will increase the emissions of smog-producing pollutants?

MR. WALKER: I think that that -- I would question their calculation in that. I think that they estimated that by 2030 there would be approximately the equivalent of approximately 1.9 million additional cars on the road. It is pretty clear based on the studies that have been done surrounding this bill that the reduction in net automobiles reduced -- net automobiles removed from the road would be almost 100 million per year. So I think that their, I think that their estimates are incredibly self-serving, as with the other statements that they made, eliminating about 95

percent of the facts available on any particular question considered.

PANELIST HOROWITZ: Thank you.

PRESIDING OFFICER GRUNDLER: Thank you all for your testimony.

I'd like to invite up Panel number 9, the American Lung Association of California, the California Nurses Association and Dr. Kelter. Ms. Holmes, would you like to begin?

MS. HOLMES-GEN: Sure. My name is Bonnie Holmes-Gen and I am Assistant Vice President for Government Relations with the American Lung Association of California and I am very pleased to be here today. We are pleased that you are here in California to hear from us. And we are especially pleased to be part of such a prestigious group of public officials, of community and business leaders, of health and medical organizations and representatives and scientists. We think this is a wonderful showing of support from all of our constituencies here in California for this important law.

And we are here today to urge the federal Environmental Protection Agency to grant the waiver to California to implement our 2002 Clean Cars Law. As a public health organization we believe the California Clean Cars Law is essential to promote improved air quality and

public health in California and to promote air quality and public health in the 11 other states that have adopted this important program. Of course in addition to be an essential element of state and national efforts to slow global warming.

The need for this waiver is clear and compelling and EPA has a clear obligation to grant the waiver. We are urging today that the federal EPA moves out of the way and allows California to move ahead and implement this important law. AB 1493 will reduce emissions from the largest source of greenhouse gases in California. As you have heard several times over, passenger vehicles and light duty trucks are responsible for a huge percentage of California's global warming emissions, 41 percent.

And this legislation and our regulation provides a feasible, cost-effective pathway to substantially reduce emissions from these sources with technologies that are proven and readily available. Without AB 1493 vehicle greenhouse gas emissions would just continue to rise as more cars are on the road traveling longer distances.

Our state has been at the forefront of clean car technologies for several decades and the innovations developed in California have dramatically reduced smog and benefitted the rest of the country. The AB 1493 requirements to produce cars with lower levels of greenhouse

gas emissions continue this important history of leadership. And will not only help to slow the pace of global warming, but will also encourage the use of advanced technology vehicles including hybrid electric and plug-ins and natural gas and other technologies that have extremely low emissions of criteria pollutants.

Since we are a public health organization I want to spend most of my time here today talking about our concerns about public health and how AB 1493 and the Clean Car, the Clean Car regulation will help to address the public health problems that we are experiencing here in California. The reductions in greenhouse gases will result in important air quality and public health benefits. It is clear that greenhouse gas emissions -- It is clear that if California does not reduce greenhouse gas emissions it will be much more difficult for our state to achieve state and federal clean air standards.

A California state-sponsored analysis of public health impacts of global warming found that higher temperatures could dramatically increase the number of days favorable to ozone formation. In this state study under a medium-high emission scenario the number of days conducive to ozone formation were found to potentially increase by 75 percent in Los Angeles and the San Joaquin Valley by the end of this century. And these two areas, of course, have some

of the worst, are experiencing some of the worst smog, worst air quality in the country and are listed in our American Lung Association State of the Air Report as some of the top polluted areas in the country. And of course any increased pollution would cause severe public health consequences.

California already is experiencing thousands of premature deaths and thousands of hospitalizations every year from air pollution and California has some of the highest asthma rates in the country. And studies are even showing that children growing up in our more polluted areas have abnormal lung development.

All the many public health impacts of air pollution add up to billions of dollars a year in costs, medical costs and the cost of premature deaths. And in fact when an estimate from our State Air Resources Board estimates over $50 billion a year in health costs related to air pollution. And that includes the cost of premature deaths.

The longer we delay, the more emissions we are spewing into the air, the more health impacts that we are experiencing. Study after study confirms that air pollution has a direct impact on respiratory health. I mentioned the asthma attacks, consider also premature deaths, hospitalizations. Pollution also contributes to bronchitis, chronic obstructive pulmonary disease, emphysema, lung

cancer and other lung and heart illnesses. And children and the elderly are particularly vulnerable, with recent research indicating that exposure to heavy pollution may not only aggravate asthma or cause more severe asthma episodes but is also linked to the onset of new cases of asthma.

In addition to greenhouse gases resulting in the potential for greater formation of ozone increased global warming gases in the atmosphere, of course as has been mentioned earlier, will result in increased emissions of pollutants ranging from smog precursors to particulate emissions from many different sources. So we have a very serious concern about the public health impacts that are linked to greenhouse gas emissions and global warming from motor vehicle and other sources.

The longer we delay, again, the more emissions we spew. It is critical that California reduce its greenhouse gas emissions through the implementation of AB 1493. California has, again, led the way for the nation by adopting this important greenhouse gas regulation and California clearly has the authority to adopt these standards. There are clear and compelling reasons for California to move forward and the American Lung Association urges you to grant this waiver without delay. Thank you for time to speak with you today.

PRESIDING OFFICER GRUNDLER: Thank you,

Ms. Holmes.

Ms. Donna Fox from the California Nurses Association, thank you for being here.

MS. DORSEY FOX: Thank you for the opportunity to be here. I am a registered nurse and I am representing 75,000 registered nurses of the California Nurses Association and we are asking you to support the waiver. We are here to say that it is essential to improve air quality and the public's health in California.

Under the Clean Air Act California has a compelling rationale to merit a waiver. Individual states or tribes may have stronger air pollution laws but they may not have weaker pollution limits than those set by the EPA. This is according to your website.

The California Air Resources Board reports that more than 95 percent of Californians live in areas with unhealthy air. Passenger vehicles and light duty trucks are responsible for approximately 40 percent of California's total global warming emissions.

Every day the registered nurses of California Nurses Association treat patients who suffer from lung disease, heart disease and premature deaths. Many of these patients are sick and they're getting sicker from the auto emissions and the resultant ozone and particulate pollution. The hardest hit, as you have head before, are the young and

the elderly and those individuals who are already compromised with lung disease or heart disease. The asthma rates are skyrocketing. This burden of disease is preventable. That's why we're here today. Californians of all ages are suffering.

