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ENDANGERMENT AND CAUSE	)	
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OR CONTRIBUTE FINDINGS	)	
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FOR GREENHOUSE GASES	)	
	)	
UNDER THE CLEAN AIR ACT	)	Docket No.:
	)	EPA-HQ-OAR-2009-0171
	)	

PUBLIC HEARING

9:00 a.m.

Thursday, May 21, 2009

2211 Alaskan Way, Pier 66

Bell Harbor Conference Center

Seattle, Washington

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P R O C E E D I N G S

MS. KRUGER: Well, welcome and good morning, everyone. My name is Dina Kruger. I'm the director of EPA's Climate Change Division. And on behalf of the Environmental Protection Agency, I would like to welcome you to today's public hearing on our proposal that findS that greenhouse gas emissions endanger public health and welfare, and that greenhouse gas emissions from new motor vehicles cause and contribute to the climate change problem under the Clean Air Act.

As the proposed endangerment findings states, in both magnitude and probability, climate change is an enormous problem. The greenhouse gases that are responsible for it endanger public health and welfare within the meaning of the Clean Air Act. And we're here today to hear from all of you and your views on this very important issue.

This is actually the second of two hearings. The first was held on Monday, the 18th, just this Monday, in Washington D.C. In order to increase public access to this hearing, we're providing audio web streaming, and there's also a call-in line for listening only.

I'm going to be the presiding officer for today's hearing, and on the panel with me are Rona Birnbaum, who is the Chief of the Climate Science and Impacts Branch; Jason Samenow, a technical expert on the proposed findings; and Rick Albright, Director of the Office of Air, Waste and Toxics for EPA Region 10. Rona, Jason and I will alternate as the presiding officer throughout the day.

The objectives of this hearing, as I mentioned, are to receive oral testimony from interested parties regarding EPA's proposed endangerment and cause or contribute findings. We're not going to be engaging in a back and forth discussion, but we may ask clarifying questions if the need arises.

In terms of a few housekeeping details, we are having this hearing recorded, and we will be making a transcript available for public inspection and copy at EPA's Air and Radiation Docket. And there is a docket number on our web site so that you can track that down if you want to look at it. There are not going to be any overheads or PowerPoint presentations. Those that are listening via the web are just going to see a single slide that has the title of this hearing.

The hearing will be conducted informally. There are not formal rules of evidence that apply. However, as the presiding officer, I am authorized to strike from the record statements that are needlessly repetitive or deemed irrelevant, and to enforce reasonable time limits on our speakers. Today, speakers are going to have three minutes to make their comments. This is in light of the high demand from all of you to speak, and we're extremely happy about that. To assist speakers in staying within the time limits, we do have a timing light on the podium, and so you will see it turn yellow when you have a minute left and start flashing red when it's time to stop.

You are able to make oral statements today. You can also then expand those statements in writing for the record, and both written and oral comments that we receive through this comment period have equal weight with us. If you're interested in submitting written comments, any of you, even people that have not signed up to speak, you can go to our EPA web site, epa.gov/climatechange. You'll find information on how to do that.

I would like to ask the witnesses today to state your name and affiliation prior to making your oral statements. We've got a very full schedule.

We'll be taking breaks in the midmorning, lunch, afternoon and a dinner break. We will keep going until we hear from everyone, and if that means that we go late into the evening, that's fine with us, even though we're all on East Coast time, so that's why we're hoping to enforce these time limits.

And before I start, I would like to say that we really appreciate that many of you have traveled a long way to come and participate in this hearing. My staff and I recognize the significance of these proposed findings, and we very much welcome your thoughts and input as we move forward.

And on a personal note, I guess I would like to say, I'm also very happy that we were able to arrange this hearing in Seattle and that we have such a turnout today. I grew up in Washington State on the east side. I went to the University of Washington. It's wonderful to be back here. It's wonderful that it's a sunny day and we can see the mountains.

Let me give you just a little bit of background about how we got to this point and then we'll get down to business. In 1999, EPA received a petition to regulate emissions of greenhouse gases from new motor vehicles and vehicle engines under Section 202(a) of the Clean Air Act. EPA denied this

petition in 2003. A lawsuit was filed, which ultimately found its way to the Supreme Court, and the Supreme Court decided in Massachusetts v. EPA on April 2, 2007, to reject EPA's reasons for denying the petition.

The Supreme Court found that greenhouse gases are air pollutants under the Clean Air Act, and the Court stated that the EPA administrator must follow the statutory criteria of section 202(a) and make a determination regarding the role of greenhouse gas emissions from new motor vehicles and engines.

The options for this determination were to review the science and conclude one of three things: That greenhouse gases do endanger public health and welfare; that they do not endanger public health and welfare; or that the science is too uncertain to make a determination.

In July of 2008, in response to the Supreme Court's decision, EPA published an Advanced Notice of Proposed Rulemaking, which we call in our jargon an ANPR, on regulating greenhouse gases under the Clean Air Act. The ANPR did not make any determination regarding endangerment, but rather presented the work that we had done to date and requested comment on the implications of making an endangerment finding, as

well as the underlying science on which we were relying. We received over 200,000 comments on the ANPR, and many of them were very helpful to us as we've moved forward.

On April 17, 2009, after a thorough scientific review, Administrator Lisa Jackson signed the proposed finding that greenhouse gases contribute to air pollution that endangers public health and welfare of current and future generations.

The proposed finding identifies six greenhouse gases that are reasonably anticipated to threaten public health and welfare, and the proposal also finds that the combined emissions of carbon dioxide, methane, nitrous oxide and hydrofluorocarbons from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases, and hence to the threat of climate change.

Our proposed finding does not include any proposed regulations, and before taking additional steps to regulate greenhouse gases under the Clean Air Act, we will be seeking additional public comment through an appropriate rulemaking process.

EPA has planned for a 60-day public comment period on this proposal and that ends on June 23,

2009. At that time we will be reviewing and responding to the public comments we receive, the comments that we receive through these hearings as well as written comments. And as of now no decision has been made regarding the timing of issuing a final finding following the public comment period.

We're conducting this hearing in accordance with the Clean Air Act under which EPA provides interested parties with the opportunity for oral presentations of views and arguments, as well as an opportunity to submit written comments. And so this hearing, as I've said before, is a forum for these oral presentations.

Finally, I would like to note that a number of elected state and public officials have been scheduled to testify at today's hearing. We are extremely excited to have such a strong turnout, both from such leading figures in the state, and also from all of you members of the public as well.

And with that I would like to ask Governor Christine Gregoire to start us off.

GOVERNOR GREGOIRE: Well, good morning, and thank you very, very much for coming to the great State of Washington. Welcome back. And to those of you who are from out of state we're glad you're here,

and to those who are in state we're glad you stayed here.

It is a pleasure for me to be here today, and I thought I would first mention to you that today we submitted on behalf of the National Governors Association, led by Washington State, the names of 30 governors in support of capping greenhouse gases based on science and an energy policy that advances the work of EPA. I'm very proud of that submission today to Congress. So on behalf of the people of the State of Washington, thank you for the opportunity to come forward and testify today. With your permission, I would like to submit more lengthy testimony in writing.

As you know, Washington is known as The Evergreen State. And here we have a lot of economic success and environmental stewardship. We consider the two to go hand in hand. We have a state full of diverse agricultural products that we ship overseas around the globe, expansive forests, abundant marine resources. It's a home for thriving families and businesses that depend on a clean and a safe environment for their health and for their well-being. Climate change threatens all of that, and all of us who live here. That's why we've taken a leadership

role in reducing emissions of greenhouse gases.

Since I took office in 2005, we did adopt the California clean car standards. Also in 2005, we led the nation in most progressive kinds of stringent energy efficiency and green building code standards. In 2006, the people of the State of Washington by initiative adopted renewable energy standards for our base load electrical generation.

In 2007, we set targets for greenhouse gas emission reductions by executive action, and that was adopted by the legislature in 2008, and this year the legislature again renewed our tax incentives for clean energy products, the results of which is Washington State is now the fifth largest producer of wind power in the United States.

Later today, I will issue an executive order that directs additional actions to further reduce climate change, greenhouse gas emissions in Washington State. Climate shapes everything, as you folks well know. Ecosystems, our crops, our water supply, in Eastern Washington most particularly. Our fisheries, our economy, our lifestyle, our health. We know that while a degree or two change in temperature might not seem significant to the average person, it can make a real difference between rain and snow,

between drought and flood, between a healthy forest and a forest that is devastated by wildfire, between abundant salmon runs and extinction.

The consequences to our health, to our environment and to our economy can be staggering. The effects of higher temperatures on our health are serious and wide-ranging. Projected increases in illness and death associated with heat stress, air pollution, infectious disease outbreaks, all clearly support EPA's endangerment finding.

Just this last month a study was released by the University of Washington that shows we've already lost 20 percent of our snow pack. Now, as a skier I could say that's disappointing, but let's really look at just how significant that could be for Washington State. Millions of our citizens rely on that snow pack for our drinking water supplies. Our multi-billion dollar agriculture industry needs the water stored in that snow pack to irrigate the crops to feed our families and to generate our economy.

That same water feeds our rivers and our streams that nurture our salmon and that we rely on that as well for our food and for our commerce. Less water means problems for our clean hydro power system on which we rely for 60 percent of the region's

electricity.

We face other threats from climate change. In my first four years as governor, I made more emergency declarations than ever in the history of the State of Washington. Within 13 months, we suffered two 100-year floods. Our summers typically now are experiencing droughts and devastating wildfires. And rising sea levels have threatened nearly 40 communities, including several of Washington's largest cities along our 2,300 miles of shoreline.

Climate change poses a significant threat to the economy, just like it does to our environment. In February of this year, a report detailed the economic stress and costs that Washington State will experience if we simply have a business-as-usual approach to climate change. Economists concluded that Washington's families, businesses, and communities are likely to incur billions of dollars of annual costs if we fail to reduce climate change greenhouse gas pollution. Increased public health expenses alone could account for 1.3 billion dollars a year.

So I join in urging EPA to timely make an endangerment finding and move forward. Use the finding and the knowledge of what's possible from innovative states like Washington and the western

states that are part of the Western Climate Initiative to take strong national action to reduce greenhouse gas emissions. The problem is too big, the consequences too dire, for us to wait any longer.

I want to thank you for the opportunity to testify here today. It's a pleasure to have partners in Washington D.C., as we refer to it as the "other Washington." The Obama Administration and EPA under Lisa Jackson are making good progress in addressing climate change. We look forward to being a partner with you now and in the future to address this most significant issue to our state and to this nation. Thank you very much.

MS. KRUGER: Thank you. Okay. Next I would like to invite state Senator Phil Rockefeller and state Representative Upthegrove to come up to the podium.

SENATOR ROCKEFELLER: Good morning. Can you hear? I'm Phil Rockefeller, Washington State senator and chair of the Senate Environment Water and Energy Committee. Thank you again for taking testimony on the proposed EPA endangerment findings. I strongly endorse the administration's and EPA's approach to leave the past behind and move forward now aggressively to address climate change, which is, in

my view, the paramount environmental challenge of our time.

EPA should certainly find that current and projected concentrations of specified greenhouse gases may reasonably be expected to threaten the public health and welfare of current and future generations. That is, I believe, what the statute provides for.

Some related observations. As the governor has noted, our state has already been very active in this arena. Our policies on greenhouse gases already recognized the very same pollutants that are enumerated in EPA's proposed finding. Our state policy conclusions followed the review of best available science information in our region, which was compiled by the Climate Impacts Group at the University of Washington. That information projects numerous adverse impacts to our state from climate changes caused by increasing concentrations of these gases.

Those impacts include adverse and seasonal shortages of stream flow in sensitive watersheds; agricultural and hydro power water shortages; thermal stress and migration barriers for salmon; more frequent and more intense forest fires; increased flooding in Western Washington; and importantly,

higher rates of human mortality and morbidity due to heat and air pollution-related effects. These adverse effects certainly, quote, threaten the public health and safety, unquote, within the meaning and intent of the Federal Clean Air Act.

My colleague, Representative Upthegrove, will be addressing the issues associated with emissions from motor vehicles, so I will pass over that for now and put that in my written comments. But another area of concern to the State of Washington arises due to our strenuous efforts to protect marine resources, including the recovery and stewardship of Puget Sound. I refer to the growing evidence of ocean acidification and its adverse impact upon the web of life. Science-based research on the coasts of Washington and Oregon over the last two years have borne out the concern of increasing atmospheric levels of carbon dioxide, which in turn led to deposition of carbon dioxide in the ocean and an accelerating shift toward acidity in those waters.

This is yet another endangerment, in my opinion, for our state because it depends heavily upon healthy ocean and Puget Sound ecosystems for salmon stocks, for shellfish, for other wildlife, and of course for various commercial and recreational

enterprises, as well as tourism.

Finally, the buildup of greenhouse gases in the atmosphere due to human activity may take decades, or potentially even centuries to overcome, and while ambitious mitigation efforts are urgently needed to blunt the severity of those future impacts, we must also be prepared to contend with the now unavoidable consequences of impacts that were set in motion during years of inaction and neglect.

I believe that we have moved beyond the time when it would be appropriate to follow the precautionary principle. We must now address the disruption of natural systems and find ways to respond to long-term stresses on ecosystems that support human food, fiber, fuel and water supply. Communities throughout our state and the nation will be obliged to decide how best to deal with the mounting climate impacts affecting health of their citizens, their environment, and their social and economic well-being. EPA can and should provide leadership in ensuring that these communities have the tools and information they need, particularly from regional and local climate modeling, to design durable, science-based adaptation strategies.

In closing, I welcome EPA's return to a

leadership role in the climate change arena, and I look forward to a renewal of EPA's close partnership with states like Washington and others who have been on the leading edge, and to all citizens who strive to confront this most serious challenge. Thank you again for coming today, and thank you for holding this hearing, and best wishes in your continued efforts to protect our air and other life-sustaining natural resources.

REPRESENTATIVE UPTHEGROVE: Good morning. My name is Dave Upthegrove, and I have the honor as serving as chairman of the House Ecology and Parks Committee in the Washington State legislature, and I enthusiastically support the EPA's findings. And I'm convinced that the vast majority of Americans will applaud your findings once they learn about them. And that's certainly true here in Washington, because Governor Gregoire is right. Washington's unique natural environment make environmental values come very naturally here.

In my case, the high school and college summers I spent teaching environmental science of the Olympic Peninsula, leading hikes through the North Cascades, taught me a lifelong love of our clean air, our wildlife, our natural beauty, but my academic work

in environmental science, and everything I've learned with leading the Ecology and Parks Committee, have also taught me to fear for our environmental health. There is not a shadow of a doubt that greenhouse gases threaten the public health and welfare of current and future generations, or that motor vehicle emissions are a major contributor.

And the threats are not on the horizon. They're here now. Our farms and our forests, our fish and our future are endangered now. To take a single example, our entire state, including our hydro power, depends on abundant water from mountain snow packs, and yet, as the governor said, University of Washington scientists have shown that climate change is already reducing Cascade Range snow pack by 20 percent. That's happening right now as we speak in this room. And without immediate action, the snow pack trend lines point to disaster.

And yes, motor vehicles are literally fueling the threat. I read that Administrator Jackson found that emissions from on-road vehicles amount to 24 percent of total greenhouse gas emissions nationwide. And here in Washington the causal contribution is even clearer. On-road vehicles account for nearly half of our total emissions. And

more vehicles can only mean worse problems ahead until decisive action is taken soon. The EPA findings are exactly the kind of decisive step we need to move forward.

Let me close with one last point. Washington is blessed to have great leaders for the environment, including Governor Gregoire, Climate Solutions, the Washington Environmental Council, and many great business leaders, but what America needs is national leadership. We need the Obama Administration to change the political climate so we can unite as a nation to protect the global climate.

President Obama and Administrator Jackson have made a good beginning, but we must follow through and soon. Leaving our carbon footprints on the backs of our children and grandchildren would be an unforgivable moral crime. Future generations have a right to experience good health and the awe and lifelong love of our environment that many of us here in this room have enjoyed. Whether or not they do or not is up to us. Thank you.

MS. KRUGER: Thank you very much for your remarks. Now I'm going to call up our next panel. Elizabeth Willmott from King County. Darcy Nothnagle, reading a statement from Representative McDermott.

Celina Cunningham reading a statement from Representative Inslee. Preston Hardison and Terry Williams from the Tulalip tribes of Washington.

MS. WILLMOTT: Thank you. My name is Elizabeth Willmott, and I work for King County as the Climate Change Program coordinator. I'm here today on behalf of former King County Executive Ron Sims and interim King County Executive Kurt Triplett to support the U.S. EPA finding that the current concentrations of greenhouse gas emissions in the earth's atmosphere threatens the public health and welfare of current and future generations in King County.

Global climate change concerns the King County Executive for several reasons. First, the causes of climate change are local. Regionally, our biggest source of greenhouse gas emissions is transportation. Operationally, as a government, we emit carbon dioxide, methane and other gases as the public transit agency and the wastewater treatment provider for the county geographic area.

We have a responsibility to show leadership in every way we can, from our hybrid buses to our waste energy projects, and to join with communities across the world to stabilize the global climate by reducing these emissions aggressively.

Second, the consequences of climate change are also local. As my colleague Matt Kuharic will address later on, according to the University of Washington Climate Impacts Group, some of our region's key climate impacts that pose a threat to our citizen's human health and welfare include more intense and frequent flooding, as we have seen in past years; reduced snow pack for water supply and urban heat. And we have not even begun to see the full social impacts of this crisis. But we know that climate change will have disproportionate impacts on low income communities.

We have begun to prepare for the known impacts based on the peer-reviewed science of this climate change. But it will be much more costly to react to the end results of this crisis, all of these impacts, than to do what we can now to ward off the worst of it.

Fortunately, the solutions to climate change are also local. King County has published an extensive climate plan on how we are working to reduce carbon emissions through smart growth, land use, and transportation policies, clean vehicle investments, and modifications to our business practices. King County was the first county and first transit agency

to join the Chicago Climate Exchange to expand our expertise in carbon counting and reduction.

Just this past year, we worked with our development community to prepare a proposed ordinance to include carbon emissions in our state Environmental Policy Act Review. And now we are joining with other Puget Sound municipalities to use our economic recovery funding to reduce carbon and create jobs. On all of these counts we have tried and hopefully succeeded to be a living lab of innovation.

In sum, the former and current King County executives support the EPA findings, but King County also stands ready as an example that communities worldwide can become economically resilient by investing in smart growth, low carbon technologies and greener ways of life. We urge the federal government to act now to help us fully capture that opportunity.

MS. NOTHNAGLE: Good morning. My name is Darcy Nothnagle, and I'm here on behalf of Congressman Jim McDermott. As you know, there are votes scheduled today in the U.S. Congress and the Congressman was not able to be here himself, and I thank you for allowing me to enter this statement on his behalf.

Thank you for the opportunity to discuss the proposed endangerment findings for greenhouse gas

emissions under the Clean Air Act. As a member of Congress who represents Seattle in the U.S. House of Representatives, I applaud your decision to hold this important hearing in Seattle. As you will learn, we are national leaders in efforts to reduce greenhouse gas emissions by promoting energy efficiency and the production of electricity from renewable means including wind and solar technology.

One need only look out the windows of this conference center to enjoy Elliott Bay and the Olympic Mountains to understand why we have a strong sense of connection to the environment upon which we rely. We know today that methane, carbon dioxide, nitrous oxide, hydrofluorocarbons, along with other greenhouse gases, contribute substantially to global climate change. We also know that the United States has a leading role and responsibility in reducing emissions. That's clear in the proposed endangerment finding from the Environmental Protection Agency. It's a critical first step towards finding that we are a major contributor to climate change, the effects of which will have an irreversible and negative impact on our economy, national security, and our way of life, but it's more than that. American inaction or lack of leadership will doom billions of people into living a

life of abject poverty.