What does this mean? It means a loss of productivity, it means people having disability because they can't function in the work place. It means they can't participate in raising their families. It means children can't play like children normally do. This means a decline in the quality of life for Californians of all ages.

The technology to substantially reduce emissions is available. It is a public health imperative for Californians that you grant this waiver. The registered nurses of the California Nurses Association urge you to put the public's health first. Thank you for your attention to this urgent, public health problem.

PRESIDING OFFICER GRUNDLER: Thank you very much.

Dr. Kelter, welcome.

DR. KELTER: Thank you very much. I thank you for the opportunity to be here. I have actually been up there a couple of times in my career and I know what you're going through. My keester is getting sore just thinking about it so thank you for your perseverance.

My name is Alex Kelter. I am a physician and an

epidemiologist. I recently retired from the California Department of Health Services after 24 years of serving California's taxpayers. Prior to that I worked at the Arizona Department of Health Service and the Centers for Disease Control. I have spent fully half of my career in the area of environmental epidemiology and toxic substances, including working on both criteria and toxic air contaminants in Arizona and here in California.

Parenthetically, I've spent the other half of my career in injury prevention so I am very used to dealing with the attitudes and practices of the automobile industry. More on that later.

I also hope to be able to say something that actually other people haven't said and make this late afternoon worthwhile for you. And I am here today as a volunteer with the American Lung Association.

You have already heard about AB 1493. I'm going to try not to repeat all that. But I want to emphasize the point that by not approving this waiver you are denying California the right to protect the public health as is guaranteed by the Constitution, protecting health and welfare is assigned to the states. And as assured by the Clean Air Act itself, when it permits states to adopt more protective standards.

You have already heard why passing this law was

critical for California. you have already heard why California clearly has the compelling and extraordinary circumstances that are needed to merit this waiver. You have already heard that motor vehicles continue to be a major source of emissions in California and that 40 percent of our greenhouse gas emissions come from automobiles. you have already heard that AB 1493 will provide a feasible and cost-effective way to reduce emissions with technologies that are proven and readily available today.

We have known for decades what the health effects of air pollution are and how bad they can affect people with their respiratory health, their cardiovascular health, perhaps even their mental health through disease processes including asthma, bronchitis, emphysema, chronic lung disease and lung cancer.

As with all forms of environmental degradation it is the poor, the young and the old who are affected the most. And now we know that not only does air pollution exacerbate these conditions, but in the case of asthma can actually cause it.

Now for something new. Furthermore, in this day and age with the accelerating epidemic of childhood obesity upon us, all of us physicians are urging our patients to get out and be active in the community. How can we do that in good conscience when we know the air quality that we're

sending people into? It's almost abusive.

We know that asthma is a disease that can rob a youngster of his childhood, make him afraid to be out in nature and to explore the world. We know that children today have the free range that is about ten percent of that we had when we were kids, and how essential it is for a child to develop and grow normally to be able to explore and touch and sense the world without restriction.

Perhaps lung disease is the cruelest way to die. The constant air hunger. The wondering when your next breath will be your last. The feeling, the sense that you're moving just enough air to stay alive and no more.

You have already heard the findings about the environmental damage that will be done to California through global warming so let me cut to the chase. One of the things I value most about my training as a physician is the training I received in recognizing when it is time to act and stop waiting for more data.

We know that ultimately we cannot continue the trend of ever-accelerating VMT and still avoid worsening climate change. But we are a long way from implementing the compact urban development and new land use policies that will bring about a reduction in VMT. So right now is the time to act. Right now we need to be able to reduce auto emissions to the rock bottom levels achievable with existing

technology to protect public health.

It has been said that delay is the cruelest form of denial. I strongly urge the EPA to grant this waiver now. It is bad enough that the states have to go it alone. But for EPA to stand in the way is explicable and wrong for our children, wrong for our patients, wrong for all of California residents and the residents of the other 11 states and the nation. Please don't add more heat to the already accelerating skepticism of government that the public has.

Unlike some other witnesses I am not worried about the earth, I am just worried about the creatures that live on it. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much, doctor. Any questions for the panel?

Thank you for your time.

I'd like to invite the members of Panel 10 to come forward. Todd Campbell from Clean Energy, Laura Stuchinsky from the Silicon Valley Leadership Group, Mike Jackson, Transportation Technology, TIAX, and Bob Roberts from the California Ski Industry Association. Thank you very much.

We'll begin with Mr. Campbell. He is not here.

Ms. Stuchinsky, you may begin.

MS. ROSA: My name is Kris Rosa, representing Laura Stuchinsky and the Silicon Valley Leadership Group. I

am here to express the Leadership Group's support for the waiver.

By way of background, the Silicon Valley Leadership Group is a public policy trade association founded 29 years ago by David Packard of Hewlett Packard. Today the Leadership Group has more than 210 members, including many of the nation's largest high tech and biotech firms.

The Leadership Group's members have made reducing the nation's greenhouse gas emissions and dependence on imported fossil fuels a priority for their individual organizations and the Leadership Group as a whole. That is why the organization was one of a handful of business groups in the state that supported AB 32. It is also why it supports California's request for a rule waiver to implement AB 1493.

We believe it is imperative that our nation take swift and concerted action to avert the worst effects of global warming. We applaud the Governor and the Legislature for exercising early and bold leadership on this issue. It is consistent with the state's long and proud history of leadership on environmental policy.

Given that transportation is a major source of greenhouse gases, 40 percent of all emissions in the state, it makes sense for California to reduce emissions from this

section to the maximum extent feasible. Reducing tailpipe emissions is one strategy to achieve that goal.

To achieve the deep cuts in emissions that are needed ultimately we will need to take comprehensive action on a national level. But until that occurs it is essential that the federal government encourages states willing to take steps into the vanguard to do so. To pilot programs and policies that, if effective, could be replicated across the country.

California is the ideal place to road test these ideas. Our leadership and residents support such action. California's size, the numbers of cars purchased and driven in this state gives us the heft to make significant change. A number of the world's experts from the public and private sector are already doing the cutting-edge research to make the necessary to happen in order to implement the state's motor vehicle greenhouse gas reduction regulation as well as other related state policies and programs.

In summation, the Silicon Valley Leadership Group urges the granting of the waiver. This is not only in the best interest of California but for the nation. Thank you for this opportunity.

PRESIDING OFFICER GRUNDLER: Thank you, Ms. Rosa.

Mr. Jackson.

MR. JACKSON: Thank you. My name is Mike Jackson. I am Senior Director of TIAX Corporation, LLC. I head up our west coast office and I have focused my career for the last 30 years on transportation technology. TIAX has been involved in a number of studies that touch upon many of the technical issues around reducing greenhouse gas emissions from light duty vehicles.

So thank you for giving me the opportunity to provide comments and support of California's request for a waiver of preemption under Clean Air Act Section 209(b). In my opinion, the California is needed to protect public health in California. This regulation will reduce damages associated with climate change as well as criteria pollutants and our over-reliance on petroleum-based fuels.

ARB's GHG emission standard coupled with Governor Schwarzenegger's Executive Order S-01-07 requiring ARB to establish a low carbon fuel standard, LCFS, will provide a set of performance standards that will effectively control overall emissions, be they greenhouse gas emissions or criteria, and the economic impacts of our current fuel vehicle system.

These performance standards will generate fuel and vehicle innovations at reasonable costs and will provide necessary emission reductions to protect public health. For these reasons I urge the US EPA to approve California's

waiver request.

I have included a Figure 1 in my testimony that illustrates that as the light duty vehicle fleet approaches it gets cleaner with the -- towards the cleanest technologies, such as Partial Zero Emission Vehicles or PZEVs, that the greenhouse gas emissions and the economic damages that are associated not only with those from criteria pollutants but greenhouse gas emissions and our over-reliance, that all these become very, very important. They are equal in their contribution to the damages that will occur in California. We need these kind of performance regulations that address these combined issues of reducing criteria pollutants, greenhouse gas emissions and economic consequences of relying solely on petroleum fuel for our transportation system.

In recent congressional testimony each of the CEOs of General Motors, Ford and Chrysler expressed the need for the auto industry to develop alternative sources of propulsion systems on diverse sources of energy. GM's Wagoner indicated the need to combine solutions to reduce gasoline use and oil imports to also to reduce CO2 emissions. Ford's CEO said that:

> "Our analysis shows that the most cost-effective solutions to lower the CO2 emissions from vehicles must be a

combination of biofuels and vehicle technology advancements."

An integrated systems approach considering the vehicle and the fuel is needed to provide combined benefits of reducing criteria emissions, GHG emissions, and reliance on petroleum based fuels. Reformulating fuels in the early 1990s provided substantial advances in automotive emissions technology and was the first step to integrating the fuel-vehicle system for criteria pollutants. The next step in this process of controlling vehicle emissions is to optimize the use of advanced engine technologies and low carbon fuels to further reduce and possibly even remove the automobile from the environmental equation.

ARB in their GHG emission standard and the subsequent low carbon fuel standard are performance-based standards from which the oil and auto industries can respond with innovative, cost-effective solutions. ARB's standard incorporates not only advanced technologies but also the use of alternative fuel technologies such as flexible fuel using ethanol blends, compressed natural gas, plug-in hybrids. Further, the regulation is written to not only include tailpipe emissions but just as importantly the upstream components of those emissions as well as vehicle air conditioning impacts.

There are also direct upstream reductions of

criteria pollutants, contrary to what the Alliance suggested this morning, since less gasoline fuel is being produced and distributed. Estimates that we have made at TIAX indicates that in 2020 that reduction in terms of NOx plus ROC, although not substantial, is on the order of five tons per day. It's not insignificant either. And when you're talking about PM emissions it's on the order of one ton per day.

These emissions, as you can imagine, it's hard to figure out exactly where they are all coming from and what the emission factors are for each step along the distribution chain. Throwing in some higher estimates they could be as high as 15 tons per day or 6 tons -- 15 tons per day of ROC plus NOx or 6 tons per day of PM. This is in stark contrast to Mr. Clubok's presentation of where he's going to increase, the emissions would increase by about that magnitude.

I have also shown in my testimony here a figure 2 which illustrates the benefits of alternative fuels in meeting greenhouse gas standards compared to engine efficiency measures alone. And this figure is illustrating how low carbon fuels can achieve very, very substantial reductions in GHG emissions. Ethanol fuels produce, for example, from cellulosic resources or from sugar cane, provide extremely low GHG impacts. Other alternatives such

as electric drive, including electric vehicles or plug-in hybrid electric vehicles, also provide significant reductions due to higher vehicle efficiencies, but also the fact that the electric generation mix is cleaner.

The question is, will these technologies be accepted in the marketplace? Recent announcements by all the OEMs suggest that they are serious about successfully bringing these vehicles to the marketplace.

FFVs are already sold in California and the US. Nationwide now six million are on our roads. The CEOs from GM, Ford and Chrysler have committed to provide 50 percent of their productions as FFVs by 2012 in support of the President's goal to reduce petroleum use by 20 percent by 2017. Toyota has indicated they will be the first to market with PHEVs. GM has introduced the Chevrolet Bolt that they expect to have in production by 2010. DaimlerChrysler is currently demonstrating PHEV architecture in their Sprinter van. All manufacturers continue to invest in developing hydrogen fuel cell technologies. Similarly, the energy providers are also investing in new fuels that have lower GHG impacts and can be effectively marketed using new or existing infrastructure.

In conclusion, high oil prices and high oil and gasoline prices, reliance on oil supplies from geopolitically unstable regions, the growing consensus of

the impacts of global warming, what you've heard today, and California's continuing struggles to meet ambient air quality standards in the South Coast and San Joaquin regions has mobilized our Legislature to require far-reaching regulations.

Protecting public health has always been a high priority for Californians, as has protecting our economy, industries and jobs. ARB's greenhouse gas emission regulation for light duty vehicles and the proposed low carbon fuel standard will, in my opinion, provide much needed reductions not only in the GHG emissions but in ozone precursors as well as direct and indirect particulate emissions. This will be accomplished with advanced engine technologies, with lower carbon fuels and with electric drive technologies with promises of zero tailpipe emissions. All of these technologies will be needed in California to protect our citizens. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Jackson. You indicated some analyses you have done estimating the air quality impacts of these standards. Are those part of your written testimony that you'll be submitting?

MR. JACKSON: I can do that. It wasn't part of the written testimony.

PRESIDING OFFICER GRUNDLER: That would be useful

to us.

MR. JACKSON: And to be clear, it's the estimate of the upstream emission criteria pollutants?

PRESIDING OFFICER GRUNDLER: Correct.

Mr. Roberts, please begin.

MR. ROBERTS: Thank you very much. Are we on? Thank you very much. Welcome to California and thank you very much for your patience in this long day. It is very much appreciated. My name is Bob Roberts. I am the Executive Director for the California Ski Industry Association and I am here on behalf of our 37 resort members and our Board of Directors.