Although climate change is a global occurrence, its effects will be felt most severely by those who are least able to cope. Over a billion people live today on a dollar a day in poor countries. These people depend on natural resources, predictable weather patterns, and subsistence farming, and their circumstances provide virtually no ability to adapt to climate changes. From the river economies of Bangladesh to the island communities in Southeast Asia, global warming would produce extreme global poverty.

For decades we have seen the warning signs, yet we have failed to adequately act. Our oceans, long seen as a catch basin for absorbing excess carbon, are acidifying, endangering the entire ocean ecosystem from crustaceans to corals.

Furthermore, prolonged droughts, more intense storms, changing weather patterns, melting glaciers, and increasing sea levels are and will continue to threaten and destroy the world around us. Only by taking bold and coordinated action will we have any chance of stopping further environmental destruction and preserving our world for future generations.

This coordination needs to include every American community, but also an international court to reduce so-called GHG emissions. The EPA proposal is a good place to start. Over 23 percent, as was mentioned earlier, of all U.S. greenhouse gases are emitted by mobile sources, meaning passenger cars, light-duty trucks, other trucks, buses and motorcycles. The transportation sector's contribution to greenhouse gases are substantial and can be curbed through the widespread implementation of existing technology, coupled with new technology and innovation. It's once again time for America to emerge as a global leader in environmental stewardship. We can do so in a way that positions American technology and know-how in ways that will create and sustain jobs through a new century of American prosperity. We're at a crossroads.

Through the windows in this room, we look out upon a world we cherish and want to protect, but climate changes threatens all of us. Our window for action is before us, and let us not forget that the future of our city, our country and our world is before us.

MS. KRUGER: Thank you very much.

MS. CUNNINGHAM: Hi. My name is Celina

Cunningham, and I'm reading a statement on behalf of Congressman Inslee as he's in DC billing as well.

I'm sorry I cannot join you today, but I'm overjoyed to report that I'm marking up our clean energy bill capping carbon pollution as this letter is being read. The time to regulate global warming pollution has come, and by midnight tonight the House and Energy Commerce Committee will have passed a bill capping our national emissions of carbon dioxide for the first time in American history. This is entirely appropriate, because when it comes to global warming we are at the midnight hour. Both environmentally and economically we cannot afford to wait. The Puget Sound and the snowcapped mountains of Western Washington are a perfect backdrop for today's hearing, as they are both important landmarks of this region. The mountains and Sound will serve as visual reminders for our mission here today as both are gravely endangered by ocean acidification and depleted snow pack, two dangers posed by climate change.

I commend President Obama and Administrator Jackson for their foresight and courage in recognizing the threat posed by greenhouse gas pollution. While I wholeheartedly support the EPA's mission, ultimately I agree with the President's assessment that Congress is

in the best position to design and implement a nationwide system that would reduce emissions, develop a clean energy economy, while being sensitive to the diverse regions of the country and the unique concerns of low to middle economic consumers and trade-exposed energy-intensive industries.

When we pass this bill, global warming pollution will be limited. Polluters will pay, and consumers and businesses will enjoy a slew of benefits designed to help them both produce and enjoy the clean energy products that can revolutionize our economy. When that happens, EPA will not need to take further action. Most importantly, we will now do for solar energy and electric cars what Boeing did for aerospace. We will do for energy efficiency what Microsoft did for software.

Thank you for coming to Washington, a state that understands both global warming and innovation. From the Infinia Company doing solar energy in the Tri-Cities, to Snohomish County PUD doing tile and geothermal in Everett, to a company doing computer efficiency work in Seattle, our state is ready to lead the country and the world in building a new energy economy.

MS. KRUGER: Thank you.

MR. WILLIAMS: Good morning. My name is Terry Williams, and with me is Preston Hardison. We're from the Tulalip tribes. I was also the first director of the American Indian Environmental Office in Washington D.C., and I'm here just to make a request for the tribes to have a face-to-face meeting with Carol Browner, and hope that you can make that request for us. Preston will now give us some background of the issues.

MR. HARDISON: Thank you for this opportunity to address this panel. We heartily support these rules to declare the six greenhouse gases as contributors to air pollution. Human-caused greenhouse gas emissions have durable effects on climate change. Greenhouse gases are not simply chemical or particulate pollutants whose impact is measured in terms of respiratory diseases and cancers, but in the way that they flow across all boundaries to unravel and disrupt the fabric of life.

Greenhouse gases are, foremost, a form of thermal pollution causing climatic envelopes to change in ways that shift species around on the landscape and break apart ecosystems. These changes bring invasive species and diseases in their wake, and strongly restrict the services that ecosystems provide for

human health and well-being, pollinators, water purification, storage services, and flood and erosion control, among others.

Although many tribes are involved in the mixed economy, all still depend on access to traditional foods and medicines as part of their economy, their traditional practices and ceremonies that lie at the core of their identity. The right to maintain this identity is fundamental to the treaties in which vast lands were ceded in order to keep the peace, and to receive the permanent trust guaranteed that the tribes would reserve to themselves their governance and choice over their ways of being.

Their ability to sustain their culture is severely threatened by climate change. Their rights to traditional resources are fixed to their reservations, trust lands, and some federal lands. Tribal members cannot move to escape climate change without losing their rights to hunt, fish, track, harvest and gather, and losing their connections to their ancestors and ancient stories. And as they remain, climate change is pulling the ecological rug from under them.

Mitigation measures, such as CAFE standards, alternative energy and clean energy, are a

necessary start, but not a sufficient end point for federal policy. As two recent studies from the U.S. Climate Change Science Program make very clear, ecosystems also have thresholds and tipping points as well as the climate system. We may not be able to fix them in the future at any cost if we do not start repairing them now and reweaving the fabric of life so that ecosystems are made resilient and resistant to the impacts of climate change.

Ecosystem-based adaptation is an approach that tries to limit the impacts of greenhouse gases on ecosystems ensuring the health and security of all peoples in their homelands. We believe this natural security option should be one pillar of national climate policy providing restoration incentives and benefits for all Americans. The Tulalip tribes stand ready to contribute to this. Thank you.

MS. KRUGER: Thank you very much for those remarks and thank you to the panel. I would now like to call up our next panel, so if you hear your name you can come on up. Derek Walker from the Environmental Defense Fund. Jim Hanna from Starbucks. Sarah Severn from Nike. Daniel Davids from Plug In America, and Ash Awad walked from McKinstry Company.

MR. WALKER: Good morning. I'm Derek

Walker, Director of the California Climate Program and Environmental Defense Fund, and on behalf of our over 500,000 members nationwide, thank you for the opportunity to testify today. I have two points that I'd like to cover. One is the clear and present danger that global warming presents to the western United States; and secondly, the bizarre comments that EPA received from other federal agencies during the development of this rule.

We emphatically support and respectfully request prompt action by EPA in completing this endangerment proposal. My home state of California, much like Washington, has a vast coastline, more than 1,000 miles, and 70 percent of our population lives within 60 miles of the coast. That means that the sea level rise, which is inexorably linked to climate change, will have a devastating impact on our coastal communities, coastal infrastructure, ecological systems, and all the other ways of life that are really reliant upon being close to the sea.

Our fresh water resources are very vulnerable to a changing climate. We're prone to wildfires, as most people have read in newspapers and elsewhere. I'm sure you can relate to that here. Smog levels in our cities are already at dangerous

levels, and our agriculture levels are very vulnerable as well to higher temperatures, and of course rising temperatures have a particularly devastating impact on the elderly, the poor and other vulnerable populations.

Throughout the interior western United States, there are several emerging mega cities, including the Wasatch Front in Utah, City of Las Vegas, and the Front Range of Colorado, as well as the Phoenix metropolitan area. All of these areas will be disrupted by changing precipitation patterns and rely on regular water supplies for maintaining their growth.

In terms of my second point, as EPA was developing this rule, they have had a very, very important commitment to transparency in the way that they've developed the policy. Unfortunately, the disclosure of the comments that they received has been invoked by opponents of EPA's action to try to derail this progress. The interagency comments are seriously flawed in several respects.

I want to focus on one particular section which has a bizarre recommendation for a move and medicate strategy. I quote: For example, climate change is likely to unfold slowly and people may

migrate from hot regions, for example, Arizona, to more temperate regions, for example, Minnesota, and this would mitigate the adverse impacts on health, although people would incur migration costs. Further, climate change is likely to lead to innovation that mitigates the ozone-related health impacts. It seems reasonable to assume that in the absence of regulation, new medicines may be developed to lessen the health impacts of ozone.

Some may prefer the move and medicate strategy, but Environmental Defense Fund and most of the folks here today prefer science-based solutions.

So, in closing we applaud EPA for their leadership on this issue, and thank you so much for giving us the opportunity to speak.

MR. HANNA: My name is Jim Hanna. I'm the Director of Environmental Impacts at Starbucks Coffee Company. On behalf of Starbucks, thank you for providing me the opportunity to testify today. Starbucks is an agricultural company at our core, and we recognized long ago that climate change represents a direct business risk to our company and to the 30 million people around the world involved in coffee production and trade. In fact, we are hearing from our farmers that increasing severe events, changing

soil conditions, and greater instances of pest infestations are starting to impact production of coffee.

Beyond coffee, we believe that all agricultural sectors are in the crosshairs of an upheaval just over the horizon. So yes, we do believe that greenhouse gases represent immediate endangerment to public health, and there should be no more debate on this issue.

Internally, Starbucks is making substantial investments to reduce our own footprint across our business. We recently announced that every new store we build will be 25 percent more energy efficient and will be certified green under the LEED rating system. We are working internationally with groups like Conservation International to help our coffee farmers become carbon farmers by protecting and restoring the tropical forest ecosystems in and around their coffee plantations. It's an often overlooked fact that actually 20 percent of climate change is due to the destruction of tropical forests, far exceeding the contribution to all sources of transportation. But Starbucks also realizes that we could reduce our carbon footprint to zero, and, if you would pardon the pun, that wouldn't really amount to a hill of beans on

a global scale.

The truly bold steps that are needed to restore our leadership in the world and rapidly transition to a 21st century low carbon economy can only be driven by aggressive and immediate federal action. This is precisely why Starbucks and our partners at Timberland, Levi Strauss, Sun Microsystems, and Nike formed a business coalition called BICEP, which is really Business for Innovative Climate and Energy Policy, and why we are calling for the federal climate and energy legislation that incorporates a cap and trade system with 100 percent auction credits; that sets immediate energy efficiency policies that will save businesses billions of dollars in operating costs; that eliminates subsidies for nonrenewable energy industries; and limits the construction of new coal-fired power plants to those that have carbon-capturing sequestration technology implemented from day one.

BICEP also hopes to play a key role in making it clear to our elected officials that they cannot continue to count on the industry or the business sector as a monolithic political shield to avoid voting for aggressive, meaningful climate legislation. Those businesses who are truly honest in

this debate already know that the greatest threat to industry is inaction and the destabilizing repercussions of that inaction, not comprehensive, climate legislation.

In closing, Starbucks and our colleagues at BICEP encourage a legislative climate solution, but also urge EPA and all of you to use the tools at your disposal to make sure that this happens, including the rulemaking process we're discussing today.

Simply put, we're asking you to give us the tools to innovate. We're businesses. That's what we do. That's how we thrive. That's how we survive. Set the guardrails for us. Set the rules for us. Give us a set of standards and give us the certainty we need to forecast and invest, and we'll solve this thing together. Thanks again for the opportunity to testify, and appreciate it.

MS. SEVERN: For the record, my name is Sarah Severn, and I'm Nike's Director of Corporate Responsibility Horizons. On behalf of Nike, I would like to thank you for providing me the opportunity to testify today. Nike has been addressing its own contribution to climate change since 1995. We are deeply committed to the concept of a low carbon economy, believing that early action on this issue

will provide us with a business advantage. Our company is global, and we have an extensive supply chain. Climate change and the related systems impacts represents substantial business risks for us.

To address this challenge, Nike has partnered with the World Wildlife Fund to reduce CO_2 emissions from our own operations by 18 percent between 1998 and 2005, despite significant growth in our business. We are also one of the EPA's national top 50 buyers of green power for several years. We've spent many years and millions of dollars in R&D to eliminate the potent greenhouse gas SF_6, sulfur hexafluoride, from the airbag units that are a key technology of Nike footwear. The EPA was instrumental in focusing our attention on the global warming potential of SF_6.

However, we've reached a point in the U.S. where the easy gains have been made. Without significant action on the part of government we will not be able to make further progress. For this reason, we were a founding partner of by BICEP, Business for Innovative Climate and Energy Policy, a coalition of consumer-facing brands advocating for climate and energy legislation that meets a core set of principles that my colleague at Starbucks has

already mentioned.

BICEP members believe that scientifically-based targets are necessary if we are to avoid the worst case scenarios of climate change, and that a significant price on carbon, correctly applied, will unleash the innovation that is required to stimulate the economy and move us toward a low carbon energy-secure future. Nike and BICEP believe that federal legislation is the best way to move climate change and energy policy forward in the United States.

The legislative process is deliberative, transparent and based on consensus, but we also recognize that the legislative process needs continuous prodding. If by initiating the regulatory process to battle climate change, the administration can promote renewable energy development and energy efficiency to spur that process forward, we are fully supportive. The Waxman-Markey climate and energy bill represents a significant step forward. In the event that this bill does not pass, EPA's action to regulate carbon in a stringent manner under the Clean Air Act should, in turn, make the market-based cap and trade system far more desirable.

Experience demonstrates that strict administrative rules spurn new research and

development and innovative pollution control technologies, and in this way new rules may play a critical role in getting funds directed towards the technology. Nike helped establish BICEP to move this debate forward and demonstrate that leading companies deserve and want a government that leads.

In closing, the EPA has an opportunity to impact international agreements beyond the U.S. The only way we can hope to get a global agreement in Copenhagen is if the U.S. demonstrates leadership through the passage of game-changing rules that will reduce our own oversized carbon footprint. EPA's proposed rule is a step in that direction. Thank you.

MR. DAVIDS: Thank you, madam director and fellow EPA representatives for this opportunity today. My name is Daniel Davids, and I am president of Plug In America. We are the leading nonprofit organization advocating for the electrification of our transportation system. We were born of a grassroots effort to save electric vehicles from the crusher in the wake of the successful California Zero Emissions Vehicle Program.

To get to this hearing today, I drove one of the survivors of that program, a Toyota RAV-4 EV. It is fully freeway capable and has over 100 miles of

range. I will emit a total of zero greenhouse gases in my travels today.

Plug In America supports the EPA's finding that carbon dioxide and the five additional gases be classified as pollutants. While sound science has identified the cause of global warming, the problem with our rampant burning of fossil fuels over the last century has been that the cost of this activity has been externalized. Carbon-based fuel was cheap and plentiful. Polluters passed on the true cost to future generations of people, plants and animals. It is essential that the authority and power of the Clean Air Act be used to regulate greenhouse gas emissions.

The transportation sector is a major source of those greenhouse gases. But the internal combustion engine, no matter how highly refined, is inherently dirty and inefficient. Only a fraction of the energy in a gallon of gasoline goes to actually moving an automobile, perhaps 20 percent. Electric vehicles, on the other hand, release no emissions and are extremely efficient, making effective use of up to 90 percent of their on-board electrical charge.

To add insult to injury, internal combustion vehicles become even less efficient and emit more contaminants over time. On the other hand,

EVs become cleaner as the grid becomes more renewable.

The greater efficiency of plug-in vehicles, along with the lower cost of electric fuel, ensures a rapid offset of the higher initial cost of plug-in cars. Further, because electric drive trains are simpler, maintenance cost is reduced dramatically.

As President Obama said on Tuesday when he announced the historic agreement to raise fuel economy standards, purchasers of efficient new vehicles will enjoy lower total life cycle costs. Plug-in hybrid and pure electric vehicles not only create new product opportunities for today's struggling car makers, they are synergistic with our national goal of creating a smart electric grid.

In conclusion, Plug In America believes that the EPA is correct to designate CO_2 and the other gases as an endangerment; that regulation under the Clean Air Act is appropriate and overdue; that shifting from petroleum to grid electricity offers a unique and unparalleled opportunity to lower greenhouse gas emissions. We believe that electric vehicles and battery technology are ready for commercialization and that consumers eagerly await plug-in vehicles.

We are pleased to see the EPA return to a

leadership role on the world stage. Please advance the endangerment ruling with all due haste. Thank you.

MR. AWAD: Good morning. My name is name is Ash Awad. I'm Vice President of Energy at McKinstry Company, and on behalf of McKinstry, thank you for the opportunity to testify. And we encourage the EPA to continue on your path, yet we are hopeful that federal legislation leads to a national market-based cap and trade system in the short-term.

McKinstry is a 49-year-old Seattle-based business that designs, builds and operates high performance buildings. We have offices in 12 states. We focus on making buildings more energy and operationally efficient, while improving the physical environment both in and outside buildings. We work with schools, cities, universities, private corporations to dramatically reduce energy, water and solid waste inefficiencies.

We employ 1,500 people that range from engineers, project managers, pipefitters, sheet metal workers, electricians, carpenters, as well as energy analysts, sustainable specialists, renewable energy experts. And we are proud members of the labor, business and environmental communities present here

today. We're also a business that owns our own facilities and has over 400 vehicles on the road. So the idea of EPA more actively managing greenhouse gas emissions has a direct impact on our business also.

However, we are proof that what is good for the environment is good for business. And by any contemporary definition, we are a company that has very successfully transformed into the new energy economy with a very purposeful focus.

Therefore, we fundamentally believe that American industry can withstand placing a market-driven value on the cost of greenhouse gas emissions while also creating an overall positive economic impact, even under today's current economic conditions. We appreciate the conversation and debate that occurs from all sides of this topic. We believe that a paradigm shift from how we view energy costs in America needs to occur. Rather than being paralyzed by the fear of a rising cost of a kilowatt hour, a gallon of gas or a barrel of oil, we need to more readily consider the total cost of energy from production to end use, and how we can cost effectively reduce the overall cost of energy even as energy prices rise.

For instance, worrying about $5 a gallon

gas when we can get to 150-mile-a-gallon vehicles seems a little shortsighted and not the right, best long-term focus in America. And same goes in the built environment. Fifty percent of the energy is wasted from the point of production to the point of use in the built environment, and buildings account for 40 percent of the greenhouse gas emissions.

If we establish the right energy and environmental policies, coupled with the right market price indicators and incentives, we can optimize building energies, maybe even down to net zero energy usage, while creating a return on that investment, improving the value of real property, dramatically reducing greenhouse gas emissions and creating new jobs that will lift the economy.

In closing, we must all transform into leaner greener energy consumers, and placing a market value on carbon will catalyze a new age of efficiency, and renewable solutions that will both dramatically reduce harmful greenhouse gases and propel American innovation and growth for decades to come with only the net positive benefit to the economy. What is good for the economy can truly be what is best for American business. Thank you.

MS. KRUGER: Thank you very much to the

panel for your remarks. I'm going to call the next panel up. Let's see. We have Peter Brehm from Infinia Corporation; Ross Macfarlane, Business Leaders for Climate Progress; Stuart Clark from NACAA, the National Association of Clean Air Agencies; Janice Adair from the Western Climate Initiative; Matthew Kuharic from King County; and Cecilia Bitz from the University of Washington.

MR. BREHM: Good morning. Thank you for your time. My name is Peter Brehm. I'm the Vice President of Business Development and Government Relations for Infinia Corporation. We enthusiastically support the EPA's action. As Ms. Cunningham with Congressman Inslee's office kindly noted earlier, Infinia is based in Kennewick, Washington where we employ about 200 people developing and manufacturing the Infinia solar system, a three-kilowatt modular solar dish starting power system. We are on a mission to help change how the world produces energy by dramatically reducing carbon emissions from energy production, but also from energy equipment manufacturing.