The winter sports industry in California is in fact the proverbial canary at the 7,000 foot mine shaft. And quite honestly, we are not feeling too good these days. For the last half century we have been providing recreational opportunities on the snowpack and making our living off of that. With the demise of timber, cattle, the extractive industries on our mountain communities, we have become recreation and tourism. The real economic engines for the mountain communities in California.

Today our industry attracts about eight million visitors, literally from all over the world, to ski and snowboard on our slopes. This is an infusion in the mountain communities of California of a little over $2.5

billion each year. And that really doesn't include the billions of private and public infrastructure dollars that are going in to make these communities continue to be able to attract and complete in the competitive industry that we're in, which is tourism and recreation.

Thirty-five years ago snow making was a novelty. About a handful of areas in Southern California engaged in it and, quite honestly, the rest of us felt that it was really quite a folly. The Sierra Nevada and the Siskiyou Ranges, we pretty reliably got 30 to 40 feet of snow. Our season lasted six months. The drought years were few and they were far and few in-between.

At a personal level I have a very clear memory of the spring of 1974. On Mount Shasta I had to actually trench lines so that skiers could work over our 40 foot snowpack so that our chair lifts would operate. It's a memory that stays with me today because we really never really worried about our snow quality. In fact we needed four feet of snow just to cover the rocks.

That's all changed. Today our resorts statewide have tens of millions invested in snow making and these are large, sophisticated snow making systems throughout the state, Southern California all the way through Tahoe, Mammoth, up to Mount Shasta.

The reports that we got from Scripps in 1999 and

again from the National Academy of Sciences in 2004, and what we heard earlier today, really just confirmed for us what we have seen firsthand. Over the last 50 years the springtime temperatures in the Sierra have increased two to three degrees Fahrenheit and it has been noticeable. Our springtime runoffs are now about two weeks earlier.

This particular season was a real punctuation mark. Clearly it was a drought year. Our snowpack was down 40 percent. Our season, quite frankly, ended a month early and our visitation was off 18 percent. Now it's a bit of an anomaly but the fact of the matter is it does bring attention very clearly to our dependence on weather and the dynamic changes that are clearly happening for us.

We've looked at other studies, these same studies, studies that have been done in Utah and Colorado and Europe as well, and they have all pointed to the same thing. If we do nothing our snowpack, particularly here in the Sierra Nevada, will disappear by the end of this next century. It will reduce by at least 80 percent. And you heard similar kinds of discussions and points made by our scientists earlier. This for us is just an extraordinarily concerning and a very difficult situation to foresee for our industry.

Obviously we want to see mitigation and we'd like to see it very quickly and handily here in California. The ski and snowboard industry in California, along with our

counterparts throughout the world, are really committed to this question of climate change. How can we mitigate it? Frankly we are a very small industry.

Our industry, the California ski industry, was an early and a very ardent supporter of AB 1439, equally for AB 32. We partner, for example, with the NRDC on a Keep Winter Cool campaign that is a national campaign that we have all participated in.

Our resorts are on low carbon diets. We buy green tag energy, we use biodiesel in our fleets, we have aggressive recycling programs. We work very closely with our transportation systems in our districts to try and encourage public transportation as well as carpooling. And our construction, to the extent possible, all of our new construction is as green as we can make it. So that our industry is doing what it can but we are a very, very, very small industry.

So one of the things our Board has most recently elected to do is to produce an IMAX. And I think we have all seen the award-winning production on the part of Ex-Vice President Gore. And if you can get an Oscar for a PowerPoint presentation we think that an IMAX talking about the greener way is going to be appropriate. And we have sponsored one before and we are going to sponsor this again because our last one went on five continents. It was

Adventures in Wild California. And we feel that this is a way tog et messages out to people not only in the United States but broadly across the world that will resonate and will stay in communities and will attract schoolteachers leaders of communities.

So as a small industry we're doing everything we can but we need this waiver. We need these changes. And we feel very strongly that this is the time, it's here and we have the grounds. I think if you look at the compelling and extraordinary language, which are the precise grounds in the language, they merit this waiver. And on behalf of our industry, our mountain communities and our millions of winter sports visitors we urge you and request that you grant the waiver. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Roberts, thank you all.

It is typically our practice to --

Let me invite up Panel 11, some other non-governmental organizations who are presenting testimony today. The Sierra Club, Environment California, The Union of Concerned Scientists, Arizona PIRG, Global Exchange, Republicans for Environmental Protection and the Planning and Conservation League. Thank you all for coming. Mr. Zichella, why don't you lead off.

MR. ZICHELLA: Good afternoon. Several other

people have said it and I know it's been a long day so I am going to do the best I can not to repeat what other people have said. Many good points have been made about the impacts on California by people who can do a far better job than I can at it. Certainly I think that you get the idea. We have a lot at stake here. A lot of the impacts our state are experiencing are not just impacts that are forecast, they are already observable.

My name is Carl Zichella. I am the Regional Staff Director for the Sierra Club for California, Nevada and Hawaii. I am testifying today on behalf of our 210,000 Sierra Club members in these three states and our 1.3 million members and supporters nationwide.

As I mentioned, a lot has happened since 2004 that we have talked about today. We know about the IPCC reports and what they've said, we know about the impacts that the state's research has been about California. We have seen the Supreme Court decision clarifying the authority of EPA to regulate CO2, which really should guide your actions in this waiver. If you have the authority to regulate CO2 as a pollutant under the Clean Air Act so certainly does California. That Supreme Court ruling was a watershed. It really turns a corner I think in many ways politically in this country.

And one of the developments that we have seen

since this law was enacted was a broad public consensus that is bipartisan now nationwide, to the 60th percentile nationwide. You heard earlier, we're to the 80th percentile in support of immediate action here in California. I think it's time to really move forward and not to allow any further delay.

Skipping over a number of things that have already been said. I do want to mention that I got kind of angry this morning listening to the auto makers. And I know part of it was sort of a sense of bad deja vu. We've heard the same kind of remarks from them over and over and over again through the years. You heard the representative this morning say, someone is going to say, there they go again. Well someone is going to say, there they go again.

As I listened to them this morning it brought to mind the words of I. F. Stone who once wrote, in order to understand this year's lies you have to remember last year's lies. This is an industry that told us it was too expensive to put safety glass in cars. It was too expensive to put padded dashboards in cars. That seatbelts were going to bankrupt their industry. That they couldn't put catalytic converters on automobiles or they'd all go broke.