Our sterling engines are made from common automotive industry materials and production processes. They're highly reliable, require no

maintenance, can run at least 25 years, and concentrate solar power for anything from military and space operations to home heating and large scale solar power generation systems.

Infinia solar systems are approximately 50 percent more efficient than PV systems and less expensive when measured on a levelized cost of energy. We believe we can bring consumer prices for solar power from the current low 20 cents a kilowatt hour to 12 to 13 cents per kilowatt hour. The majority of our vendors are tier-one automotive suppliers, and as such, we are effectively the poster child for President Obama's stated goal of converting the now dwindling traditional automotive industry jobs to renewable energy jobs. Infinia is a great example that we don't so much need a new green industry as we need to make existing industry green. By doing so, we can save jobs and safe lives.

Infinia Corporation is Washington State's largest solar power system manufacturer, and we are poised for expansion to selling clean renewable power to the world. Last year we secured millions of dollars in contracts for Spanish solar installations. We are now scaling up to produce 720 megawatts of solar power systems a year for Europe, North America,

and India by the end of 2010, and hope to employ over 800 people by the end of 2010.

Infinia is using American ingenuity to capture these international markets, but beyond building a profitable growing company, Infinia is innovating to actively fight climate change by powering our economy on clean renewable energy. Climate change and our addiction to fossil fuels threaten both our planet and our national energy security. Strong federal policies promoting clean energy and climate can both cut carbon pollution and help launch investment and innovation in companies like Infinia. The rest of the world is trending green, and the U.S. is in danger of falling behind. It is imperative that the world thinks of red, white and blue when it looks for energy innovation.

As an environmentally conscious business that is expanding and hiring new workers in these tough economic times, we encourage the federal government to step up and make a firm commitment to limiting global warming pollutants and adopt policies that make clean renewable power the cheapest and wisest power investment. That is why we support EPA's action to take the first steps to regulate greenhouse gas. The science is clear, and America needs to lead.

We urge Congress to swiftly adopt comprehensive strategies that will encourage investment and innovations in renewable energy and clean technology. EPA's action is a win-win, as already mentioned, to save jobs and to save lives. Thank you for your time and consideration of my remarks.

MR. MACFARLANE: Good morning. My name is Ross Macfarlane, and I'm speaking today on behalf of Business Leaders for Climate solutions. We're testifying in support of EPA's proposed findings that global warming pollution is dangerous for health and welfare. It's past time for all branches of our government to work together to control global warming pollution and restore America's leadership in the race to create clean energy solutions that will define our economic competitiveness in the coming century.

Business Leaders for Climate Solutions is a network of more than 340 businesses, investors, executives, professionals and entrepreneurs here in the four Northwest states who have unified around three core principles. First, climate change is a defining challenge and opportunity of our time. Acting now is affordable and can create huge business opportunities. The risks of delay or failing to act are catastrophic to our economy, to our health and to

our quality of life.

As business leaders, we support strong action at all levels of government to unlock innovation and investment in clean and efficient energy specifically by capping emissions of global warming pollution to science-based levels, and I believe those go hand and hand, and that from leadership comes opportunity. Policy leadership will help us provide profitable solutions that we can sell into global markets, will drive our investment, and will create the framework for sustainable jobs.

Business leaders here in the Northwest know that human-caused global warming is already real and is happening, affecting our economy and environment with rapidly accelerating impacts. Business leaders know that we need to lead the way in finding alternatives to our dependence on fossil fuels. They know that the economic crisis is the best time to invest in a sustainable foundation for prosperity, not to invest in more of the same.

Finally, they know that our economic competitiveness is at stake. We have to lead the way if we're going to regain leadership in the race to create clean and efficient energy. That's why EPA's action is so critical. It ends once and for all the

debate about whether we're going to have global warming pollution or when we should start down that road. The answers are emphatically yes and right now.

So the key question today is how we're going to be addressing it. More than anything, the business community needs certainty to make investment to innovate and create sustainable jobs. So EPA's decision makes it clear we're moving on this path, but like Administrator Jackson, most business leaders look down Pennsylvania Avenue and agree that Congress needs to act to create a comprehensive framework. Luckily, that action is underway today, and while all the members of our group have very different ideas of what are the specific policy details and the priorities that need to be weighed, we stand unified in urging all groups of government to act together to solve this crisis.

MR. CLARK: Good morning. My name is Stu Clark. I'm the co-chair of the National Association of Clean Air Agencies Global Warming Community, and on of behalf of NACAA, thank you for the opportunity to testify on EPA's proposed greenhouse gas endangerment findings under the Clean Air Act. We commend and support EPA today for proposing these findings. They are long overdue. The evidence is overwhelming that

greenhouse gas emissions from human activity cause global warming and that this warming is endangering public health and welfare. In 2007, the International Panel on Climate Change concluded that the evidence that global warming is also affecting our planet is, quote, unequivocal.

EPA catalogs much of these data in its technical support documents. I won't repeat them here, but I will note that EPA's scientific information comes from reports of the Nobel prize-winning IPCC, which consists of thousands of scientists from around the word and reports generated by the U.S. Climate Change Science Program.

We agree with EPA that greenhouse gases endanger both public health and welfare. While greenhouse gases at current atmospheric level don't directly affect public health, they do affect health indirectly. The impacts of global warming include more frequent heat waves, hotter days and nights, increases in regional ozone pollution, and an increase in the spread of both food and waterborne pathogens. All of these changes induced by global warming cause health effects from potentially mild to very severe, including death. In fact, in the IPCC synthesis report, health effects are specifically mentioned as

one of the impacts of global warming. We couldn't say it better than EPA did in its proposal when I quote, "Mortality and morbidity that result from the effects of climate change are clearly public health problems."

In our comments on EPA's Advanced Notice of Proposed Rulemaking on regulating greenhouse gases under the Clean Air Act, and in our subsequent recommendations to the new administration, we called on EPA to propose the endangerment finding and to do so based on scientific considerations alone. Consideration of the policy implications of the findings, such as how the Agency might subsequently regulate greenhouse gases under the Act, is wholly inappropriate and must not be a factor in this decision-making process.

We are very pleased that EPA fulfilled its obligation to base its finding solely on the scientific evidence and accordingly arrived at the only plausible conclusion, that greenhouse gas emissions endanger public health and welfare.

Also on our comments on the ANPR, we explained how once an endangerment finding is made, regulation of greenhouse gases under the act is, in fact, quite manageable. We are concerned the other commenters have used extreme exaggeration to describe

the consequences of a positive endangerment finding, claiming it will wreak havoc. We disagree strongly. Instead, a positive endangerment finding places a duty on the Agency to next issue a proposal for regulating greenhouse gases for motor vehicles and provide the public an opportunity to comment on that proposal.

We are confident that before EPA finalizes any regulation controlling greenhouse gases, it will chart a common sense pathway for doing so under the act. Once again, NACAA is pleased to be in full support of EPA's proposal, and thank you for the opportunity to testify.

MS. ADAIR: Good morning. My name is Janice Adair. I'm here today representing the Western Climate Initiative, the collaboration of seven states and four Canadian provinces that have been spending the last two years designing the most comprehensive regional cap and trade program in the United States.

The WCI strongly supports EPA's proposed endangerment finding. We have already been experiencing changes to our climate in our states and provinces. And based on the studies that have been done, we in turn had studies done that could take that science and make it real, and so that we could explain to our citizens, and now to you, what some of this

means for our states.

The Pacific Coast fishery has declined as stream temperatures have increased and water levels decreased. Reduced salmon populations are projected to cost Oregon 632 million dollars per year by 2020. As the snow pack continues to decline, Montana is facing a reduction in its glaciers. Currently, Glacier National Park has approximately 50 glaciers, approximately one third of the number of glaciers it had in 1850. If business as usual continues, Glacier National Park could be glacier-free by 2030. In Washington, the change in climate will cost our citizens 75 million dollars per year in lost recreational opportunities by 2020.

Fires are becoming more frequent. By 2020, increased wild land fires are projected to cost New Mexico an estimated 519 million dollars per year. By 2040, the area burned by forest fires in Washington is projected to double from current levels. Property damage in California could cost between 200 million and 2.5 billion dollars per year by 2050.

Coastal and storm damage are also on the rise. In Washington, costs associated with these events are anticipated to be 72 million dollars per year by 2020. In the San Francisco region alone in

California, 100 billion dollars worth of property and 475,000 people are vulnerable to inundation from sea level rise and storm damage by the end of the century.

Public health challenges are also increasing. In 2006 California experienced a two-week heat wave. More than 140 deaths were directly attributable to heat exposure, and the unprecedented nighttime temperatures that occurred during that heat wave.

States and provinces also support the proposed finding that emissions from new motor vehicles and engines contribute to the mix of greenhouse gases in the atmosphere. California was the first state in 2002 to establish binding limits on greenhouse gas emissions from tailpipe standards -- from tailpipes. Since then 13 other states, including all of the WCI states, have either adopted or committed to adopt these standards, and we are pleased that President Obama will adopt similar standards for the entire country.

The Clean Air Act requires that EPA protect human health and the environment. Reducing greenhouse gas emissions will also help our economy recover and grow in sustainable ways. We urge EPA to finalize this proposal without delay, and all of the states in

the WCI stand ready to partner with you.

MR. KUHARIC: Good morning. My name is Matt Kuharic, and I'm here today on behalf of King County's Department of Natural Resources and Parks to express its support of the EPA's proposed finding that human-caused greenhouse gas emissions threaten public health and the welfare of current and future generations.

The world's best scientists, both globally through the United Nations and locally through the University of Washington, have unequivocally demonstrated that our climate is changing. It is very likely human-caused, and that to avoid the most adverse impacts of human-caused climate change, we must recognize the problem and act expeditiously to address it. The EPA's finding is an important step that shows the federal government recognizes that the scientific debate about climate change is over and that action is in our citizen's best interests.

While climate change is a global problem, its impacts are profoundly local. As one example, in King County, where we have large areas of low elevation mountains, we are particularly susceptible to slight temperature increases that are leading to dramatic changes in mountain snow pack. The

University of Washington Climate Impacts Group recently modeled that under medium global greenhouse gas emissions scenario, the region can expect a 40 percent reduction in spring snow pack by the 2040s. Decreased snow pack will mean less snow melt for summertime hydro power, less water for migrating salmon and increased wildfire risks.

Under this business-as-usual scenario, the impacts to consumers are economic and natural resources and our quality of life would be significant. The UW group also projects that climate change will bring the region more intense flooding, sea level rise, ocean acidification, and threats to agriculture, forests, biodiversity and other critical sectors of our economic and natural systems.

King County is working hard to prepare for these impacts, but the scale of the problem is daunting. The EPA's recognition that human-caused greenhouse gas emissions are a real problem is a key step towards a global solution in support of the work the county has been leading for more than 15 years.

My colleague from the county executive's office, Elizabeth Willmott, has outlined key areas where King County is addressing the climate challenge. We look to the EPA and the federal government for

renewed support for these efforts. Thank you.

MS. BITZ: My name is Cecilia Bitz, and I'm a professor of atmospheric sciences at University of Washington. My expertise is in ice and climate interactions, and I am a contributing author to the IPCC in both 2001 and 2007.

Earth's ice cover is changing before our eyes. Arctic sea ice has changed by more than 30 percent in reduction over the last 50 years, and it is leaving the sea ice highly vulnerable to further increases in greenhouse gas levels. The sea ice record minimum extent in 2007 shot the old record by over 20 percent, and that record was set in just 2005. The thinner and younger sea ice cover is fragile now, and it will continue to have large fluctuations and steep overall decline.

Greenland ice has melted at higher elevations in recent years, and several of its outlet glaciers have retreated rapidly. Runoff from Greenland raises sea level and alters ocean circulation. Ecosystems that are adapted to take advantage of the cold for survival are in jeopardy as aggressive species that are adapted to warmer environment invade.

Recent change is just a microcosm of the

future unless we act now. Otherwise, the rate of warming this century could be two to four times that of the last century. Glaciers and snow melt during the warm and dry seasons provide the main fresh water supply to more than one billion people. Reduced snow and accumulation and glacier retreat will cause increased hardship to the developing world where human populations are expected to continue to grow this century.

My research shows that Arctic sea ice and glaciers will recover if we reduce emissions. We must act quickly, though, before changes in Greenland and Antarctica ice sheets are irreversible. If we do nothing, our children and grandchildren will inherit a planet that is unrecognizable from our view today.

The EPA should declare human sources of carbon dioxide and other greenhouse gases a danger to humankind. The U.S. enjoyed great economic success by greedily consuming fossil fuels, and now we must accept our responsibility to reduce emissions. Climate change deniers, few of whom are actual scientists who study climate, have confused many with their alluring but false arguments. Environmental scientists overwhelmingly recognize the dangers before us. We need leadership now to make legislation so we

do not leave a devastated environment with worldwide food and clean water shortages and species lost to future generations.

MS. KRUGER: Thank you very much for those remarks, and thank you to the panel. I would like to make a quick announcement for speakers today. If you have a written copy of your testimony, and you're able to drop it off either at the registration or with the reporter, the recorder of this hearing, it would be helpful just to make sure it's accurate.

This has been a wonderful first set of panelists. We're off to a great start this morning. What we're going to do now is take a 15-minute break. So we'll be back in just a few minutes and start up again. Thank you so much, everybody.

(Recess.)

MS. KRUGER: If we can go ahead and take our seats, we will get started with the second group of panels. What I would like to do now, with our first panel after the break, is to ask Peter Goldmark from the Washington State Department of National Resources and Jay Manning from the Department of Ecology -- is Jay here now? So Mr. Goldmark.

MR. GOLDMARK: Good morning. My name is Peter Goldmark, the commissioner of public lands here

in the State of Washington. It is my responsibility and distinct privilege to direct the Department of Natural Resources. I want to welcome you here to Washington and thank you for this opportunity to comment on your April 2009 finding that greenhouse gases contribute to air pollution and pose a threat to public health. I have reviewed the body of science and I strongly support this finding.

I want to thank President Obama, his administration, and the Environmental Protection Agency for acknowledging the undeniable and mounting body of scientific evidence that human-caused greenhouse gas emissions are responsible for climate change. Decision makers can no longer deny the scientific facts that greenhouse gas emissions are having negative impacts on everyday lives of fellow citizens across the globe.

The only way to tackle this global problem is through strong leadership. I encourage the EPA and President Obama to proceed expeditiously in implementing policies and actions consistent with these findings. It is critical that we base our public policies on sound science and in the public's interest. We must also make policy decisions that will sustain our environment, economy and way of life

for generations to come.

My agency manages over 2.2 million acres of state forests. DNR is also responsible for fighting fires on more than 12 million acres of state and private forested lands. We also coordinate closely with the U.S. Forest Service in fighting fires on millions of acres more of forests in federal ownership.

In March of this year, the University of Washington's Climate Change Impacts Assessment concluded, and I quote: Due to increased summer temperature and decreased summer precipitation, the area burned by fire regionally is projected to double by the 2040s and triple by the 2080s. The probability that more than 2 million acres will burn in a given year is projected to increased from that current rate of -- that probability of 5 percent today to 33 percent by the 80s.

Primarily east of the Cascades, mountain pine beetles will likely reach higher elevations, and pine trees will likely be more vulnerable to attack by beetles and fire. These wildfire projections are indeed alarming. Let me emphasize, there is a 33 percent chance that we will see 2 million acres burn in one year by the '80s. This is about 5 percent of

the entire state. We've all watched these fires firsthand or on TV, and we know they threaten the health and safety of all citizens. Forested lands provide clean water, wildlife habitat, and recreational opportunities for our citizens. In addition, they sequester the very carbon emissions that are causing climate change. We must do everything we can to protect the health of our forests, for the health of the planet, and our children and the grandchildren that will inherit the planet. Thank you very much.

MS. KRUGER: Thank you very much. So I would like to call up our first panel. Mark Heckert, Dan Ritzman from the Sierra Club. Paula Del Giudice -- I'm sorry for mispronouncing that -- from the Puget Sound Pollution Resource Center. Mark Quinn from Washington Wildlife Federation. Gifford Pinchot, the third, from the Bainbridge Graduate Institute, and Catherine Karr from the American Academy of Pediatrics.

MR. HECKERT: Good morning. I'm Mark Heckert. I'm from Puyallup, Washington. I'm a professional wildlife biologist. I own my own consulting firm in south Puget Sound. I'm also a board member of the National Wildlife Federation and

the Washington Wildlife Federation. I'm a wildlife biologist and a naturalist, and I've spent my life trying to understand and assist in the enhancement and preservation of resources in our area.

I'm not going to spend my three minutes berating you on what's happened over the last eight years or reciting all the possible impacts from climate change, but I've come here because I realize that the work of my life, my hopes for the future of my family, my community, my country and the world can be undone by climate change. And I support and commend the EPA for taking the steps and stepping up to protect the health of our communities and the world by the finding that CO_2 and other gases pose a threat.

I would like to remind you that ordinary people of this country look to the EPA to provide the empirical scientific information, as well as leadership, in complicated environmental issues. The bad thing about leaders is you have to lead. The good thing about leadership is you get to. For too long the EPA has remained on the sidelines of this issue causing confusion among those who seek to honestly understand the issue and arming those who deny its occurrence. With the adoption of the finding, the EPA will institute action at every level of the

government, and start the process of finding and implementing solutions. With adoption we can move from debate to action and start figuring out ways to have it slow and stop climate change.

I remember all too well growing up under the threat of atomic destruction and hiding under my desk, and to me I can see in my children's eyes this same kind of trepidation starting to occur. If the government doesn't take these actions and start to reverse these impacts it will become inevitable. We don't want that. I need you, my family and my community and my country needs you, to take leadership on this. Thank you very much.

MR. RITZMAN: Good morning. My name is Dan Ritzman, and I'm the western director of the Sierra Club's Beyond Coal Campaign. So the science tells us that to avoid disastrous climate change we must act immediately to reduce our emissions of carbon dioxide and other greenhouse gases, and we strongly support and applaud the Environmental Protection Agency for listening to and respecting the science and taking action by moving forward on this endangerment finding for CO_2.

Not only do I have a professional reason for coming before you to testify today, but I also

have a really personal reason. I care deeply about a part of the world that's feeling the impacts of climate change more severely and more quickly than any other part of the planet, and that's the Arctic.

Over the past two decades I've traveled to America's Arctic over 30 times, and I've become enamored with the special places and the incredible people that I've had the chance to spend some time with. And over that time I've seen changes with my own eyes, including dramatic changes in the sea ice, loss of permafrost and coastline, and changes in animal migration, but it's when I listen to the people who live in the Arctic talk about the changes they've seen when I become very alarmed. I've been part of numerous campaigns to protect the Arctic special places, but I've come to realize that unless we move to address climate change, we will have protected all of these amazing places for naught. The Arctic is fundamentally changing.

The effects of climate change are not just threats to faraway places. Climate change is a threat to Pacific Northwest as well. You've heard from numerous people tell you this already. Science shows that we will see negative impacts on our forest, our salmon, our coastline, snow pack in our mountains.

And these are some of the resources that drive our economies and the quality of life, and we can't stand idly by while they're threatened by climate change.

Determining that carbon dioxide and other global warming pollution endangers public health and welfare, as EPA has now done, is a bold and necessary first step towards tackling climate change. The scientific evidence for this decision is produced by decades of research by thousands of scientists from across the U.S. and all around the world. It's overwhelming and it's extremely compelling.

The EPA's proposed findings make the case for action by demonstrating that climate change threatens, quote, virtually every facet of the living world around us, unquote, and that the effects include again, quote, sickness and death.

While coal plants are one of the major sources of global warming pollution, it's clear that emissions from motor vehicles contribute to the issue as well. The dinosaur fossil fuel companies will do anything to preserve the status quo. With our continued addiction to last century's fuel as dirty coal and oil will come massive devastation of fish, farms, forest and public health. According to the Washington State Department of Ecology, the effects of

climate change will cost Washington communities 3.8 billion a year by 2020. The cost of inaction will be a burden on our children and our grandchildren. We must do better and the good news is that we can.

Energy efficiency and renewable energy can replace dirty coal and provide sustainable jobs. Energy efficiency is the cheapest way to encourage more jobs than any other option. We can make the right investments to clean our air and water, keep communities whole, and help reduce the impacts of greenhouse gas pollution. We must begin now to embrace the technologies of the 21st century and leave fossil fuel where it belongs, deep underground with the rest of the dinosaurs.

The Sierra Club applauds the EPA for using its authority under the Clean Air Act to take action to protect us from the pollution that causes global warming, and we urge you to move rapidly in finalizing these determinations. Thanks.

MS. DEL GIUDICE: Good morning. I'm Paula Del Giudice, and I'm the executive director of the Pacific Northwest Pollution Prevention Resource Center here in Region 10. And on behalf of the organization's staff, board of directors and our supporters, I'm grateful that you chose to hold one of

the two public hearings on the EPA's proposed endangerment findings here in Seattle.

I would like to applaud and thank the EPA for its leadership on this critical issue at this juncture in time. Truly the stars have aligned. The science, the political will and the support of the American public are all squarely supportive of reducing greenhouse gas pollution for the health of the planet and all of its inhabitants. The imperative becomes more and more clear. Recent modeling out of MIT Center for Global Change Science provides new projections whereby surface warming is predicted to rise to a higher range than was predicted just a few years ago.

There are many reasons for this, but one thing is exceedingly evident. Scientists predict that without action there is significantly more risk than was previously estimated. This increases the urgency for immediate action. If the EPA fails to take the lead on reducing greenhouse gas pollution, it will be an abrogation of the Agency's mission and its responsibilities.

Looking forward with this endangerment determination behind us and ground breaking legislation and Congress on its way, we can get beyond

the fight about whether or not global climate change is being exacerbated by anthropogenic causes and begin to do something about what is clearly obvious. I'm confident the ingenuity and creativity of the American public to solve a problem it helped create will come to the forefront in exciting new ways.

The organization I represent works with businesses to reduce pollution at its source, including greenhouse gas pollution. The business community is stepping up to take the lead when it comes to innovations, commitment to energy efficiency, and the significant reduction of greenhouse gas emissions. While many exciting advancements are being made now in manufacturing and other sectors, businesses need the certainty of pending regulation and legislation to really move forward.

Just this week Dupont's chair, Chad Holliday, told the U.S. Senate Environment and Public Works Committee that properly designed climate change legislation will provide U.S. companies with the certainty they need to innovate, creating new market opportunities and jobs for American workers. He said, quote: Environmentally effective and economically sustainable climate legislation will encourage markets to turn increasingly to greater energy efficiency, low

carbon energy forms and bio-based products, accelerating development and deployment of technologies that will be critical for a low carbon economy. Federal legislation will help create the marketplace that will drive innovation, economic growth and environmental progress, end quote.

It's not just leaders of large businesses who support federal action to reduce greenhouse gas pollution. Thousands of small businesses, even low emitters, throughout the country are making changes in the way they do business as a result of the huge progress made and the understanding of the toll that climate change is having on the Earth.

Assisting businesses to make this transition to a low carbon future is an important role that the EPA can and should take as regulations become adopted. Reducing greenhouse gas pollution is clearly the EPA's issue. I thank you for taking the lead, and I am looking forward to working with you to help move our economy away from fossil fuels to one that is sustainable for our children and theirs. Thank you.

MR. QUINN: Good morning. My name is Mark Quinn. I've been a wildlife biologist and manager for over 30 years, and I'm here on behalf of the Washington Wildlife Federation, the state affiliate

for the National Wildlife Federation. I've been involved in hundreds of environmental issues throughout my career, but I've never felt more compelled to be involved in one than I am today. I believe that human-caused climate change will be an overwhelming calamity for civilization if we don't immediately begin reducing greenhouse gas emissions.

As I've come to learn more about energy and climate change, I've been struck by the convergence of so much knowledge and so much opportunity and, likewise, disappointed that we have been unable to clearly see the path that lies in front of us. When Apollo 8, the first space mission to leave Earth orbit, was on its return trip from the moon in 1968, the first two manmade features the astronauts could make out on Earth were the Great Wall of China and the emissions plume from the Arizona public utilities 2,000 megawatt coal-fired power plant.

Now more than 40 years later and with the benefit of volumes of scientific analysis and international consensus, we know that carbon dioxide and other greenhouse gases in those plumes and from other sources pose a serious threat to the future of the planet. Though the debate is over, the science sound and compelling, and people are in consensus

about the need for action, many corporations will try to convince you otherwise or suggest it's someone else's responsibility. They will say that CO_2 emissions and the climate change that result are not a threat and that regulating CO_2 emissions will have a disastrous consequence for their shareholders, America's commerce and our livelihood. This is not true and most Americans know it.

In his national best seller, The Ecology of Commerce, Paul Hawken states, "The 100 larger corporations have more economic power than 80 percent of the rest of the word." Please don't let that power and influence trump human health and welfare and the future of this planet. There's tremendous inertia in business as usual. And corporations will, as they always have, argue and lobby convincingly against additional environmental regulations, although maybe not today.

I ask you to remember the purpose of a corporation is to make a profit, cut costs wherever possible, and continue to grow. Theirs is a value system too often based on money and profits rather than human health and welfare or the environment. The role of government is to provide checks and balances on the corporation's clear but limited perspective on

generating short-term profit come hell or high CO_2. Government's role has never been so clear or more important than providing a balanced, long-term perspective and leadership, as the recent financial collapse demonstrates.

I sincerely urge you to let science and the American public guide your determination that global warming caused by our greenhouse gas emissions is a serious threat to public health and welfare. I have four young grandchildren. When they're old enough to understand, I don't want to have to explain to them how we wrecked the planet. I don't want to keep worrying about their future. I would rather tell them the story about how, during a watershed moment in 2009, we finally figured it out and decided to build a new renewable, clean energy economy. Thank you.

MS. KARR: Good morning. I appreciate this opportunity today to speak on the impact of climate change on child health. My name is Dr. Catherine Karr, and I'm a general pediatrician and a children's environmental health researcher at the University of Washington. I'm also a member of the American Academy of Pediatrics Committee on Environmental Health. This is a nonprofit professional organization of 60,000 primary care pediatricians, pediatric medical

subspecialists, and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents and young adults.

As the climate changes environmental hazards will change and often increase. Children are likely to suffer disproportionately from these changes. Anticipated health threats include extreme weather events and weather disasters, increases in infectious diseases and air pollution. Within all of these categories, children have increased vulnerability compared to other groups.

The health consequences associated with extreme weather events can include death, injury, infectious diseases and posttraumatic mental health and behavior problems. Experiences with hurricanes Katrina and Rita demonstrated the difficulty with tracking children's whereabouts and keeping children and caregivers together, and the special needs of hospitalized infants and children during and after major natural disasters.

Vector-borne infections are affected by climate change. Both the hosts, such as rodents, insects and snails, and the pathogens, such as bacteria, viruses and parasites, are sensitive to climatic variables, such as temperature, humidity and

rainfall. For example, malaria is a climate-sensitive vector-borne illness to which children are particularly vulnerable. Because they lack specific immunity, children experience disproportionately high levels of both sickness and death from malaria. Climate change is expanding the range of mosquitos to higher altitudes and latitudes, and warmer temperatures speed the development of the parasite within the mosquito.

Small children will be the most affected by the expansion of malaria zones and the success or failure of societal responses to this change. Children are especially vulnerable to both short-term illness and long-term damage from ambient air pollution. This is an area I know well as a researcher conducting studies in both one of the worst air quality regions of our country, the LA basin of Southern California, and my own backyard here in the Puget Sound in the Georgia air basin of the great Pacific Northwest.

Children's lungs are developing and growing. They breathe faster than adults, and they spend more time outdoors engaging in vigorous physical activity. Children who are active in outdoor sports, the community's high ozone, are at increased risk of

developing asthma. Rates of premature birth, low birth weight and infant mortality are increased in communities with high level of particulate air pollution.

Some investigators argue that the global increase in childhood asthma can be explained partly by increased exposure to allergens in the air driven by climate change. For all organisms, there's a range of ideal temperatures above and below which sickness and death occurs. Humans are no exceptions. As temperatures increase, the frequencies of heat waves increase, children will spend more time outdoors, often splaying sports in the heat of the afternoon, which places them at risk of heat stroke and heat exhaustion.

In addition to its recommendations to pediatricians for reducing their energy demands and incorporating sustainable practices in their personal professional lives, the AAP calls upon government at all levels, from the smallest municipalities to the national and international levels, to implement aggressive policies to halt contributions to climate change caused by humans and to mitigate their impact on child health.

We applaud the EPA for taking affirmative

steps toward finding that greenhouse gases endanger public health and welfare and for moving forward toward regulating these gases under the Clean Air Act. In order for you to have full access to information on this topic, I would like to ask that the American Academy of Pediatric's policy statement and technical report both entitled "Global Climate Change and Children's Health" be included in the hearing record.

We commend you for holding this hearing today to call attention to the potential impacts of global climate change on children's health. We look forward to working with Congress to prevent the adverse impacts to child health caused by global climate change and to plan for those who may be unavailable to avert. Thank you.

MS. KRUGER: Thank you. Mr. Pinchot, before you begin, I would like to just make a request. There's sort of a dull hum of conversation that's making it hard to hear up here, and if I'm having a hard time hearing, I can only imagine that it's very hard for folks in the back. So if you can sort of take the conversations outside, that would be really helpful.

MR. PINCHOT: Thank you for listening so intently. This can't be the most fun part of your

jobs, and I really appreciate the way in which you're really paying full attention to what everybody is saying. I'm Gifford Pinchot, president of the Bainbridge Graduate Institute, a local sustainable business school, and the grandson of the first chief of the Forest Service.

Climate change and greenhouse gases are a threat to our health, our forests, our ecosystems, our businesses and, quite generally, human welfare. I guess you know all that. Having listened to earlier testimony, you know many of the ways in which climate change threatens our well-being; for example, tropical diseases are moving north. And the EPA can prevent their spread in part by what you do in the United States to prevent global warming, and in part by our example to the rest of the world.

Our forests are drying out. They're dying, fires are taking place. You can help to prevent that as well. Our livelihoods and businesses are in trouble. Our water supply is in trouble. Climate change, if it continues, will kill hundreds of millions of people, many of them in the United States. And you can help to prevent that. The EPA can help to protect us from the most dangerous pollutant humanity has ever faced. It's your moment of greatness, your

moment in which you have an opportunity to do more than the EPA has ever done before, and I hope that you seize it fully. Businesses, of course, can act. We can do a lot without your help, but the degree to which you level the playing field by keeping the worse polluters from doing so, you even the costs so that the businesses which really care can do something to reduce climate change.

We all hope for a legislative solution which releases market forces, but the EPA has a very critical role to play as well. I, and the Bainbridge Graduate Institute, and many of the businesses, support the role of the EPA in curbing greenhouse gases and protecting us and our livelihoods. Thank you very much.

MS. KRUGER: Thank you. And thank you to the panel. I would now like to invite Jay Manning, the head of the Washington Department of Ecology, and Mary Selecky, the secretary of the Washington State Department of Health, to join us and offer comment.

MR. MANNING: Thank you very much for the opportunity to be here today and to provide testimony on behalf of the Washington State Department of Ecology. I'm particularly pleased the Washington native is here from the other Washington to listen to

all of this testimony. And I feel like I will be repeating a lot of what you have heard here, so I'm not going to do that. I will focus in on just one environmental impact of climate change that I think speaks to people in this room, speaks to you at EPA. And before I begin, I want to say thank you to the new EPA, to the Obama Administration for the quick start out of the blocks on climate change, and I know that you as individuals have been doing this behind the scenes for a lot of years, and under tough circumstances, and that is deeply appreciated.

But let's just talk about lack of snow pack. You've heard several times that the Climate Impacts Group at the University of Washington recently found that we've already lost 20 percent of the snow pack here in Washington, and the projections are incredibly dire. By 2050 we could lose as much as 50 to 60 percent of the snow pack. And so thinking about that impact alone, and would that amount to endangerment, from almost any perspective the answer is an emphatic yes.

If you care about agriculture, about irrigated agriculture, the loss of snow pack -- the snow pack acts as a reservoir, and it delivers water, a huge reservoir. It delivers water to streams at

critical times in the late summer, early fall, when a farmer needs water the most. If that reservoir disappears, the irrigated agriculture, which is a huge part of the economy in this state, the impacts would be incredibly significant and incredibly negative.

If you're a city dweller, you're not a farmer, you don't care about irrigation except that you happen to eat food that comes from those farms, but what you really care about is when you go into your kitchen and turn on the tap, the water comes out and it's cool and clean and safe, and there's plenty of it. Well, that same snow pack is an incredibly important source of supply for municipal water suppliers across the state, and to private wells and private water delivery systems across the state. So if you lose that much snow pack, the impact on water availability for people is an endangerment without a doubt.

If you don't care about those two things, but you're a major industrial facility that uses a lot of water throughout the year, just like those other users of water, that water disappears or becomes less reliable. The economic impact is incredibly significant.

But let's say you don't care about any of

that, and you are the most ardent of environmentalists, and what you really care about is the aesthetic, the cultural, the societal, the human values in flowing streams, or you care about the fish and the other bio -- the other critters that depend on that healthy stream flow, especially in the late summer, to make it through the year. Here in the Northwest, salmon, an iconic species for us. If there is a species that sort of represents us here, it's the various species of salmon and steelhead that are dependent, come back, many of them, in those critical low months. So if that's what you care about, those species will be adversely impacted. Stream flows could go from low to dry, bone dry, in July, August and September. That's an endangerment.

So just looking at one impact of climate change here in the Northwest, you know, I said to somebody earlier, whether or not climate change creates endangerment here in Washington or in the United States or in the globe is really a no-brainer. The hard part is what do you do once you make that finding. Where do you go from there. And that is not what you're here to answer today. You're here to listen to us give you feedback on the endangerment question, and I would submit to you that it is a clear

answer, an emphatic answer, and that answer is yes. Thank you very much.

MS. SELECKY: Good morning. I'm Mary Selecky, and I actually live in Eastern Washington, so welcome back. In this job as Secretary of Health for the Washington State Department of Health, and the fact that I have homes in both Eastern and Western Washington, I clearly in my 35 years -- and that's an anniversary today -- of living here after moving from Pennsylvania, see much change that's happened in our state. But my stewardship responsibility as Secretary of Health is to improve and protect the health of the people in Washington State.

We're here clearly to support the EPA proposed finding that greenhouse gases contribute to air pollution that may endanger public health. And I want to highlight just a few of those. Heat-related deaths, illness due to air quality, infectious disease and health effects of extreme weather.

Heat-related deaths. We believe the number of heat-related deaths will grow as heat waves become more common and more intense. Because I do have the advantage of both Eastern and Western Washington, because for the last 10 years I have made that trek home to Colville and here in Western Washington, I

have experienced the change just in these 10 years. What we know happens with heat is that it's one of the leading causes of weather-related deaths in the United States. 400 to 700 deaths a year. We don't need more, we need less. We must address the issue. Children, elderly, chronically ill and the poor will be most at risk from the health effects of heat.

Poor air quality. Climate change will cause longer wildfire seasons. I expect you've heard that already from our Commissioner of Public Lands we have seen a fourfold increase in wildfires. Warmer, drier weather will also result in increases in ground level ozone, airborne dust and longer pollen seasons. This will lead to more respiratory and cardiovascular problems, particularly affecting children and adults, and you've already heard from a physician about that. These are already significant health issues in the Northwest.

Infectious disease. Climate change is likely to increase the effect of infectious diseases. Changes in weather will change the habitat and life cycle of bugs. Bugs spread disease, and disease is carried by mosquitos and ticks. And we in Washington State have yet to experience a West Nile virus death. We're one of two states in the continental 48. Must

be the invisible shield or the protections people do. But the virus is here. It's very clearly here. We're pleased that there haven't been any deaths, but this is a phenomenon that we will have continue to increase. Zoonotic disease, like West Nile virus and hantavirus, are likely to increase.

Extreme weather events and rising sea levels cause psychological and social disruption. We've experienced two one-in-100 year floods within 13 months. While we had a natural disaster, while there are many impacts on the environment, the impact on people's health as a result of that continues today. Earlier spring runoff, rain on snow cause floods that will lead to physical harm from high water, landslides, falling debris and health risks from contaminated water spreading toxic and infectious agents via flood waters.

We're calling for action in three areas. Reduce greenhouse emissions to slow and reverse climate change. We must reinvest in our public health system so that we may be able to reduce the health effects. The work we're doing here in Washington State working on mitigation from a health angle, not just an environment angle, is absolutely essential, but it takes a public health system to do that in

combination with our colleagues at Ecology.

We must consider the impacts on the poor and disenfranchised as we look for ways to respond to climate change. So we at the Department of Health support the work that's being done by EPA. We urge action now to protect the health and well-being of the people in our communities. Thank you very much.

MS. KRUGER: Thank you. Thank you very much. I'm going to invite the next panel to come up and speak. Let's see. Leeanne Beres from Earth Ministry. Rabbi Zari Weiss from Jewish Climate Challenge. Bishop Chris Boerger from the Northwest Washington Synod of Evangelical Lutheran Church of America, and KC Golden from Climate Solutions.

Actually, if I could make a couple of requests. Before we begin, I'm keenly aware of the time, and I want to make sure that everyone who is registered to speak today is going to get to speak today, but if you could hold your applause until the end of a panel rather than in the middle, then we'll be able to keep things moving even faster.

MS. BERES: My name is Leeanne Beres, and I want to thank you for the opportunity to testify on behalf of Earth Ministry and Washington Interfaith Power and Light.

Earth Ministry was founded 20 years ago and was one of the very first organizations in the entire country to link religious faith and care for the environment. At that point we truly were the lone voice in the wilderness calling for protection of God's good earth from a religious perspective. The good news is that in 20 years a lot has changed. Now every major faith tradition and religious denomination has a statement about caring for creation, and there's a growing consensus among religious leaders that climate change is the most important moral issue of our time.

I'm also representing Washington Interfaith Power and Light, which is part of the national Interfaith Power and Light network active in 29 states and in over 10,000 congregations nationwide. Interfaith Power and Light organizes a religious response to climate change, and I know you heard from some of our clergy at the hearing in Arlington on Monday.

On behalf of this broad ecumenical and interfaith constituency, I'm here to support the EPA's finding that carbon dioxide and other greenhouse gas emissions are a danger to public health and to support regulation of these emissions under the Clean Air Act.

The science on climate change is indisputable. Global warming is real, it's happening, and it's being caused by humans. But the science alone won't save us. We have to have the courage and the will to act. Science can give us the information we need to act, but faith gives us the reason. Values are one of the gifts that people of faith bring to the conversation about climate change. Our work is grounded in the principles of stewardship, responsibility to future generations, sustainability and justice. Your endangerment finding on greenhouse gas emissions is supported by these values.

Regulating carbon dioxide and other pollutants will protect human health, especially in more vulnerable populations. Your bold action will protect people living in poverty here in the United States and around the world from the worst impacts of climate change, including drought and famine. And your efforts will protect all of God's creation and the 20 to 30 percent of plant and animal species at risk of extinction due to global warming.

If we allow human-caused environmental disasters like climate change to destroy ecosystems and cause harm to our human brothers and sisters, we have truly failed to love our neighbors as ourselves.

All across the country, religious communities and people of faith are doing our part to meet the challenge of climate change.