In 1973 one of my personal favorites was the Ford Motor Company testifying before Congress on corporate automobile fuel economy standards, that if we pass CAFE

standards at all everyone would be driving Pintos by now. One quick look out the window shows how wrong that was. And in fact they have never been right.

One of the examples they gave to try to mitigate this perception was that the zero emission vehicle mandate in California was a bit of a failure. Well that's interesting, seeing as how they never tried to market an electric car and they bought up every single -- and they took back every single electric car that was leased in the state and destroyed it.

Now it's quite amazing to me that they'll sit there and argue for no action to be taken. They will criticize this particular law for which we're seeing a waiver saying that it can't solve the global warming problem on it's own. It's not going to bring down global temperatures.

Well, you know, as we've also heard scientists tell you, there is no silver bullet. But i would argue that this piece of legislation that we're talking about today, AB 1493, is part of what I would characterize as silver buckshot. The kinds of things, the many kinds of things we're going to need to do to get a handle on this problem.

I would characterize the industry's arguments this morning as one being, let's not take the first step on a journey, and then be surprised that we never get to the

destination. That we shouldn't do anything. That we should just hold off.

Well I just think that these arguments are not only irresponsible, they are actually immoral. Because knowing what we know right now about the problem of global warming and the delay that we have been forced to wait through for the last six years, it's just inexcusable that further delay would occur.

There is zero doubt in the scientific community any more, well I should say maybe there's ten percent of those that still think that global warming isn't real. With 90 percent certitude from the scientific community according to the IPCC that this is a problem and that we are causing it there is zero excuse to hold off on action any more. To do so actually threatens the future generations of Americans and other people on this planet with diminished, and probably even greatly diminished lives if we do not live up to what we need to do.

The state of California acted when the federal government would not. It took the initiative to help protect its citizens when the federal government would not. And I think that to say that there is any excuse but a political excuse to deny this waiver would be an abuse.

And frankly I just feel so strongly about this, and so angry about what was said earlier today, that I need

to just exhort you to take back to the EPA that this is going to be a battle to the finish over this waiver. States have the right to do this, they have the need to do this. If the 11 states and the five more that are considering it adopt this law, 40 percent of the US automobile market would be affected.

US cars and trucks if you break them out by themselves as a separate category is the fifth leading source of greenhouse gas emissions in the world. California is the leading consumer of gasoline in the United States. It's clear California needs to do this, we have a lot of contribution to make, not only to direct greenhouse gas reductions but to leading other states and other nations in reducing greenhouse gas emissions.

We urge you to grant this waiver, we urge you to grant this waiver now. To accede to the industry's position is to say we never take the first step on a journey that we absolutely must reach our destination on. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Zichella.

MR. ZICHELLA: You're welcome.

PRESIDING OFFICER GRUNDLER: Next we have a representative from Environment California, Jason Barbose.

MR. BARBOSE: Thank you. My name is Jason Barbose and I'm a Global Warming Advocate with Environment

California Research and Policy Center. Our organization is a statewide citizen-based environmental advocacy organization that represents approximately 70,000 Californians. And thank you, of course, for giving me the opportunity to speak today on this matter. I hope my comments aren't overly duplicative of comments already made today, but to the extent that they are I believe they will be reinforcing important points.

And basically the main thrust of my comments is that the extraordinary and compelling risks that global warming poses to California require immediate and well-reasoned solutions and California officials are doing just that. It was with great purpose that California regulators and officials adopted greenhouse gas standards for motor vehicle and it is with a great urgency that we are asking the EPA to grant us the waiver for those standards.

This year the United Nations Intergovernmental Panel on Climate Change, the IPCC, is releasing the current state of climate science after a rigorous, multi-year process that included extensive review by scientists and governments worldwide, including the United States. And the IPCC found that the evidence of global warming is, quote, "unequivocal" and that with greater than 90 percent probability it is very likely human activities, primarily the burning of fossil fuels, are responsible for most of the

observed increase in global average temperature since the mind-20th century.

And for years scientists and government officials have done extensive research in California as well about he particular threats global warming poses to our environment and our economy and our public health here in our state. And as has been expressed in greater detail already today, these threats and challenges are tremendous. In California we are always at risk of drought, but studies show global warming could nearly drain our Sierra snowpack, depleting water supplies for both people and agriculture.

In California we already suffer from some of the worst air quality in the nation but global warming could increase by 75 percent the number of days conducive to smog pollution in the Central Valley and in Los Angeles Air Basin. In California we are home to an amazing array of natural environments unmatched in any other state but global warming could dramatically alter these important ecologic ecosystems.

And the good news is that the IPCC has also concluded that we can avoid or delay many of these impacts if we quickly and significantly reduce global warming emissions by at least 15 to 20 percent by 2020, and then 80 percent by 2050.

Unfortunately, as you can imagine, the facts show

that we have been on an alternate trajectory. Global warming emissions rose 17 percent nationwide between 1990 and 2005, by nearly the same amount in California. And a large part of this emissions increase, as you know, is attributable to cars and light trucks. The transportation sector in California accounts for over 40 percent of our state's greenhouse gas emissions. Carbon dioxide emissions from motor gasoline consumption in our state increased 15 percent from 1990 to 2004 from 111 to 128 million metric tons.

So in seeing the compelling need to cut global warming pollution the extraordinary consequences of failing to take action, and the major contribution that cars and SUVs make to the problem, California decision-makers made a rational response. They undertook a multi-year process that included careful and measured technical review and public input to create first-in-the-nation standards to cut global warming pollution from cars and light trucks.

And the standards, of course, can be met with technology already in the market, they will give auto makers flexibility to apply any technology they choose.

And since 2004, as you know, 11 states have adopted the California tailpipe emission standards. Together these states account for more than one-third of the US auto market. And according to Environment California's

analysis, by 2020 the cumulative emissions reductions achieved in these 12 states, including California, will be the equivalent to taking 74 million of today's cars off the road for an entire year.

And unfortunately, without EPA's stamp of approval California and these 11 states will not be able to take this important step, which is of course why we are all here today. Unfortunately though, California's standards were carefully crafted to meet he various criteria for a waiver of preemption under the Clean Air Act.

And I'll defer to ARB's comment earlier today and last week at the hearing in DC but let me just say this. The standards are obviously as protective of public health and welfare as federal standards because the federal government has refused to set any global warming emission standards for vehicles. The standards address compelling and extraordinary conditions California faces from climate change and reflect California's pioneering role in reducing pollution from tailpipes.