The Episcopal church has the Genesis covenant which seeks to reduce greenhouse gas emissions in all church-owned buildings by 50 percent within 10 years. Interfaith Power and Light has a Cool Congregations carbon footprint calculator that's in use in houses of worship from coast to coast. And you'll hear more about the Jewish Climate Challenge and the climate activities of the Lutheran church from the next two testifiers.

The bottom line is that we in the religious community are doing our part on global warming. We look to the federal government to do its part as well, and applaud the EPA for recognizing the importance of regulating greenhouse gases to protect human health and the environment, and we thank you for your leadership on this important issue.

RABBI WEISS: Shalom. My name is Rabbi Zari Weiss, and I'm here as a representative of the Jewish community. A number of us have been working on a project called the Jewish Climate Challenge affirming our covenantal responsibility to the Earth, a project in which we're challenging members of the

Jewish and, hopefully, other communities to reduce our carbon footprint by at least 2 percent in this next and subsequent years.

Like many of us, we know that our actions have an impact on the environment. And we also believe, as the EPA recently acknowledged, that carbon dioxide and other greenhouse gases are a danger to public health and welfare. We believe that as individuals we can do what we can to reduce our impact, but we also know that we need the leadership of government and agencies such as the EPA. So we're so pleased that the EPA has published its findings, and we want to go on record in support of regulation of these pollutants under the Clean Air Act.

In our work we're guided by the wise teachings of Jewish tradition which guide us to recognize that we, all human beings, have a sacred responsibility to help care for this precious world in which we live. There's a beautiful Midrash, or a story, that says that when the holy one, when God first created the world, God led Adam, the first human being, around the garden of Eden. And God said, see my works, how beautiful and praiseworthy they are. Everything I've created has been created for your sake. Think of this and do not corrupt or destroy my

world. For if you corrupt it, there will be no one after you to set it right.

When I think of this Midrash, I am just so amazed because it was written 1,300 years ago, at least 1,300 years ago, well before the modern industrial age. Our ancestors understood the profound truth and the profound responsibility that humans have to care for this creation, and all of the parts of creation with which we've been entrusted. And even before that, well before that, 2,000 years ago or more than that, they outlined legislation which prevented people from harming animals or from needlessly wasting the earth's precious resources.

I wondered what they would do or what they would have to say to us today about the way that our actions have impacted upon the natural habitats of the earth's fish and mammals and birds, causing many species to become extinct or to be threatened with extinction, or the ways that our society wastes our natural resources by cutting down trees, even whole forests, for things that will be used perhaps for an hour and then disposed of.

Our ancestors weren't just concerned about the fish and the animals, but they were concerned about human beings, too, and they passed all kinds of

legislation that made sure that there were -- that tanneries or things that would cause -- that would jeopardize human beings' health would be placed far outside of town.

So in so many ways we think that we've evolved, but I think that our ancestors were so wise. They lived their lives guided by an ethic that said that we're all responsible for one another and the earth.

And there's just one last teaching that I would like to share with you. It's from the Torah, our sacred scriptures, that says, I call heaven and earth to witness this day against you that I have set before you life and death, blessing and curse. Therefore, choose life that both you and your descendants may live.

I pray that in this critical time of change brought about by the warming of our planet that we will let the wisdom of all of our religious traditions guide us, and that we will make the proper choices in our regulations so that we and our descendants may live. Thank you.

MR. BOERGER: My name is Chris Boerger. I'm the bishop of the Northwest Washington Synod of the Evangelical Lutheran Church in America. I thank

you for this opportunity to address you, and also want to speak in favor and support of the finding that you have made, and encourage you to see this as a first step in what is going to be a long road and a critical process for us to take care of the creation we have been given.

In 1993, the denomination of which I am a member, the Evangelican Lutheran church in America, passed a social statement entitled "Caring for Creation: Vision, Hope and Justice." Social statements in our denomination serve as the basis of advocacy and teaching. They are not canon law, but they then become the basis by which we speak. It's on the basis of that document that I address you today.

There are three comments that come out of that document that I think you should hear. We know that care for the Earth is a profoundly spiritual matter. What we are talking about, from your perspective, is regulation and science. For the people of faith, we are also talking about our relationship with God and how we will live our lives in relationship to God. So for us it is more than science. Not that we are in dispute with science. May I suggest the sound bite culture that often pits science and faith in opposite ends are wrong on this

one. People of faith understand that the scientists have it right and we need to be there to understand how to care for creation.

Secondly, a quote: A disrupted nature is a judgment on the unfaithfulness of us as stewards. What you have discovered is a statement about human unfaithfulness, our inability to accomplish the tasks that we were given, which is to care for creation and to care for future generations. You have the responsibility as regulators to help us deal with the issues of unfaithfulness and call us to a faithful use of creation. I commend you for that work and I challenge you to continue that.

Lastly, justice means honoring the integrity of creation and striving for fairness within the human family. We know that increased hurricanes and intensity of hurricanes is a result of global warming caused by human activity. The Evangelical Lutheran church in America has literally spent tens of millions of dollars for the people of New Orleans and the Southeast that suffered under Katrina's devastation. We will respond to those crises, but it would be better for us to prevent those crises. Lutheran World Relief will work around the world with those countries impoverished by the effects of global

warming, but it would be better for us to prevent them rather than responding after they've occurred.

The Lutheran church has a community church in Shishmaref, Alaska, north of the Arctic Circle. That community is literally disappearing and going to have to be relocated, so people of faith are going to have to find a new place to gather, a new community in which to live, entirely as a result of our use of fossil fuels and our activity. It ought not to be so. We look for you to provide the regulation we need so that we might be faithful stewards of God's creation.

MR. GOLDEN: Thank you so much for coming to Seattle. My name is KC Golden. I'm the policy director for Climate Solutions, and your proposed finding is so right, so abundantly well documented, and so overdue that I think it not right for me to dwell with any more of my time on the technical merits of the findings. They are sound. And just say to you that we appreciate you moving forward with them as fast as the circumstances would allow, and on to the next steps. And know that there's a whole country out here that is ready to move with you and implement solutions.

Two of the people in that country who have my ear the most wrote the following statement that I

would like to submit into the record in the form of a letter to me.

It says: Dear Dad. We're writing to inform you that you're in breach of the intergenerational contract. Here's the idea as we understand it. You're the grownup, we're the kids. When really big scary stuff happens, stuff that, like, directly threatens our well-being and our future prospects, you're supposed to deal with it and not just in a polite, careful, professional adult kind of way. If it's a really big threat you need to jump all over it with both feet. It's pretty basic and it should be genetically wired. When a big sabertooth tiger lunges out of the jungle at your kids you have to throw your body in front of it. This is the first provision of the father-child contract.

So, dude, what is up with the adults and global warming? Did you hear how bad it is? Are you thinking, well, if it were really that bad then the adults would be dealing with it? And if you're thinking that then what are we supposed to think?

As evidenced in this proceeding, we submit the testimony of Jim Hansen, America's preeminent climate scientist before Congress in June of 1988. Hansen confirmed that global warming was underway as

caused, in significant part, by humans and that immediate action was necessary. Dad, that was over 20 years ago, before we were born. Since then the empirical effects of climate disruption have come on much more quickly than Hansen predicted.

Dad, your daughter is off to college next year and we still have no meaningful national climate policy. Here is some more incriminating evidence, the crazy stuff you listen to on the news. Yesterday morning we came downstairs and you had on NPR where some smart guy was moaning about the bad economic reports. And he said right there on the morning news where everybody could hear him, consumption worries continue to depress the oil market. Ooh, dad, you say our music is rough, but that stuff is nasty. This guy was actually suggesting that we should be worried about insufficient oil consumption. He was complaining that the oil market is depressed. Didn't the president say we're addicted to oil and that's a bad thing and we have to quit? Doesn't oil dependence cause wars, economic decay and climate devastation? Gosh, dad, you get all worked up when we smoke a little pot and that just gives you the munchies.

So we'll see you in intergenerational court. Please be prepared to testify in the matter of

future versus present. Be advised that the court will not look favorably on any suggestion that the state of the economy justifies delay on your part. The economy and the climate suffer from the same disease, late stage fossil fuel addiction, and they need the same treatment, a clean energy revolution.

And dad, you should also know that the court takes a very dim view of your self-imposed constraints on what is politically possible. Ignorance of your own power to change the world is no excuse. Thank you.

MS. KRUGER: Thank you very much to the panel for those comments. We're going to just keep it moving here. So I would like to ask the next group to come on up. Let's see. Terri Glaberson and Kristen McCaa, both from Cool Mom, I believe. Sofia Gidlund from Greenpeace. Tony Lee from the Statewide Poverty Action Network. Aaron Briggs from CityCrops.org, and Dr. Larry Green from Bokashicycle, LLC.

You can sit in any order that you want. It's fine. It doesn't matter. Just identify yourself when you start speaking. I'm also going to ask the speakers to try and stay as close to the time as possible because we're running a little bit behind, and I know that many of you have lunch plans.

MS. GLABERSON: Hi, good morning. My name is Terri Glaberson and I'm with Cool Mom, and I'm here with my daughter Sydney as well. I want to thank you for allowing me to share my thoughts on your findings that greenhouse gas emissions are hazardous to our health.

Through Cool Mom I represent over 600 moms. We are a local organization that unites moms on climate change. I'm not here as a scientist, politician or lobbyist. I'm here as a mom. This hearing and rally today is not about you and me. It is about our children and our children's futures. They don't have a voice and we need to be that voice for them. I know that if we don't act today our children won't see tomorrow. They won't see the trees and the mountains and the lakes like we do. They won't eat and drink like we do. They won't breathe the air like we do and they won't live a life of prosperity like we do.

I know when my daughter was born, life changed for me. Each and everything I did had an impact on her life and it still does. I look at her and see so much potential and life ahead of her, but if we don't act now, there won't be a tomorrow for her or any of the other children. As President Obama

says, act with the urgency of now. The most pressing problem of today is climate change. Without a healthy planet there will be no need for health care reform or improved education for our children. We must act now. The road will be challenging, the changes hard, but we simply need to act. The energy we use today will affect our children tomorrow. We must learn to use cleaner greener energy. We must use solar, wind power and hydro power in our homes, schools and businesses.

I know your findings that greenhouse gas emissions from cars and industry are hazardous to our health. Without regulation, the CO_2 tipping point will grow beyond fixing. We must act today and regulate these industries. We must act quickly and boldly and not shy away because of a troubled economy. If we act too slowly the economy won't matter. There will be no future for the economy or for our children.

My good friend, Abby, who is sitting over here, she stared a story with me when she was going out to a Cool Mom meeting one night and her son asked her, "What do you do at these meetings, mom?" And she responded by saying, "We talk about climate change." And he said, "Mom, you can't save the planet by talking." Wise words from a six-year-old. Let us not just talk. Let us act now, act with the urgency of

now because our children's futures are in our hands. Thank you.

MS. MCCAA: Hello. And thank you very much for the opportunity to testify at this important hearing. My name is Kristen McCaa. I'm the mother of two small children, one of whom is with me today, my son Harris, four years old. I'm also the wife of an atmospheric scientist, and the cofounder of Cool Mom, an organization of mothers united to address climate change.

A few years ago my husband, a former climate modeler, showed me a graph of rising global temperatures. I was holding my baby at the time and I was stunned. Those images drew a devastating vision of her future world, a world of food and water shortages, species extinction, devastating storms, disease migration and political instability. At long last, long last, we have public acknowledgement from the EPA that greenhouse gas pollution presents a danger to our health.

It is critical we take these findings to mean that we should regulate greenhouse gas pollution without delay. Earth's climate clock is ticking and time is running out. The science is complex but clear. We know that if we fail to take action we are,

in effect, causing harm to the most defenseless citizens of our planet, our children, our children's children, and the impoverished. The people who are least responsible for the climate crisis will be the most severely affected by it. We stand at a crossroads. We have a historic opportunity to do the right thing and to regulate greenhouse gases.

Future generations will ask: What did you do when you learned about climate change? We cannot fail them with inaction. We must therefore act with moral courage in the face of all obstacles. We must act with conviction in the knowledge that greenhouse gas pollution threatens the health of our planet, our communities, and our families. There is no reason to falter. A challenging economy is no excuse because preventive measures will cost us far less than neglect.

As all mothers with very little time to spare, I'm a fan of efficiency. Climate change action is efficient in that it addresses a plethora of important issues facing our great nation. National security, our economy, our health and our very well-being. Decisive action to halt climate change stands above all else to benefit us. We have a grand opportunity to forge a leadership role in the global

green economy, and we can ensure that our children's future is a healthy and a prosperous one.

As an individual, I am doing all that I can to avert the climate crisis. And I will be watching our government, our Environmental Protection Agency, very closely to see that it's doing its job. Our children deserve nothing less than our very best efforts. Thank you for your time.

MS. GIDLUND: Hello. I am very happy to be here today. I'm Sofia Gidlund, a regional organizer with Greenpeace, and I'm here testifying in support of the EPA regulating greenhouse gas emissions. It's imperative that we allow science to be our guide in efforts to protect our sensitive climate system. It's been a long process of 10 years to reach this proposed endangerment finding, and it's important that the EPA move to finalize it as quickly as possible.

The science is screaming at us. We just don't have another 10 years to wait. The last two years have brought the lowest Arctic summer ice extent on record. We could see an ice-free Arctic in the summer just five years from now. New evidence shows that Arctic permafrost and seabed methane hydrates are melting at unprecedented rates, releasing powerful global warming gases that have been locked away for

thousands of years. If we allow these changes to continue, these gases could create sudden, unchecked, and irreversible global warming.

As the EPA finding points out, climate impacts are already being observed not only in the Arctic but also here at home, and they are falling disproportionately on vulnerable communities. What is outside of the scope of the finding is just how much action we would need to take to truly protect human health and welfare from these continued impacts. Science now estimates, in the space on the IPCC findings, Intergovernmental Panel on Climate Change, that the developed world must achieve cuts in greenhouse gas emissions of 25 to 40 percent below 1990's level by 2020, and 80 to 95 percent below 1990's level by 2050, if we're going to have a good chance to avoid catastrophic climate change.

The U.S. must get into that same range and we need to do our part. This global problem will demand a global solution, and all eyes are clearly on the United States in the lead up to this year's international climate talks in Copenhagen in December.

There is a climate bill being discussed currently in Congress, and it has been watered down again and again in backroom deals and under pressure

from industry lobbyists over the last few weeks. Though only a draft, the bill is already far from the solution that science and the global community will demand of us. Fortunately, the administration and the EPA are in position to rise above industry lobbyist influences in Washington.

And we understand that the administration would like to see strong, comprehensive legislation from our Congress. However, the continued weakening of the Waxman-Markey climate bill has made it clear that the EPA needs to move ahead with all speed to put the administration in place to lead by regulating greenhouse gases to science-based levels.

We are concerned that the climate draft, in its current form, would rob the EPA of many of its existing authorities to regulate greenhouse gases and protect health and welfare. The EPA should not give up its power under the Clean Air Act, one of our environment's best defenses, to a weak, industry-influenced plan like the current climate draft bill in Congress. We need the administration's leadership now more than ever. Thank you very much.

MR. BRIGGS: Hello. My name is Aaron Briggs. I'm with Citycrops.org. Citycrops is an urban agricultural project in which food is grown and

distributed within the same cities where the consumers are, where the food is to be consumed, and part of the inception of Citycrops comes from knowing that the way food is now grown and distributed throughout the planet is not ecologically sustainable. We are in full agreement of the EPA's findings of endangerment, in full support of regulating greenhouse gas emissions. We support this because too many industries have demonstrated too many times that they cannot or will not regulate themselves to do the right thing for the right reasons beyond economic motivation.

I will submit a more lengthy written testimony, but wanted to ask you -- to come here and ask you in person for once to not limit your scope to transportation work, to please not wait for Congress to act. And to please remember that net zero is not good enough. That we need to regulate not only the gases that we continue to pollute our environment with, but also to reclaim what we've already put into the atmosphere. Thank you.

MR. LEE: My name is Tony Lee. I'm the policy director for the Statewide Poverty Action Network. SPAN is a community-based organization that works on low income issues. SPAN supports the EPA's

finding that greenhouse gas emissions endanger the health and welfare of our citizens.

Greenhouse gas pollution affects all of us, as you've heard from the scientists. But it especially affects low income people who are more likely to live near polluting sites such as freeways and factories. I think Hurricane Katrina was a stark reminder that natural disasters that are made more severe by global warming have a disproportionate impact on low income people.

The time to act is now. The United States has the opportunity to lead the world in addressing global warming. By capping greenhouse gas emissions, we have the opportunity to transition to a new economy. I think you will hear arguments that the new economy, the transition to a new economy, will hurt low income people. I think the opposite is true. In our own state, we have made significant steps to make sure that in the transition to the green economy that low income people will get the necessary training to get these jobs.

We can also mitigate the impact of capping greenhouse gas emissions by providing low income people with tax credits and rebates to offset the price increases that we will see in energy. The

Waxman-Markey bill that's already been alluded to in other proposals before the Congress and before our state legislature has provisions that will mitigate the impact of rising energy prices on low income people. We would like to commend the environmental community for making that provision a higher priority than any greenhouse gas emission bill.

And finally, we would like to commend the EPA for really taking this very much needed step and thank you for the opportunity to speak to you. Thank you.

MS. KRUGER: I would like to thank the panel for those remarks. I would like to particularly compliment the cool kids who came with the cool moms who sat up there and behaved themselves so well. It is now my great pleasure to ask Mayor Greg Nickels from the city of Seattle to speak to us.

MAYOR NICKELS: Thank you so much and welcome to Seattle. We're very pleased that you're here today. I've submitted some written testimony, and I will not read that to you, but I would like to just share a few thoughts with you at the hearing today.

On February 16 of 2005, I pledged that Seattle would reduce our emissions by the amount

called for in the Kyoto treaty, if the United States had been a party to that treaty.

And I did so because 141 countries had stepped up that day and said that they were going to make those reductions law. But our country did not. And the federal government simply was failing to lead, or even participate with the rest of the world. Now, I understood that if Seattle did that alone it was purely symbolic, and it's hard to get people to change their behaviors for symbolic reasons.

And so I challenged mayors across the country to join with Seattle. And as of today 944 of my colleagues have agreed to take local action to reduce their emissions by the amount called for in the Kyoto treaty. That represents 84 million Americans, slightly larger than the population of Germany. So it is not a symbolic effort any more. And there is great work being done in cities across the country.

Now I didn't do this because I was looking for a global challenge -- I have plenty on my plate as mayor of this great city -- but because this was a local issue to us. We are blessed with natural beauty here, which hopefully you'll get an opportunity to enjoy at some point after your hearing. Elliott Bay, the Cascade and Olympic Mountains. We enjoy clean,

fresh water. We have green electricity from our hydroelectric system, and we have a close relationship with the bounty of Puget Sound and Elliott Bay. And each of those is threatened by global warming.

For us it is a local issue. The annual temperature increase of half a degree per decade will threaten the snow pack in the Cascade Mountains. In fact, we think that it will shrink by about 40 percent by 2020. That will disrupt our hydroelectric system. It will disrupt the source of water that we have for Seattle and about a million people who live around Seattle. We will face a water crisis and an energy crisis. We believe that rains will increase. In five years we have experienced two 100-year flood events. It stresses our drainage, our storm water systems, and threatens our people.

We expect that the sea level rise that is now predicted will put about 700 to 1,000 acres of land at risk in our city, Harbor Island, South Park and our central waterfront. And as more carbon is absorbed into the oceans, marine life will be threatened. Our iconic salmon and orca are in danger, and this is the home of the North Pacific fishing fleet. So it's important to our economy as well.

The truth of global warming, we think, is

now self-evident. It's incumbent upon the federal government and the EPA to accept the overwhelming body of scientific evidence and declare that greenhouse gases endanger our nation's health and welfare. The challenge is no less for all of us than changing our culture from one of conspicuous consumption to one of conspicuous conservation.