In all you could say the standards are consistent with the Clean Air Act, given the wealth of evidence that they are technologically feasible and that the required test procedures are consistent with EPA's requirements.

And so in conclusion, global warming demands immediate action at the local, at the state, at the federal

levels. Given the risk, it is grossly irresponsible for the federal government to reject the limits on global warming. But more than that it is unconscionable for EPA to stand in the way of state action and leadership. And so on behalf of Environment California I respectfully urge the EPA to grant California's waiver request and remove the current roadblock to clean cars. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much.

Mr. Bosh.

DR. BUSCH: Yes. It's actually Busch, B-U-S-C-H.

PRESIDING OFFICER GRUNDLER: Thank you. Sorry about that.

DR. BUSCH: I've seen different spellings without the C, that's a new one to me though. I actually have a few slides. I don't think I can advance those from here. Okay, I will. So thanks very much for the opportunity to say a few words today. I'm Chris Busch, I'm an economist in the Union of Concerned Scientists California Climate Program.

A bit about my credentials: I have a PhD in Agricultural and Resource Economics from the University of California and a master's degree in public policy from Berkeley as well. Previously I worked as a Senior Research Associate at Lawrence Berkeley National Laboratory.

Today I would like to address the compelling and extraordinary conditions that exist in California regarding

the impacts of unabated global warming. With respect to at least three key aspects, water supply, coastal impacts due to sea level rise and air quality and public health, California is especially vulnerable to global warming impacts.

The economic cost of sea level rise could easily amount to billions of dollars. Much attention has been given to he risk posed by inundation of low-lying land in the San Francisco bay Area. An issue of at least equal importance is the danger of erosion of cliffs and related damage to property. This will be particularly important in Southern California.

I'd like to highlight some original research that professor Michael Hanemann and I conducted for the state last year. This work sought to provide some information about the economic impacts of sea level rise in Southern California.

We found, based on the vulnerability of valuable real estate and infrastructure that approximately 120 miles of Southern California coastline can be expected to need protection during the course of this century. With sea walls in California now averaging about $6,000 per linear foot this suggests a cost estimate for the protection of Southern California's coastline of about $3.8 billion in today's prices.

This is in no way reflective of the total expected cost. Maintenance costs for sea walls average about four to ten percent of installation costs annually. Another somewhat hidden cost is the phenomena of passive erosion that occurs with installation of sea walls, which cause the beaches that lie in front of them to wash away, resulting in additional costs in the form of lost beach recreation or costly beach sand replenishment.

The California Coastal Commission's report, overview of Sea Level Rise and Some Implications for Coastal California reinforces the view that the south coast faces significant economic implications from sea level rise.

The figure on the screen now shows the expected economic damage for different parts of the California coast, if the coast were to be left unprotected, as a function of physical vulnerabilities and the location of valuable property along the coast.

The relative losses are ranked on a scale of one to five with five being most severe. The height of the cross-hatched bars show the relative level of economic damage projected for each of the coastal counties. Again, absent installation of sea walls. With the exception of a small slice of coastline at the former military base, Camp Pendleton, the entire south coast receives the highest risk rating of four or five.

Let me close with a few words on the issue of water supply and flood protection impacts, which can also be expected to impose very large costs. Probably no other state has such an intricately woven and climate dependant water management system. The projected decrease in Sierra snowpack will have serious water supply related impacts on both agricultural and urban water users, as Dr. Larry Dale testified to earlier. These water supply impacts could be lessened by new investments in California's water management system, but these new projects themselves will be costly both monetarily and ecologically.

The increased risk of catastrophic flooding is also particularly remarkable. Sacramento's flood risk is the greatest of any major US city. This next slide gives the relative flood risk as reported by the Sacramento Area Flood Agency, Flood Control Agency, excuse me. the height of each bar represents the level of flood protection for a particular city. The figure shows that Sacramento has the lowest, estimated flood protection with defenses thought to be able to withstand a 77-year flood.

Global warming will further increase Sacramento's flood risk. The damages following Katrina have made clear the immense economic damages associated with flooding of a major metropolitan area.

In conclusion, California faces an extraordinary

and compelling array of economic impacts if global warming continues unabated.

We urge approval of California's waiver without further delay so that we can move forward with global warming solutions. Thank you very much.

PRESIDING OFFICER GRUNDLER: Thank you, Dr. Busch.

Mr. Somers.

MR. SOMERS: Thanks for the opportunity to testify today. My name is Mike Somers and I am a representative of he Arizona PIRG Education Fund. The Arizona PIRG Education Fund conducts research and education on public interest issues. I am here today to urge the EPA to grant California's waiver request and give Arizona and all the states the power to cut global warming pollution from cars and light trucks.

As you are likely aware, in February 2005 Governor Napolitano established a Climate Change Advisory Group comprised of 35 diverse stakeholders. The Arizona PIRG Education Fund was an active participant in the CCAG's Transportation and Land Use Work Group. Over the course of the next year and half the CCAG and its working groups discussed a variety of policies that could reduce global warming pollution in Arizona. The Clean Cars Program emerged as one of the top policy options to reduce global warming pollution in Arizona and received a unanimous

recommendation to the governor by the full CCAG. So in Executive Order 2006-13 Governor Napolitano called for an adoption and implementation of the Clean Cars Program. The rulemaking process has not yet begun.

In part through the Governor's Executive Order and the CCAG process it was recognized that investing now in Arizona's growing infrastructure can make enormous differences down the road. Arizona can significantly reduce its global warming pollution by creating and implementing programs to achieve the greatest emission savings. And Arizona could make major strides towards reducing its share of global warming pollution by ensuring our state has cleaner cars.

The Arizona PIRG Education Fund's report, Cars and Global Warming: Policy Options to Reduce Arizona's Global Warming Pollution from Cars and Light Trucks documents how Arizona could limit its contribution to global warming over the next two decades by implementing policies to reduce carbon dioxide emissions from cars and light trucks. Furthermore the report states that controlling global warming pollution from the transportation sector, particularly cars and light trucks, is essential if Arizona is going to reduce its emissions and its long-term impact on the climate.

According to the report, transportation-related

emissions are responsible for approximately 39 percent of Arizona's global warming pollution. Cars and light trucks such as pickups, SUVS and minivans, are the most important sources of global warming pollution within the transportation sector, responsible for approximately 60 percent of all emissions from transportation an more than one-fifth of Arizona's total emissions of global warming pollution.