But Seattle is not alone, and on behalf of the U.S. Conference of Mayors, I urge the EPA to finalize the findings, begin protecting our people from this danger. And in doing so, it has been mentioned before, we can seize an opportunity to create a new economy based on renewable energy resources. Seattle and America's mayors are ready to help you lead this effort and engage all of our people. Thank you.

MS. KRUGER: Thank you very much for your remarks. We're getting close to lunch, but in the interests of just making sure as many people can speak as close to the time as possible, I'm going to call three additional speakers up to take us to the lunch break.

James Dailey from MicroEnergy Credits. Is he here? Great. John Druelinger from Evergreen State College. Wonderful. And Ethan Schaffer from Climate

Solutions.

MR. DAILEY: Thank you for taking my testimony today on this important issue. I'm James Dailey, cofounder and director of MicroEnergy Credits, which makes clean energy financing possible in many countries around the world, and creates good-paying jobs here.

MicroEnergy Credits is one of many companies based in the Northwest that will benefit from the proposed EPA regulations. This is because regulations provide an incentive for companies to develop innovative clean products and solutions. Millions of people can benefit from the products manufactured here.

Twenty years ago I served as a Peace Corps volunteer in West Africa and explained to my students then about the looming threat of climate change for our generation. These bright and eager high school students then responded, "But what are you people going to do about it? This isn't something we caused here."

Indeed. For too long the U.S. Government and EPA failed to take action on this issue despite the growing scientific consensus. Twenty years ago would have been a good time to consider urgent action,

just in the precautionary legal principles alone. So I applaud this step by EPA to regulate CO_2 and other greenhouse gases, and it should be and must be the first of many policies to protect human health and jump start the clean energy transformation. The emissions of the U.S. and major trading partners account for an overwhelming amount of anthropogenic CO_2 in the atmosphere. You've already taken much testimony on this.

The impacts of this fundamental tinkering of the atmosphere's chemistry, as it becomes more pronounced, the eyes of the world are upon us. Failure to recognize this clear and present danger to human health and our long-term national interests will be catastrophic. We can, and we should, lead the next clean energy innovative economy.

We in the Northwest know how to put technology together. We know how to put businesses together with manufacturing for clean energy.

Critics would have us believe that increases in drought frequency, that more intense and more damaging storms and flood events, that more wildfires, that additional particulate pollution from forest fires, that heat waves and tropical diseases moving ever northward, that all of these impacts, not

in developed regions of the world but in our own backyard, are not sufficiently harmful to trigger EPA action.

These critics are wrong. Indeed, the host of threats to human health in the U.S. are so overwhelming in their variety and vector that failure to act 20 years ago, never mind today, is just unconscionable. Even if one assigns modestly low values for human health and life, the net present value of potential risks for Americans from high probability manmade climate change is in the trillions of dollars for the next few decades. Yet even this underestimates the overwhelming cost.

There is an alternative road we can be on as a country and global leader, one that regulates this pollutant and encourages innovative approaches to carbon cap and trade. The benefit/cost analysis on its endangerment determination is a no-brainer. As a member of the business community, I call on the EPA to regulate 100 percent of all greenhouse gases from manmade sources aiming for complete phase-out by 2020. I want to tell people in developing countries that I visit that this is our collective global problem but the U.S. has taken the first step.

MR. DRUELINGER: My name is John

Druelinger, and I am a student at the Evergreen State College. And I was born in the '80s, and as far back as I have known, bottles and cans are to be recycled. I have always been taught that I should flip off light switches and snip the little plastic rings from six packs of soda, and I have been told consistently throughout my life that I should plant trees and do my part to save the environment. And every year that I and others my age have heard and heeded these words of advice total U.S. greenhouse gas emissions have risen, drastically in fact. We were not lied to, and the things that we were taught to do to save the environment are not wrong and they do make a difference. But simply put, nothing will decrease these dangerous emissions unless we make it our specific goal to reduce them.

I applaud the EPA for releasing this finding and for taking this vital first step towards reducing our greenhouse gas emissions. I would like to see reduction in these emissions be the aim of individuals, businesses and government alike. I would like to see total U.S. greenhouse gas emissions displayed for all of us to see, much like our national debt clock, so that we can see the debt we all owe to our climate. And within my lifetime I believe it's

possible to see both of these clocks read in negative amounts. We can do this by creating cycles and systems of living in our world that not only sustain but enhance both our environment and our quality of life, which are inseparably intertwined.

By transitioning to clean energy and ensuring the end of global warming pollution, we would create the green jobs that I and so many my age would love to have. We would increase economic prosperity and end our addiction to fossil fuel. We've all heard time and time again that the great problems of now become the burden of the next generation. When this warning is ignored, as it has been during the last administration, it becomes a slap in the face to younger generations. And in response we showed up en masse to support President Obama because we believed he would listen to what we were frightfully aware of.

The transition from our dirty fuel economy requires strong leadership. We are, after all, the world's leader in carbon emissions, but we now have the chance to be leaders in the global fight to end climate change. The health and safety of not only U.S. citizens but global citizens depends on our willingness to make this leap and to finally acknowledge what we have known for years to be true,

that the emissions of greenhouse gas is scientifically, and undeniably, a threat to public health and welfare.

The young people of the United States fully support the actions of the EPA and of the Obama Administration to reduce greenhouse gas emissions because we know the results to be in our hands, in our lungs, in our waters and in our weather, and that the results of continued inaction are irreparably costly. Thank you.

MR. SCHAFFER: Thank you for holding this hearing today. My name is Ethan Schaffer and I'm here to testify in support of the EPA's public endangerment finding. I'm from the small town of Sandpoint, Idaho, where I grew up on a 360-acre hay and tree farm. I'm also the founder of growfood.org, the largest apprenticeship program for organic farmers in the country. We have a network of 1,500 farms in all 50 states that provides hands-on education to new and aspiring farmers.

Since I founded the program in 2001, we have trained over 20,000 new farmers. And though we have helped many young farmers get their start on the land, I'm deeply concerned for their future. Climate change is a direct threat to the livelihood of farmers

and the agrarian way of life.

I know some people mistakenly think that global warming may improve growing seasons in temperate climates, but from what I hear from scientists and what I have witnessed, climate change really means erratic and unpredictable weather. And there is not much that gets farmers down more than bad weather.

From erratic frost and new paths to drought and flooding, climate change is a major risk to agriculture and, therefore, to the health and well-being of all people who eat. I'm told that in Australia they are considering no longer even using the word "drought" because it implies that there might be an end. It's possible that drought is the new normal. California is now in its third year of drought and farmers are preparing for another season with dangerously low snow pack. Economists predict this will cost the state 80,000 jobs and two billion dollars in 2009.

Here in Washington I know many farms that have been devastated by two years of abnormal flooding. I know farmers don't like change, especially higher input costs. But I think we can handle a few more cents on the gallon of diesel if it

means our farms won't get wiped out by floods. Better yet, we'll run our tractors on American-grown biodiesel.

And that's the hope in this dire situation. Agriculture is also a solution, and the EPA should see us as a partner in combating climate change. Local food can reduce the fossil fuels used for transportation. Organic agriculture, especially no till, sequesters carbon in the soil. New practices like biochar may increase the carbon capture potential of soils even further and increase crop yields organically.

Growfood.org has had tremendous success training a new generation of farmers, but we must ensure that they inherit a stable growing season. It's hard enough to be a farmer as it is. For the sake of the next generation of organic farmers and all of those who will feed us, we must assume all responsibility and mend our climate-changing ways. Thank you to the EPA and to Lisa Jackson for stepping up to the challenge. I support the endangerment finding. Please regulate greenhouse gases. Thank you.

MS. KRUGER: Thank you very much. We actually have only six speakers left that have checked

in from the morning's session, and so I don't know if some of them do have lunch plans, but I would like to call your names, and if you're able to come up and give us your comments now, we would appreciate that, which will keep us on time and enable as many people as possible to speak in a timely way.

So these folks are Edward Henderson of the Mountaineers. Pete Knutson from the Puget Sound Harvesters Association. Marian Wineman from WR Consulting. Dezi Siler from Greenpeace. Sharon Abreu from Irthlingz Arts-Based Environmental Education, and Paula Pripusich from Greenpeace.

MR. HENDERSON: Good morning. I'm Ed Henderson, a past president of the Mountaineers, an outdoor recreation and conservation organization with about 10,000 members in Western Washington.

I moved to Washington to enjoy the opportunities for outdoor recreation, especially mountain climbing. The Mountaineers is very pleased that the Environmental Protection Agency is proposing findings that the emission of carbon dioxide and other greenhouse gases threaten the health and welfare of current and future generations. This is an opportunity to take the first steps to set new standards for controlling these very dangerous

pollutants.

As a mountaineer, I have an opportunity to observe the effects of global warming directly. In the 20 years I have climbed on our magnificent mountains, I have seen these effects firsthand. Glaciers which challenged my skills and endurance a decade ago no longer exist. One of the joys of climbing is observing the thin edge of life on the margin, the communities of plants and animals, an ecosystem above the treeline where existence is barely possible.

Scientists estimate if the present warming trends continue, the average annual snow level, presently at about elevation 3,000 feet, will rise over a thousand feet to over 4,100 feet by midcentury. The rising snow level will drive successful ecosystems to isolation on the peaks, until they are driven off the mountaintops into extinction.

If the recreational pleasure and the spiritual renewal of the people who enjoy the mountains and the outdoors or of the health of mountain goats, marmots and wildflower meadows don't excite the agency, I call upon the government to consider the economic impacts of global warming on our state. Agriculture is a five billion dollar business

in Washington. Our farming is heavily dependent upon irrigation. Much of the water used for the irrigation follows the snow in the mountains during the winter. Rising temperatures threaten that storage capacity. A thousand-foot rise in the annual snow level will reduce the annual snow pack by 50 percent.

Changing climate will also adversely affect the forest products industry. Warming temperatures will change the mix of trees in the forest. The stately Douglas Fir will be replaced with less valuable species. Warmer weather will allow the infestation by destructive insects, and long and dry summers will increase the threats of forest fires.

The Mountaineers urges the agency to adopt the endangerment findings for the dangerous greenhouse gases. We further hope and expect that such a finding will lead to regulations limiting, and eventually eliminating, the production of these gases by both motor vehicles and energy facilities. And I'll thank you for the opportunity to address these comments to the agency.

MR. KNUTSON: My name is Pete Knutson. I'm a commercial fisherman based in Seattle and have fished North Pacific waters since 1972. My great grandfather built fishing boats. My sons are in the

fishing business. Our boats are at Fisherman's Terminal, a couple of miles north of here where thousands of people work. We have had lots of good seasons fishing these waters sustainably. We sell our catch to thousands of consumers through our family business, Loki Fish Company. So I'm here today representing my family and my fishery and the people we feed and my fellow commercial fishermen and their families who have joined together as the Puget Sound Harvesters Association.

As fishermen we know that everything has to go somewhere. All the floating crap that people throw in the water ends up in our nets, from six-pack rings and plastic bags to rosebushes, but at least that stuff is visible. Now we have an invisible pollution which is threatening our fisheries, our livelihoods and the food web.

It starts out as carbon dioxide spewed into the earth's thin atmosphere from smoke stacks and tailpipes. It ends up dropping out of the sky into the ocean where it becomes carbonic acid. So much carbon dioxide is now being put into the atmosphere, and ultimately the marine waters, that our oceans and our fisheries are now in jeopardy from acidification. The research on the chemistry is now coming in, and it

does not look good for our coastal waters, and I will submit some of that research as written testimony.

In 2008, Oregon state researchers found high levels of acidified water within 20 miles of our coast. It is not in dispute that as carbon dioxide is absorbed by the oceans acidification is occurring. The biological impacts at this point are not fully known. We do know that any creature that has to build a calcium carbonate shell is going to have problems if the oceans continue to become increasingly corrosive.

North Pacific salmon eat huge quantities of a microscopic floating mollusk called a petropod, also known as a sea butterfly. It has a shell which is vulnerable to an ocean acidification. About 40 percent of the diet of our salmon are these little sea butterflies. If we lose that sea butterfly we endanger the salmon which feeds the human, the orca, the bear, the eagle, the cedar tree and the whole living web of the North Pacific Rim. If unregulated dumping of carbon dioxide into the atmosphere and the oceans continues, we will lose fisheries, jobs and a food source. We will impoverish the marine environment.

When I started fishing commercially in 1972, I was told many times that fishing was a dying

industry. John Steinbeck's abandoned Cannery Row was supposed to be the future. Yet we find that Mother Nature surprises us with her resilience. We still have sustainable fish stocks here in the Pacific. This battle is not over. We should not be paralyzed by the enormity of the problem that we face. On behalf of the commercial fishing communities here in the Northwest, I ask the Environmental Protection Agency to defend our common interest in a healthy ocean. It's time to act.

MS. WINEMAN: Hi. My name is Marion Wineman. And I'm a small business owner of WR Consulting. First I would like to thank the EPA administration and the staff and the Obama Administration for having this hearing. I'm here also today to testify as a mom, and my profession and my business is a toxicologist and environmental engineer. I strongly support EPA's finding that the current and projected concentration of the mix of six key greenhouse gases threaten the public health and welfare of current and future generations here in the U.S. and throughout the world.

As a toxicologist, I'm particularly concerned about the public health impacts of global warming, including the spread of vector-borne

illnesses, such as West Nile virus and malaria, the increased frequency and death from waterborne illnesses, respiratory illnesses, and heat. I am also concerned about the climate change impacts of ocean acidification, drought and insect damage on the world food supply.

As an environmental engineer, I am especially aware of the impacts of rising sea levels and higher storm intensity on basic infrastructure that's important to human health and the environment, including water supply and waste disposal. Since the last IPCC report, hundreds of recent studies show much more rapid deleterious effects of climate change. I strongly urge EPA to set and act immediately and aggressively to protect human health, welfare and the environment. The cost of action will pale in comparison -- I mean, action today will pale in comparison to the cost to address all the numerous health and infrastructure problems the longer we delay action.

We have the technology and ingenuity to live in a low carbon economy now, to protect our generation and future generations. Please, EPA, supply the guidance and fortitude that implementation will demand. Thank you.

MS. ABREU: Hi. I'm Sharon Abreu of Irthlingz Arts-Based Environmental Education. I also represent the Network of Spiritual Progressives, and I served for 10 years on the caucuses trade union, energy and education caucuses of the UN Commission on Sustainable Development.

I want to thank you very much for having this hearing today. I urge the EPA to finalize its proposal. I strongly support the EPA's findings on endangerment, and I would like to say that I've been doing environmental education, climate change specifically, for 10 years. Many of the things we're talking about today we were talking about 10 years ago. We are way behind and we need to catch up fast. So I would like to support you in any way I can on action.

There are people suffering all over the world and in this country. A lot of it has to do with our own consumption habits. I'm very concerned about the time sensitivity of climate change and also the watering down of legislation. I think we've got serious problems in the Congress. We are not being represented. We need to be represented by both parties. All representatives in both parties.

This is a matter of ecojustice, moral and

ethical issues. We need to ask ourselves who we are. We need to reduce CO_2 levels by 7 percent below 1990 levels as soon as possible. I heard that President Obama is talking about reducing the levels but not below 1990 levels. And I wanted to confirm that because we need to reduce these levels below 1990, not 2003 or 2001.

We need polluter-pays policies. We need to shift energy subsidies so that the market, the energy market, accurately reflects the real costs of energy. I would like to say there's no such thing as clean coal, and coal is getting more expensive. So we need to ask ourselves where we're going to invest in our energy future, what technologies are going to make the most sense for us into the future. We need a national strategy for sustainability, and there is a great national strategy for sustainability on the Change.org web site. It was one of the top 10 ideas out of 7,700 ideas on Change.org for the Obama Administration to adopt.

We need effective engaging outreach to change our habits, to encourage good environmental values. And we need -- this needs to include solid environmental education and education for sustainability curricula at all grade levels.

And in closing I would like to sing you a little piece from the Penguins on Thin Ice Climate Change Musical Revue. In the U.S. we consume -- our emissions are 22 tons of carbon dioxide per year per person. The global average is four tons. We're 22 tons.

22 tons of CO_2. Every year that's what I spew. Into the air, just little old me, 22 tons of carbon dioxide. That's a lot, you'd agree. 22 tons, what do you get? Whether I'm going to regret, mama earth, don't you call me because I don't want to know. Here come my 22 tons. Look out below. Thank you very much.

MS. SILER: That's a tough act to follow. My name is Dezi Siler and I'm here with Greenpeace testifying on behalf of our support of the EPA's regulation of greenhouse gas emissions, specifically the unpleasant hydrofluorocarbons. Hydrofluorocarbon emissions, or F-gases from air conditioners and commercial refrigeration, should be regulated immediately with every possible tool of the Clean Air Act. Europe is way ahead of the United States in phasing out these F-gases. The Bush EPA actually identified hydrofluorocarbon emissions from cars as a key component of a possible endangerment finding just

last year.

F-gases are a huge and growing threat to the climate. The good news is that they can be controlled by using alternative nonsynthetic refrigerants or greenfreeze technology. Greenpeace has been calling for regulation of these gases for 20 years. Most recently Greenpeace has worked with Ben and Jerry's, Coke and Pepsi to implement greenfreeze technology for their vending machines and coolers. Unilever, the maker of Ben and Jerry's, has 2,000 test ice cream coolers in Boston and Washington D.C. and millions worldwide. So we can have our ice cream and eat it too.

There are a number of things the EPA can do right now. Number one, better enforce the current laws against venting of these gases, which is illegal but happening every day. Two, put a tax on F-gases and use the money to provide incentives for alternatives in the marketplace or destruction of the old gases. Three, restrict who can buy and handle these dangerous greenhouse gases. Right now you can buy them at Wal-Mart or auto stores to service your car's air conditioning. One can from Wal-Mart is about a pound of hydrofluorocarbon 134A. If that is released into the atmosphere it is worth

14 to 3,800 pounds of CO_2, depending on how you calculate the effect.

Four, the EPA can levy fines on leakage of F-gases from buildings and use that money to get alternatives to the market. And five, they can reward the development of even more alternatives. New science will continually be published that shows what Greenpeace has been saying for years. F-gases are a growing threat that, unchecked, could undo our progress of cutting fossil fuels and other efforts. The good news is that it's an easy thing to fix if we can just get at it now. Thank you so much for being here and allowing us this opportunity.

MS. PRIPUSICH: Good afternoon. My name is Paula Hart Pripusich. It's a difficult one to pronounce so I just say, call me Paula. Thank you very much for holding this hearing here today. I'm stepping in for one of our fellow Greenpeace speakers because, unfortunately, they turned ill and was not able to be here. I'm going to be speaking mostly from my heart and not from a script.

I would like to start by saying that I've lived most of my life in Seattle, Washington. I lived here since I was three years old, moved to Chicago for around seven years and have come home. The one thing

that I've noticed, since the time I was three until the time that I moved away, was when I was three, you could look out the windows, you could be at a park, you could see the mountains. You could see the foothills. I didn't even know what smog was. People talked about smog in LA. What's smog? We don't have any smog.

Then I went to LA and I saw that awful pollution in the air. Over the years while I've lived here it has changed. There is now smog in the air of Seattle. I've seen it happen and it brings tears to my eyes. I don't want the children of the Seattle area or the world to have to experience that.

Having said that, I'll continue by talking from the heart. To be honest, I broke my glasses right before I came up here, so I'm going to be squinting and trying to read here, so please bear with me. Global warming endangers human health and welfare. And the EPA has a duty to do something about this. I'm here on behalf of Greenpeace to support the EPA in regulating greenhouse gas effects through the Clean Air Act.

It's time to move ahead with science-based solutions. EPA's endangerment finding is a welcome sign that the Obama Administration is able to regulate

greenhouse gases under the Clean Air Act. People in the U.S., and around the world, are looking for our leaders to lead. President Obama and Administrator Jackson need to take meaningful, science-based action, capable of addressing the climate crisis.

And I feel very inspired by the young lady who did a little singing earlier, so I will just say my little quick song that I sing to myself. Pardon my scratchy voice. I was downstairs rallying with over 50 children that are here to represent the future and how much it means to them, how in tune they are. They're first graders through sixth graders, and they're out there rallying for you to please regulate greenhouse gases.

Some of you may be familiar with this tune if you lived in the '60s. All we are saying is give the Clean Air Act a chance. Thank you very much.

MS. KRUGER: Thank you very much to the panel. This is a much more dramatic hearing than we had in Washington D.C. Things are a little more lively out here. So we are now going to break for lunch. We're going to start back up as close to 1:00 as we can possibly do it. We will do our darndest to be back in these chairs at one, and I hope you all enjoy your lunch plans, too. Thank you to this panel

and all of the panels for the remarks this morning.

(Adjourned for lunch recess at 12:17 p.m.)

AFTERNOON SESSION

1:00 P.M.

MS. KRUGER: We're going to go ahead and get started with the next group of speakers. So I would like to invite the first panel to come up. Dennis McLerran from the Puget Sound Clean Air Agency. Kathy Fletcher from People for Puget Sound. Nancy Hirsh from the Northwest Energy Coalition and Janet Brimmer from Earth Justice.

A few reminders. If you have a cell phone, please put it into the silence mode. I would like to ask people to hold their applause, if they feel so inspired, until the panel is finished rather than after every speaker, to help us just be a little more efficient with time. And if the speakers can stay close to their three minutes that will be great as well. And with that let's go ahead and go. Dennis, you can start.

MR. MCLERRAN: Good afternoon. I'm Dennis McLerran, the executive director of the Puget Sound Clean Air Agency, and we represent the four counties surrounding central Puget Sound, including the cities of Seattle and Tacoma. And we've been involved in climate change activities here in the region for a

number of years now and are very pleased that EPA is making progress on this issue. And I would like to thank EPA for hosting this hearing in Seattle today, and engaging our local communities in climate change here.

And we strongly support EPA in recognizing the public health and welfare threats from greenhouse gas emissions, basing your findings on clear and compelling science, and requiring emission reductions from motor vehicles. The IPCC's work and EPA's draft endangerment finding have made it very clear that the science supports an endangerment finding for both public health and welfare. An endangerment finding is long overdue, in our view, and we applaud the new administration for moving forward on this critical global issue after a period of delay and obstruction, and we're very pleased that things are moving ahead.

EPA's intent to reduce emissions from motor vehicles is extremely important to the Puget Sound region and the State of Washington where approximately half of our greenhouse gas emissions come from the transportation sector, and we applaud the President's announcement earlier this week to harmonize greenhouse gas standards and fuel economy standards for automobiles. And as you know, the Puget Sound region

and Washington State have been leaders in adapting California's clean car standards here as a key strategy in combating global climate change.

So if EPA implements the rules announced earlier this week, our economic analyses show that our citizens and communities can save over one billion dollars in fuel costs by 2020, and dramatically reduce greenhouse gases from transportation. There are other strategies that need to be put in place regarding transportation, but that's a very key one, and the economic savings from it couldn't come at a better time.

We also strongly support EPA in basing this finding on extensive scientific studies. Our scientists in the Climate Impacts Group at the University of Washington predict that climate change is likely to profoundly impact our Puget Sound and Pacific Northwest environment. Their analysis shows that climate change is expected to bring warmer, wetter winters, increased flooding in our lowland areas, and greater threats of forest fires in our Cascade Mountains.

Our region relies on our abundant water and snow pack for our electricity and agriculture, and projected year-round warming and drier summers will

likely decrease our winter snow pack. These changes will threaten our electricity, our salmon populations, our habitat and our water supplies. These changes will be particularly difficult for our agricultural communities in Eastern Washington who are already experiencing conflicts over water rights.

What I also would like to add before I wrap up is that I support and agree with the comments provided by NACAA, the National Association of Clean Air Agencies in Arlington and here earlier today. And I would just conclude by saying that this finding and action on this issue are likely to be some of the most significant work EPA has ever done, and it is time to get on with it. And while we support actions by Congress on a comprehensive climate bill, we also recognize and realize that EPA must play a very significant role in implementing the Clean Air Act as interpreted by the Supreme Court in Massachusetts vs. EPA.

And we believe that can be done responsibly and in a manner that protects our economy and the environment at the same time. We certainly have some catching up to do on this issue, and it's urgent that we get moving as a nation on this. And on behalf of the Puget Sound region, I would like to thank EPA

again for their proposal and for this opportunity to testify today.

MS. FLETCHER: Thanks, Dennis. Thank you very much for holding this hearing in Seattle, and for allowing me the opportunity to speak. I'm Kathy Fletcher. And I'm executive director of People for Puget Sound, a regional citizen's organization dedicated to protecting and restoring the health of Puget Sound. I'm here today to support EPA's proposal to regulate greenhouse gases as pollutants. This issue is very real and very important to us here in the Pacific Northwest.

Puget Sound, like major water bodies around the country and around the globe, is in critical condition. Pollution, habitat destruction and over harvest of our fish and other natural resources have brought salmon, orca whales and many other species to the brink of extinction, and have fundamentally unbalanced the Sound's natural systems. Our economy, our kids' futures, and our own health hang in the balance.

Even in its depleted condition, Puget Sound and the salt marshes, fresh water streams and wetlands that surrounds and feed it still produce tremendous economic value in fish and shellfish, recreation and

tourism, flood control and water quality. As we manage storm water runoff, restore damaged habitat and clean up toxic sites, Puget Sound's value will increase, providing a better future for us and our kids and our grandkids.

Climate change threatens all that. Rising temperatures and sea levels, more intense storms and more prolonged droughts, reduced snow pack and glaciers and ocean acidification all threaten Puget Sound's health in fundamental ways. We are already seeing changes. It's essential for the Sound and for our future that we both curtail the human causes of climate change and take effective actions to adjust to the changes already under way.

Climate change, Dennis has already mentioned a few of the impacts here in Puget Sound: Wetter winters, more intense rainfall, drier summers, earlier springs, significant retraction of the snow line, reducing our water warehouse for the summer. Rising sea levels threatening the Sound's critical shoreline nursery habitats. Increased acidification of ocean water, impairing the growth of shells, and the earlier onset of springs.

Some of the many impacts of these changes include inundation and the shift of habitat types in

existing salt marshes, mud flats and beaches, changes in salinity, stratification, nutrient cycling, and ocean productivity, affecting the Puget Sound food web, and expanding our dead zones. Lack of summer creek and river flows to maintain salmon runs in some watersheds and severe reductions in others. Intensified storm water problems, more flooding, erosion, and combined sewer overflows. These are just some of the impacts that we are not looking forward to.

What we need to do most urgently is to reduce carbon emissions now. We need to do a number of other things to adjust to the changes already underway, but there's nothing more fundamental than addressing the underlying problem. Addressing climate change and restoring the health of Puget Sound require fundamental changes in the way we do things. A lot of people think that these changes will be costly, difficult and unpleasant. What they may not fully appreciate is the cost difficulties and unpleasantness of not making these changes, or the positive future we can create if we have the political will.

Vibrant, walkable, unpolluted cities. A strong economy where everyone can afford a place to live with access to convenient, safe transportation to

work and play. A Puget Sound alive with fish, birds and whales and kids on the beach. Clean air to breathe and plentiful, delicious fresh water to drink. This is a positive vision for our future. This will be the sustainable result of addressing climate change and doing what we need to do to restore and protect our Sound. Thank you very much.

MS. HIRSH: Thank you. Good afternoon. My name is Nancy Hirsh. I'm the policy director with the Northwest Energy Coalition. We're a coalition of more than 110 environmental consumer, low income, civic, faith and labor organizations, as well as electric and natural gas utilities, and energy efficiency and renewable energy companies. And we're active in the four Northwest states promoting and advancing a clean energy future for the region.

All morning you've heard about the science and the need to take action, and we've certainly heard that so far today. And we agree with that, and we urge EPA to move forward in issuing a rule to regulate these emissions. And to meet our climate goals, we expect, and when we look into the future, we expect that our electricity demand in this region will grow, and grow dramatically, from increases in population, from electrification of the transportation sector as

we shift off of fossil fuels.

We also expect that we're going to need to change the hydro system in order to accommodate changes in the hydrology, as well as to protect endangered salmon. We also expect to retire many of the coal plants that serve the Northwest in order to meet the climate goals that have been set by the President.

All of these elements mean that we will need an additional 25,000 megawatts of electricity to meet our needs and to accomplish our emissions reductions. That's more than we currently use today, and that's in addition to what we use today. Can we do both? Can we meet our electricity needs and reduce our greenhouse gas emissions? We believe we can, yes.

We have produced a report that's called "Bright Future," and we think it lays out exactly what we need to do, and the centerpiece of that is investments in energy efficiency and renewable energy resources. Energy efficiency is clearly the powerhouse. 14,000 megawatts, average megawatts, of energy efficiency in this region alone, and it's all for less or at the current cost of electricity now. Renewable energy. We need 11,000 average megawatts of new renewable energy to come on line to help solve our

climate challenges.

What's the reservoir we're drawing from? Over 60,000 megawatts of renewable energy potential. We have the resources in the region with energy efficiency and renewable energy to meet our climate goals and our electricity needs.

The question you'll be asked in your role, yes, the science says we need to do this, but can we afford it? Is it economical? What will happen to the economy if we regulate these emissions? We've looked at that, and we've looked at it directly, and in fact our analysis shows that for six-tenths of a penny the bright future will cost six-tenths of a penny more than a business-as-usual carbon-based future. We can afford that. Six-tenths of a penny more per kilowatt hour of electricity to have a bright future that addresses our energy needs and reduces our climate emissions versus an energy future where we continue to damage the public health of our future generations.

So we urge you to not use an adverse economic harm as a fig leaf to avoid tough regulatory standards to reduce these emissions. Thank you very much.

MS. BRIMMER: Good afternoon. My name is Janette Brimmer. I'm an attorney with Earth Justice.

Earth Justice participated in and had attorneys that represented the plaintiffs in the Massachusetts vs. EPA litigation. That's our interest.

Thank you for the opportunity to speak today on this significant issue. And I would like to begin by saying that we applaud President Obama, Administrator Jackson, and really the staff of EPA for the important action that you are taking and proposing today.

It represents a positive turning point from the last eight years where, with these findings, decision making regarding the deterioration of our climate is based upon the best science from the world's best minds, including career scientists at EPA, rather than bare politics.

These findings are an enormous first step in addressing this very serious threat to our health, to our economy, and to the environment. Here in the Northwest we are very much aware of how the deteriorating climate is affecting public health and welfare. You've heard already from the eloquent speakers in front of me, but again, already decreasing snow pack will alter the availability and access to our water supplies, and that's really happening throughout the West in significant measure. And it

will require huge new investments to cope with those changes.

Salmon, already in dire straits, and critically important to native populations and our fishing and tourism industries, will suffer as water temperatures warm. Increasing acidity of the ocean, a direct result of the increased carbon dioxide in the atmosphere, will harm and is harming ocean species. And rising sea levels will wreak havoc on our coastal communities, particularly in the Arctic.

We support and encourage the administration to continue to comply with its legal obligation by moving forward to quickly finalize the endangerment and motor vehicle contribution findings, and by moving quickly on the next step of setting standards. We need to take that next step, particularly in the absence of new comprehensive direction from Congress, beyond the provisions of the Clean Air Act and its 1990 amendments.

Finally, we ask that EPA continue to also push forward additional aspects of this most pressing environmental issue. We've just begun the work. For example, black carbon, commonly referred to as soot, is a climate pollutant that results from the incomplete burning of fossil fuels like diesel in the

shipping industry. Black carbon is having particularly adverse impacts on mountain and Arctic snow pack and ice. Black carbon speeds the melting of glaciers, snow and sea ice with devastating consequences, and therefore, we encourage EPA to forge ahead in responding positively and quickly to petitions to address this issue.

Similarly, we ask EPA to move ahead with action to address pollutants from ships and aircraft, each of which represents a significant and growing contribution to the very climate-harming pollutants that are part of your proposed findings here today. Stopping the deterioration of our climate and the many serious consequences that we will all suffer as a result will take all of our efforts, and all of the efforts of all three branches of government.

We are heartened that EPA's proposal here today represents a new era of action and leadership, and we look forward to additional positive steps in the coming months. Thank you.

MS. KRUGER: Thank you very much. And thank you to the panel. I would like to remind the members of this panel and other panels, if you have a written copy of your remarks and you're able to do so and can leave it with the person who is doing the

recording, that will help with the accuracy of the transcript today.

And I'd also reiterate today, just in the interests of time, it would be nice to hold applause and acknowledgement of the panelists until the end so we can keep things moving along, because we do have a very full slate of people.

So I now would like to call the next group up. Mark Hoppen from the Washington State Public Works Board. Brian Haberly, Elizabeth Davis from the League of Women Voters of Washington. Rachel Larson, Oregon Physicians for Social Responsibility, and Leah Donahey from CREDO Mobile. You can sit anywhere and speak in any order as long as you identify yourself when you start.

MS. DAVIS: Good afternoon. My name is Elizabeth Davis, and I am with the League of Women Voters of Washington. Thank you, first of all, for having one of your two public hearings here on the West Coast. We certainly appreciate that. The League of Women Voters of Washington joins the League of Women Voters of the United States in supporting the Environmental Protection Agency's endangerment and cause or contribute findings for greenhouse gases under the Clean Air Act. We call upon the EPA to

aggressively regulate greenhouse gases in order to protect public health and the environment.

Here in Washington, our state and local Leagues have been actively working to increase public awareness about global climate change, to encourage necessary changes that bring about reduced emissions of climate change gas emissions, and to seek enactment of state legislation that produces such reduced emissions. We have done this for at least a decade through conferences, public meetings, reports, testifying on climate change legislation in Olympia, posting climate change information on our state League web site, and articles in our newsletters, among other activities.

Global climate change is the critical issue of our time for protecting human health, welfare and the natural environment. Aggressive action to reduce our global warming gas emissions is essential now. We are pleased that the EPA is finally taking this essential step to reduce our greenhouse gas emissions. The League of Woman Voters of the United States, it is my understanding, will be submitting more detailed and substantive comments prior to June 23. Thank you for the opportunity to speak here today.

MS. LARSON: Thank you. If I could go

next, I probably won't take three minutes because my visual aid that I'm here to talk about today might not think that three minutes is adequate. Anyway, my name is Rachel Larson. I'm from Oregon Physicians for Social Responsibility. All of the Oregon Physicians for Social Responsibility, our 36,000 members all over the nation, thank you very much for listening to our concerns about climate change today.

I want to share about children and how they're affected by climate change with their health. Children are a third of the population at particular risk. They're at particular risk because of the negative health outcomes of global warming for several reasons. They're at greater exposure given their nervous systems and their time spent outdoors, their greater sensitivity to certain exposures from environmental toxins caused from climate change, and their dependency on caregivers for appropriate preparedness and response.

These factors can interact with poverty, race and class to increase further risk. Children are especially vulnerable to short-term and long-term illness, and damage from ambient air pollution because their lungs are developing and growing. They breathe at a higher rate than adults. They spend more time

outdoors engaging in vigorous physical activity. They participate in outdoor sports in communities with high ozone, and are at increased risk of developing asthma. Rates of premature births, low birth weight and infant mortality are increased in communities with high levels of the particulate air pollution.

Given the extreme weather events from climate change, children everywhere are at risk of injury and death from storms and floods. The health consequences associated with extreme weather events include death, injury, increased infectious diseases, posttraumatic mental health and behavioral problems.

The actions we do today or don't do today will affect not only the climate for the present adults, children and grandchildren, but also the costs of actions taken to adapt and migrate, prevent or mitigate, prevent climate change. Investing in mitigation now may avoid some of the severe consequences projected for later in the century. The longer serious reductions in greenhouse gases emissions are delayed, the higher will be the projected costs for mitigation, adaptions and public health care. Thank you.

MS. DONAHEY: Good afternoon. My name is Leah Donahey, and I represent CREDO Mobile. We are

about 500,000 members across the country, both activists and customers. And we hosted a petition on line encouraging folks to write in in support of the endangerment finding, and I have 30,000 comments here that I would like to share with you, and I want to read you the statements that these 30,000 wanted me to deliver to you:

We write today to urge the EPA to regulate carbon dioxide and the five other heat-trapping gases. Global warming is one of the greatest problems facing our society, and we cannot afford to drag our feet as big oil and big coal prolong this fight. Please regulate these gases to the full extent of your ability as soon as you possibly can. Americans and the world are counting on you. Thank you very much.

MR. HABERLY: Good afternoon. My name is Brian Haberly. I am a proud parent of three. I am the current president of the Washington State Paralegal Association, and a paralegal at a leading Seattle coffee company that started here in 1971. Hopefully, some of you have been enjoying it while you've been here in town.

I would like to thank the EPA for its endangerment proposal, and I would urge its quick implementation. I think too much time has already

been lost in talking, and I think the science is well settled, and I think it's time for the issues to move forward. The EPA, if it moves forward with this finding, will help guide the United States Supreme Court in the many possible lawsuits that might arise. The states thus far, and some regions, have banded together, as you know, to combat global warming gases, but it's been a patchwork quilt, and I think it's long past the time when we need some national recognition of the issue, some national solutions. And the EPA's finding will clearly make a key difference in any legal disputes that arise, and the Supreme Court is looking to you for guidance. So I would encourage you.

Many people talked about the effects of greenhouse gases, so I won't reiterate those points, but I would like to put a little bit different take on it if I could. The Pacific Coast is especially susceptible to some of the effects of greenhouse gases. We produce much of the food for the nation. Of course the California Central Valley grows a variety of crops that feed the U.S., Oregon, a key crop-growing state. In Washington, of course, are apples, cherries, our grapes, our continued wine production. All of those things are highly

susceptible to global warming, and just a few degrees difference would endanger much of our nation's food supply.

In my own company's situation, much of the world's coffee is susceptible to only a couple of degrees temperature change. A worldwide climate shift of about two degrees would endanger much of the world's coffee supplies. I think it would be a much sadder place to live in if we didn't have coffee to enjoy each morning.

Again, as I mentioned before, I just want to reiterate, I think the EPA can take a key role. You're in the key position to highlight this issue, provide some clear guidance, clear leadership, and be a uniting force for many of the groups that are looking to you for that leadership. I urge the EPA to implement the proposed finding of endangerment promptly. Thank you.

MR. HOPPEN: My name is Mark Hoppen. I reside at 8133 Shirley Avenue, Gig Harbor, Washington State, 98332. I serve in the role of public works director in local government and as a board member of the Washington State Public Works Board, but today I'm representing myself as a concerned citizen and my daughter.

The Environmental Protection Agency's proposed endangerment finding is one small but important action that can promote a lasting change in policy that will benefit the health of citizens in this country and perhaps throughout the world. Please substantiate this finding.

Already Washington State faces climate change that by 2080 will cause mean annual temperature increases of approximately six degrees Fahrenheit and will cause mean annual reductions in the winter snow pack, the primary source of annual summer water replenishment, of approximately 65 percent. University of Washington study, 2009.

This changed climate in Washington State, and comparable climate scenarios elsewhere will dramatically and negatively affect infrastructure considerations, lifestyle, politics, health and business. Not just in Washington State but everywhere. The connection between greenhouse gases and climate change is clear. The proposed EPA action provides an introductory, minimal essential policy shift to cope with the most debilitating manmade problem ever faced, short of the prospect of nuclear annihilation.