The Arizona PIRG Education Fund's report documents how carbon dioxide pollution from cars and light trucks in Arizona could double from 1990 to 2020 unless action is taken to reduce emissions.

According to the report, by implementing the Clean Cars Program to take effect in model year 2011, calendar year 2010, Arizona could reduce carbon dioxide pollution from cars and light trucks by about 14 percent below projected levels by 2020. Once the program is fully implemented in 2016, consumers are projected to save at least $3 to $7 every month as the result of the standards, and more if gasoline prices remain high.

Arizona, California, the other states that have adopted the Clean Cars Program and other states that are considering the adoption of the Clean Cars Program, deserve the green light to establish limits on health-damaging pollution and global warming pollution from automobiles.

California has acted based upon the facts, that cars and SUVs are a major contributor to global warming pollution, and rationally acted to reduce that pollution at the source. Furthermore, California's standards are feasible.

They can be met with technology already in the market and will save vehicle owners in lower maintenance and operating costs over the lifetime of the vehicles. The standards give the auto makers the flexibility to apply any technology they choose to reduce global warming emissions, including production of vehicles that use lower carbon fuels.

So in conclusion, California and the other states that have adopted the California program account for more than one-third of the US auto market. By cutting global warming pollution from tailpipes these states can help make a big dent in the emission reductions that we need to avoid the worst effects of global warming. And it will save money for consumers.

So on behalf of the Arizona PIRG Education Fund I urge the EPA to grant California's waiver request and give the states the power to cut global warming pollution from cars and light trucks.

PRESIDING OFFICER GRUNDLER: Thank you very much, Mr. Somers and for traveling here to present your testimony.

Next we have Mr. Hudema from Global Exchange.

Maybe not, okay. How about Mr. Burke from Republicans for Environmental Protection.

MR. BURKE: Hi, my name is Buddy Burke with Republicans for Environmental Protection. I am the State President of the California chapter of Republicans for Environmental Protection. Good afternoon. Thank you for coming out here to let us speak our mind here.

I'm going to be right more to the point. I'm going to be very brief. I don't want to repeat what has been said earlier today, or at least not very much of it. But I do want to mention a little bit to go along with what Carl said. You don't begin a long coast-to-coast journey by waiting for all the lights to turn green. The time to act is now. And what I'm here to say is I know I'm speaking for the majority of the rank and file grassroots Republicans. And what I found traveling throughout the country with the organization is that I am speaking for the majority.

We are recognizing the rights of the individual states. Republicans for Environmental Protection gives only the strongest support for the granting of a waiver for the state of California to allow it to set its own more restrictive standards. And with minimum regulation, what we do believe is that people will choose the better option. Sometimes government has to interfere slightly. That's

really what we're based upon.

The state has chosen to regulate its air quality through proper legislative process, in a manner which it deems most effective. As demonstrated dozens of times in recent history, California has taken a lead in conservation and is demonstrating that ongoing tradition yet again. So why should this be interfered with from the federal level now at this time?

We at Republicans for Environmental Protection see it as our solemn duty to support legislation which continues the tradition of conservation set forth by Presidents Roosevelt, Grant and of course President Nixon. What this does is this places a value -- in placing this value above all else. And it is our legal obligation as well.

The ultimate charge of the EPA is to guard our precious natural resources. The air we breathe and live in is clearly in that responsibility.

It was Senator Barry Goldwater who said:

> "While I am a great believer in the free enterprise system and all that it entails, I am an even stronger believer in the right of our people to live in a clean and pollution-free environment."

We at Republicans for Environmental Protection say, let's help the free market do what's right. And we

respectfully thank you for your time and for the opportunity and urge you to grant this waiver. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Burke.

You must be the representative from the Planning and Conservation League. State your name and present your testimony.

MR. VANDER SLUIS: Yes, my name is Matt Vander Sluis with the Planning and Conservation League. I am the Program Manager for our Global Warming Program. It is a program that is a collaboration between the National Wildlife Federation and the Planning and Conservation League. We are the state affiliate of the National Wildlife Federation here in California.

I will be even more brief. We need this waiver in California. It must happen. We have no other options. Global warming is here. There were 164 people in California who died last summer during a heat wave. It was a two-week heat wave, 164 people who died. In Europe in 2003 people went to the beach because it was hot and they came home and their family members were dead.

Global warming is here. It is affecting our lives today. This isn't a problem for 20 years from now or 30 years from now. It's a problem today. California is filling a gap in leadership. The EPA must step aside. Please grant us this waiver, thank you.

PRESIDING OFFICER GRUNDLER: Thank you very much, Mr. Vander Sluis. Any questions for the panel?

Thank you so much for your time.

We invite the last panel up, citizens of California, and any other individuals who added their name. This will be our last panel of the day and then we're going to be inviting the State of California up to make some summary remarks. So if any of these citizens are still here, Kelly Cuthbertson, Nicole Dickinson, Joanie Misrack, Anna Marie Sanchez, Keith Gagomiros, John Sweet, please step forward.

Is there anybody else in the audience that would like to present testimony at this time?

Seeing no hands I would like to invite the State of California back up to the podium to make some final remarks.

AIR RESOURCES BOARD CHIEF DEPUTY EXECUTIVE CACKETTE: I'd like to thank the EPA for allowing us to make some concluding remarks. I think there are several things that the Alliance brought up this morning in their testimony that we would like to put on the record.

The Alliance made -- Did you need a name? I'm sorry. Tom Cackette, Chief Deputy Executive Officer of the Air Resources Board.

The Alliance made several points this morning for

which I think a response is appropriate. These can be grouped into two areas. The first one is that there was no measurable impact of our greenhouse gas regulations on global warming, even if adopted nationwide or even if adopted worldwide.

And the second one was that ARB never made a protectiveness finding. And included in that comment of theirs includes issues such as our LEV standards allegedly not being more stringent than EPA's and that our greenhouse gas standards cause an increase in smog emissions. So if I could briefly address these issues I would appreciate it. And we'll add some more in our written comments on the 15th.

The first issue is that there is no impact of our regs on global warming. I think Dr. Long responded better than I can in his testimony this afternoon so I'd ask that you reread his comments very carefully because they were very articulate and to the point. But I wanted to add a couple more points.

First of all the IPCC has clearly articulated that solutions to increasing global warming involved reductions of emissions. If we are going to have climate change improvement it has got to be lower climate change emissions. And that is exactly what our regulations do, they reduce the emissions that cause global warming. The Alliance claim that our standards have no impact on global warming is

simply wrong and I think the scientists today add confirming testimony to that.

Second, the Alliance seems to be speaking out of both sides of its mouth. They tell you that reducing greenhouse gas emissions has no impact even if our standards were adopted worldwide, and yet in our testimony at the Washington DC hearing we presented this slide which shows several quotes from chief executive officers or very high officials of car companies. And let me just read them for you and the audience. First of all there is Tom LaSorda, who is the :President of DaimlerChrysler, or Chrysler now.

> "Every day our engineers are working to reduce greenhouse gases and petroleum consumption. We absolutely will be part of the solution and we will accelerate our efforts."

And James Press, well-known Board of Director (sic) of Toyota says;

> "Toyota is committed to continued action to address climate change and promote greater energy diversity. I believe the time is right to enlist the immense talent and might of the auto industry to help solve some of the key issues of our time. As an industry we

have an obligation to be part of the solution, not the problem."

So the point is that why would they be spending all this effort trying to reduce greenhouse gas emissions if in fact the Alliance, who represents their position, was correct, that adopting these kind of emission standards to reduce greenhouse gases from cars would be completely ineffectual whether done on a state level, a national level or on a worldwide level. There is clearly an inconsistency, which I think speaks, I guess, for itself.

Finally, if you are to accept the Alliance's claim of no impact of greenhouse gas standards on global warming I think you have a dilemma, which is that you will not be able to follow-through on the President's direction to you to adopt greenhouse gas emission standards for the country. I mean, why would you do that if there was absolutely no impact, no measurable impact on global climate change.

Let me skip to the second issue now, which is protectiveness. The Alliance claims that we never made a protectiveness argument and that is simply not true. All you have to do is read our resolution adopting the greenhouse gas standards -- and I think I've got it here somewhere. Maybe I don't. Here it is. "Be it further resolved." This is the resolution that was adopted in 2004 when we, when we adopted, the Board adopted these greenhouse

gas standards, the subject of this waiver hearing. It says:

> "Be it further resolved that the Board hereby determines that the regulations approved herein will not cause California motor vehicle emission standards in the aggregate to be less protective of public health and welfare than federal standards."

That is the formal Board statement that we are meeting the protectiveness claim.

Now there is a reason behind this, it's not just a hollow statement. This is a determination that we are required to make. And the only way that I think you can reject it is if you find that it's arbitrary and capricious. And let me give you the foundation for it.

First of all the Alliance claims that our smog emission standards are no longer more stringent than EPA's and that is simply not true. Look at our standards. Just look at the numbers. Half the cars in the state of California have to meet the PZEV standards, which are somewhere between 50 and 75 percent more stringent than the comparable federal standards.

Look at our evaporative emission standards. Those same PZEV vehicles have to have zero evaporative emissions. And our standard for the rest of the vehicles is more

stringent than EPA's. Look at our warranty, it's longer. Nearly twice as long for half the vehicles than EPA's. All these things show that our standards in fact are more stringent. And then when you get to greenhouse gas emissions I think the comparison is pretty straightforward. We have the standards you don't. So obviously our standards are more stringent.

They also made the claim that the greenhouse gas standards will increase smog-forming emissions and that is also false. All you have to do is look at page 189 of our final statement of reasons -- our initial statement of reasons, excuse me, our staff report supporting the standards that we took to our Board, and it shows the combined effects of all these things that they talked about today.

It shows the combined effects of what the rebound is in California, it's less than three percent based on a peer-reviewed study that we sponsored at the University of California. It shows what the impact of the higher cost of the vehicles is on fleet turnover. The vehicles will average 33 days older as a result of our standards. That is not going to exactly have a big impact. We did quantify it, however. And then we look at the upstream emissions, which are lower because of the effect of less fuel being used by these vehicles.

And when you put it all together and it is all documented in this report here is a one ton per day decrease of HC and NOx emissions compared to the base case. Not the 30 ton per day increase that was shown by the alliance. So I think that very clearly from both the smog standpoint and from a greenhouse gas standpoint and the formal statement of the Board there is a clear demonstration of protectiveness on the part of California.

And I think even Mr. Jackson today said he would submit additional information and more recent studies to backup this claim. So with that I thank you and I'd like to turn it over to Dr. Sawyer for the final concluding remarks.

PRESIDING OFFICER GRUNDLER: Thank you, Mr. Cackette. Dr. Sawyer.

AIR RESOURCES BOARD CHAIR SAWYER: I'm Dr. Robert Sawyer, Chair of the California Air Resources Board. Thank you, Mr. Grundler, and members of the EPA hearing panel for coming to Sacramento to receive the testimony of our political leaders, our business leaders, our air quality management districts, our scientists, our medical community, our environmental organizations and a broad range of leaders and citizens from the western United States. All in support of granting our waiver request.

Since my appointment as Air Resources Board Chair I have had the opportunity to visit most of the automobile

companies that provide the cars, light duty trucks, SUV and vans that Californians drive. The message I received from the leaders and engineers of these companies was very different from what you heard today from the lobbyist and lawyer of the Alliance of Automotive Manufacturers.

The engineers are productively working on the development and implementation of the next generation of clean, efficient, low greenhouse gas emitting vehicle. The technology that Air Resources Board engineers have projected to meet the requirements of our greenhouse gas emissions standard exists and further improvements are on the way.

I invite the auto industry to join our efforts to reduce greenhouse gases. By granting our waiver request you will send the auto industry a clear message that they need to do their part to meet the threat of global warming. Thank you.

PRESIDING OFFICER GRUNDLER: Thank you, Dr. Sawyer.

Let me close by thanking everyone who took the time to present testimony today, to participate in this important process. I want to assure everyone that EPA understands the significance of these proceedings, not just here in California but across the United States. This is a major issue for us to deal with.

And I want to thank Cal/EPA and ARB for assisting

in all the logistics that went into putting into this -- putting together this hearing. I know a lot of work goes into this and it went very, very smoothly. My staff is grateful.

And finally, we are going to hold the record open until June 15 for anybody who would like to submit further comments. We stand adjourned, thank you very much.

(Whereupon, at 4:16 p.m., the hearing was adjourned.)

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CERTIFICATE OF REPORTER

I, JOHN COTA, do hereby certify that I am a disinterested person herein; that I recorded the foregoing hearing on a tape recorder; that thereafter the tape recording was transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, or in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 4th day of June, 2007.