Some in the business community point to

recession, cost and bureaucracies as reasons to just let Congress handle the issue. If legislators and business interests are left to handle this issue alone, then at best what we are going to get is a worsening, diminished version of the climate change that we have already scheduled for ourselves to date. Every aspect of federal government must act now to generate the quantum policy and technological changes necessary to maintain a healthy society. Thank you.

MS. KRUGER: Thank you very much to this panel. You can drop your petitions over here if you want or you can send them in to us.

We'll move right on into the next panel. We have Chris Humphries from EcoLogistics and Tom Eckmann from Greenwood Technologies, and Brad Warren from the Sustainable Fisheries Partnership, and Sonya Remington from the University of Washington.

MR. HUMPHRIES: Thank you. My name is Chris Humphries. I'm vice-president with EcoLogistics, and a strong supporter of the EPA's finding that greenhouse gases represent a danger to human health and welfare. I believe very much in the risk of environmental impacts and economic impacts related to climate change. I'm also concerned about things that we cannot predict, and have not predicted

so far, as to how these things can intermingle and create other problems for us.

I would like to read a little bit from an article from the LA Times about some climate change experiences they're having in Australia that were really alarming to me. It reads: Climate change scientists say Australia, beset by prolonged drought and deadly bush fires in the south, monsoon flooding and mosquito-borne fevers in the north, widespread wildlife decline, economic collapse in agriculture and killer heat waves, epitomizes the accelerated climate crisis that global warming models have forecast.

With few skeptics among them, Australians appear to be coming to an awakening, adapt to the rapidly shifting climate and soon. Scientists here warn that the experience of the island continent is an early cautionary tale to the rest of the world. Farmers who once grew 60 percent of the nation's produce are walking off of their land or selling their water rights to the state and federal government.

With rainfall in the region at lower than 50 percent of average for more than a decade, Australia is witnessing the collapse of its agricultural sector and the nation's ability to feed itself. In rural Victoria, one rancher or farmer a

week takes his own life. Public health officials say hanging is the preferred method. Fourteen dairy farmers have committed suicide in the last five years. 200 Melbourne residents died in a heatwave that buckled the steel skeleton on a newly constructed 400-foot ferris wheel and warped train tracks like spaghetti.

Cities experienced four days of temperatures at 110 degrees or higher with little humidity and 100-mile-an-hour winds. In areas where fires hit, temperatures reached 120 degrees. On the hottest day more than 4,000 gray-headed flying foxes dropped dead out of the trees in one Melbourne park.

You can just imagine seeing something like that. When you start talking about places where 113 degrees Fahrenheit is commonplace, that raises the question, can you really live in that. Sadly, we're probably going to find out. On our current emissions path Houston and Washington, D.C. will experience temperatures exceeding 98 degrees Fahrenheit for some 60 days a year. Oklahoma would see temperatures above 110 degrees Fahrenheit some 60 to 80 days. Much of Arizona will be subjected to temperatures of 105 degrees or more for 98 days out of the year. That's 14 full weeks.

I would like to transition from the article and make a couple of points. The good news is that business is ready and waiting for government to give it confidence. Be bold and so we will we. One example of that, we're from Portland, Oregon. We started a company called EcoLogistics. We have an office in Portland, Oregon, and are working the entire region to deliver carbon-sensitive construction solutions to the industry. We have a new development system called the eco method that uses carbon calculators and economic development tools to identify opportunities to lower carbon footprints and increase local sourcing and other positive things for the economy.

Meeting CO_2 reductions will require both behavioral and technological change. Transportation and industry practices can provide immediate reductions through current tools and techniques. We cannot wait. Please do not waver.

MR. ECKMANN: Good afternoon. I'm Tom Eckmann, founder of Greenwood Technologies. We sell and develop high-efficiency clean-burning biomass boilers for homes and businesses. These are appliances that burn cord wood, pellets and other carbon-neutral fuels instead of fossil fuels, and save

up to 70 percent on heating costs. Last year we sold over 1,500 of these boilers in the U.S. and Canada providing jobs for over 100 families and making Greenwood one of the fastest growing companies in the State of Washington.

I'm here today speaking in support of the endangerment finding because companies like mine -- and by that I mean companies that are out raising capital and developing new technologies to address our climate issues -- need more than high-priced oil to drive and sustain market adoption. Over the past 40 years we've seen multiple boom/bust cycles in energy where, in response to high oil prices, hundreds of companies formed, billions of dollars were invested to develop alternative fuel technologies. In each case, almost all of these companies were wiped out when oil prices dropped and buyers went back to their old ways of doing things.

The same thing is happening again. Last fall, when the price of oil plunged to under $40 a barrel, demand for alternative energy products plummeted, threatening the existence of the latest round of clean-tech companies like mine. We've got to break this cycle.

The endangerment finding is a long overdue

step in creating an economic environment that supports development of alternative energy solutions. It will move us toward lower carbon emissions, energy independence, and foster development of clean, domestic fuels for heating and power. This finding will not, as many fear, destroy life as we know it. In fact, just the opposite. It will allow us to preserve it. Thank you.

MS. REMINGTON: Good afternoon. I'm Sonya Remington, and I'm here to speak in support of the endangerment finding. I'm with the University of Washington. I'm a natural scientist and a teacher by profession, an avid mountaineer and concerned citizen of the planet. And I'm here today because as a citizen of the planet I want to make sure that humanity makes the right choice at this critical juncture, and it is developed, industrialized countries such as the United States, and especially the United States, whose citizens contribute over 20 percent of CO_2 emissions worldwide, that must take the lead.

We are at a critical juncture defined by the recent and fortunate change in our government's administration, and the fact is that we cannot wait any longer. We have to act now, if not yesterday, to

curb CO_2 emissions.

I'm also here today because I am a natural scientist and believe that it is my responsibility to speak up about what I see the climate science is telling us. Due to my specialized training and knowledge base as a scientist, I can tell you that human-caused global climate change is happening. The scientific debate over climate change is settled. Decades of research by thousands of scientists, all over the world, unequivocally link air pollutants such as CO_2 to climate change, and it is clear that climate change will endanger public health and welfare.

As a mountaineer, I spend a lot of time in the North Cascades. I can tell you from direct observations that the glaciers are melting. Not only have I seen in real time the blue glacial ice literally melting before my eyes, I also see the progression of the melting on the scale of the entire mountain. When I look at maps that I use for navigation they say, for example, that the glacier on Eldorado Peak should start at 6,500 feet, but when I actually go out there the glacier starts around 7,500 feet. The glaciers are receding quickly.

Our children and our children's children, along with all of the other species of our planet,

deserve a safe, prosperous and healthy future. As a teacher, I hope to be part of a larger change in people's knowledge, values and thinking about our planet, but this type of change is slow. Policy changes are what we need right now because we do not have much time. The longer we wait to take action, the worse the effects of climate change will be and the harder they will be to reverse. Thank you.

MR. WARREN: Thanks for having this hearing. I'm Brad Warren, and I'm going to abbreviate this a little bit. I run a program on ocean acidification and global ocean health with the Sustainable Fisheries Partnership known as SFP. This is a nonprofit that works with the seafood industry to improve and conserve fisheries around the world.

I came to this work after more than two decades in this industry where I ran trade journals and consulted on resource management issues. I got involved in this issue because CO_2^-driven chains in the ocean appears to pose an overriding threat to the future of fisheries. At a minimum, we expect ocean acidification and hypoxia alone will reduce productivity of fish stocks that generate food and livelihood for many millions of people. In the worst case, acidification could extinguish many fisheries.

We don't yet know whether we're looking at a serious nuisance or an apocalypse, but it doesn't look good. Some fisheries, such as Washington's oyster industry, may already be experiencing serious harm, and I expect you will have heard from them.

Larger forms of many species are especially vulnerable. Lab experiments show very high mortality. Sixty-seven percent of larvae blue king crab die when exposed to levels of acidification that are already occurring in some waters off the West Coast now in summer.

Based on peer-reviewed NOAA research, it appears that the West Coast and North Pacific off Alaska are especially vulnerable. They tend to collect CO_2 from all around the world, and it aggregates in fairly shallow waters where most of the fish we eat live. These waters, mainly in Alaska, produce about two thirds of the U.S. seafood harvest. So there's a lot of food at stake.

The chemistry of all of this is pretty clear. The biological consequences are still coming into focus. We know that billions of tons of CO_2 from smokestacks and tailpipes are mixing into the ocean every year. The resulting carbonic acid depletes the rich soup of calcium carbonate in sea water, and that

soup is what supports a lot of the marine food web. The stuff that fish eat is at risk.

If you want to see the key scientific papers on this I've got them and would be happy to provide them. My e-mail is in the testimony in written form, so you can just drop me a note.

It's fair to say that seafood producers have two interests at stake in controlling CO_2 emissions. And I want to make clear I don't speak for them, I work with them. We don't have an agreement on every single point of this, but it's very clear that they're concerned.

First of all, they depend on the ocean to make fish. If it fails to do that, they're going to be in a lot of trouble. Even the ones who are in agriculture depend on wild feed stocks to feed the fish they grow. This is an ocean we need to keep producing.

Secondly, like everybody else, what they do burns fuel. Fishing takes fuel. Production is by far the most fuel-intensive part of the process of putting seafood on your plate. And what we found is that fishers and processors very much do want to protect the ocean and make sure the fisheries are still productive, but they also want to stay in business.

They want emission reductions targets that are achievable, and one can debate what "achievable" means. I'm not sure they know yet. Some of them are trying to figure that out. They also want emissions regulations that are fair and affordable.

I'll graze through this very quickly, but these are people who put together a lot of systems in fisheries that involve the equivalent of cap and trade for fishing rights. For 25 years they've done dozens of systems that have taught them a lot and they know something about what's at stake. They want this to be fair and to allocate the rights and privileges and advantages fairly to everyone who has a stake in it, not just big emitters.

There might be disagreements about how to reduce emissions and how far, but I think one goal everybody has in common, certainly that I talk to, is that we want the ocean to keep making fish. There is an excellent documentary on ocean acidification that's just come out. It's going to show in its Northwest premiere on June 1. I encourage everyone here to see it. It will it be at the Egyptian. It's called A Sea Change. You can get information on line at aseachange.net. That's the very concise take. Thanks.

MS. KRUGER: Thank you very much. And thank you to all of the members of this panel. If you're able to drop your oral statements off with the recorder that would be great, and I know that many of you may be planning on providing additional written comments. And if there are -- and this goes for anyone here in the room. If there's information that you want us to have, articles or things like that, the best way to get that into the record is to submit it as a written comment to EPA. And if you go to our web site, epa.gov/climatechange you'll get instructions on how to get that to us.

The next panel that I'm going to call will include William Calvin, an author; Nancy Hatch; Stuart Henderson of Climate Solutions; and Ethan Bergerson of the Sierra Club.

MR. CALVIN: I'm William Calvin, Seattle author, lecturer and professor emeritus at the University of Washington medical school, now affiliated with the program of climate change.

In 1958, when I was an undergraduate physics major, I saw a short movie where the climate scientists of the day were predicting global warming. The EPA could have issued an endangerment ruling in the first year of its existence, 1971. We have

squandered this 50-year lead time the early climate scientists provided us.

We now have a climate problem so big that CO_2 emission reductions, even to zero, won't be a climate fix. If we were removing CO_2 in a big way, countering ongoing emissions and drawing down the 38 percent excess CO_2, then emission reductions would speed the day and reduce the need of sequestration capacity. But without a program to quickly clean up the CO_2 excess, emission reductions will not even buy us time, for we've reached the overwhelming levels of climate change that destroy civilizations.

For methane, the second largest greenhouse gas, natural drawdown mechanisms get rid of half of it within about 10 years. That's in contrast to CO_2 where it takes centuries, and in the process acidifies the ocean. Because of this timing difference, methane emission reductions can make a substantial difference within a decade. Major U.S. sources of methane are not cows in Iowa feed lots or leaking pipelines in Texas, but rather mining in Appalachia. Mine gas is mostly methane, as is natural gas, and mining regions around the world occur as hot spots on a methane night.

We can do something about that, stopping

mountaintop removal and sealing old mines. But the other big methane source is melting permafrost. It is melting because the Arctic regions are warming so fast now that we will lose one third of the permafrost in the next several decades. This source of global warming must, as I said, be countered by taking enough carbon out of circulation somewhere else.

Treating our climate ills is analogous to treating cancer. We are familiar with surgery for removing the tumor, followed by chemotherapy to clean up the remaining bits. Chemotherapy alone cannot clean up most tumors, but it is still valuable in combination with surgery. For chemo we need emission reductions. For surgery we need carbon removal.

Not only must carbon removal be big enough, but yet the emission reductions together must be fast enough to remove us from the danger zones for abrupt climate shifts before something really big happens, such as a major increase in the worldwide drought. A serious jolt would cause catastrophic crop failures, food riots within a year, and would create global waves of climate refugees with the attendant famine, pestilence, war and genocide.

I would say that we must clean up CO_2 by 2030. Acquiescing at a slower approach is like

playing Russian Roulette with a climate gun. Our climate fix really must be big and quick.

MS. HATCH: Good afternoon. My name is Nancy Hatch, and I live in Portland, Oregon, and I am very pleased with the EPA's finding that greenhouse gases contribute to air pollution and endanger public health and welfare. Now that the EPA has had this finding, it must finalize it and take action in the form of regulating greenhouse gases, as well as other pollution sources. At the same time, the federal government must promote clean, renewable domestic energy sources.

A significant part of decreasing air pollution is addressing coal-fired power plants. Coal is a relatively cheap electricity provider. However, it has extremely high cost because of the air pollution that it creates. Coal-fired power plants are the largest source of both sulfur dioxide, which can turn to acid rain when mixed with other chemicals, as well as mercury, and it is 40 percent in the U.S. of the source of the worst known greenhouse gas, carbon dioxide. There has been a lot of talk about clean coal, but the problem is that the technology needed to produce clean coal, particularly with the sequestration of the carbon dioxide, is very expensive

and isn't readily available and won't be for at least for a decade.

Also, regardless of how coal is burned, its mining and transportation threaten the environment and human health. For example, carbon dioxide is released by trucks that transport coal. Also, mining is always a dirty process, particularly in the case of mountaintop removal, which is both dangerous to the ecosystem where it takes place, as well as the people that live there.

Rather than spending lots of money to try to make coal burn cleaner, it makes much more sense for the federal government to create policies that encourage clean, renewable energy and minimize pollution. If the federal government really wants to reduce air pollution, it must prohibit the building of new coal-fired power plants, and also create a plan to phase out the ones that currently exist.

And I would also add that it's important to consider the emissions that happen from transportation of energy, not just the use of energy. For example, the energy that's put off by transporting things like coal, also transportation of petroleum, and also things like the transporting of liquefied natural gas, as has been proposed for Oregon, from foreign

countries. Thank you.

MR. BERGERSON: My name is Ethan Bergerson. I'm an associate Seattle representative for the Sierra Club. I am here today to voice our support of the EPA's finding that global warming constitutes a threat to human health and welfare.

The remarks I have prepared for today are actually very similar to the ones just said by Nancy. And that's actually not surprising because I've heard these remarks all day. Coming through here, many of you probably passed a crowd of 2,000 people, all voicing their support of the EPA's decision, and all voicing their unanimous agreement that something needs to be done to address global warming now. The EPA's finding that global warming is a threat to human health is a very welcome and overdue step in addressing the need for climate change.

The number one thing that the State of Washington can do to address global climate change is to address our use of coal power. As Nancy said, the coal power is the largest single contributor to global warming here in the State of Washington, and it is the one of the first things we can do to address this threat. It's clear that the end of coal in the Northwest is at hand. The only remaining question is

when. We need to start developing a clean energy to replace our TransAlta's dirty coal power, and develop community investments to protect the workers of those plants.

We have a tremendous opportunity. Investing in a clean energy economy has the potential to revitalize Washington and Americans who work for us and rebuild our economy. We can have an economy powered by clean energy and energy efficiency which will finally bring us into the 21st century.

Again, I applaud the EPA's finding that global warming is a threat to human health and public welfare, and I encourage people and the government on all levels to continue this leadership and work to address global warming as soon as possible. Thank you very much.

MR. HENDERSON: My name is Stewart Henderson. I'm misidentified there as being with Climate Solutions. I'm actually president of a small consulting firm, Third Way Consulting Group.

As a small business owner, I specifically want to address the economic impacts of EPA's proposed action. I believe it is critical for America's future economic prosperity that you act quickly to finalize a strong and clear finding that will help limit

greenhouse gases. I'm confident that American businesses must become world leaders in managing carbon dioxide and other greenhouse gas emissions, and your actions can set up a framework that will make that happen.

I can speak with some personal knowledge and conviction about this kind of issue. I consider myself an economic refugee from the city where I grew up in, the city of Detroit. It was obvious to us as high school students in 1977 that, when we graduated, that regulation was required to force auto makers to make more fuel-efficient cars. There were attempts to make that sort of regulation, but auto makers were able to delay and divert those regulations. As a result, they got themselves into the disastrous economic position they're in today, which was completely avoidable and was obvious, as I said, even to us as high school students.

The business leaders who made those decisions are now comfortably retired, but the community that I grew up in has been absolutely devastated. My peers have great jobs. The kids I went to high school with now have great jobs. But those jobs are in Texas, they're in Boston, they're in Denver, they're in Chicago, they're in Silicon Valley.

Where will the students in high school today find careers? Will it be in a vibrant green economy, or will Detroit become our model because we failed to act in this sort of issue so that our best and brightest seek to build their futures in Tokyo, in Berlin, in Rio de Janeiro, in Brussels, in New Dehli, in Shanghai and in Seoul.

I have to conclude by speaking from my heart. I've spent the last 21 years of my life focused on one simple priority, taking care of my sons. I do not have the power to take care of them in this regard. You do. And I urge you to act. Thank you.

MS. KRUGER: Thank you. Thank you very much to the panel. So if you want to leave copies of your remarks with our transcriber that would be lovely.

Our next group of speakers will include Michael Anderson form the Wilderness Society, Evan Kanter From Physicians for Social Responsibility, Craig Segall from the Sierra Club and Nell Johnson.

MR. ANDERSON: Thank you. I'm Mike Anderson from the Wilderness Society. We're a national environmental organization with 400,000 members and supporters founded in 1935 and dedicated

to protecting wilderness, and inspiring Americans to care for our wild places.

I want to thank the EPA for holding this hearing in the Pacific Northwest. The Northwest is rightfully proud of the beautiful peaks and glaciers and the Olympic Mountains and Cascades, the mighty salmon and steelhead that populate our free-flowing rivers, and majestic forests that support exceptional biological diversity. Yet all of these wilderness resources, upon which so much of the Pacific Northwest public welfare and quality of life depend, are now endangered by global warming caused by excessive pollution of our atmosphere with greenhouse gases.

Looking from Seattle across the Puget Sound, we must be concerned about the future generations who, because of global warming, will not be able to admire the snow-capped peaks of the Olympics as we can today. The loss of the region's glaciers and summer snow pack will harm far more than scenic vistas. Less winter snow and more rain in the mountains will mean more frequent and destructive floods in places like the Skokomish River Valley and along the I-5 corridor south of Olympia.

Less snow in the mountains and earlier spring runoff also spell trouble for the region's

agriculture, such as the bountiful crops and orchards that rely on water from the Wenatchee and Yakima rivers east of the Cascades. And the salmon and steelhead, icons of the Northwest, face a perilous future in rivers that are too shallow and warm to support fish that depend on abundant cold water.

Global warming will also mean longer and more intense fire seasons in the Northwest, threatening our forests, wildlife habitats and human communities. So, yes, clearly this region's public health and welfare, including its water, fish, wilderness, and other natural resources are endangered by the greenhouse gases that are causing global climate change.

As the United States develops its national strategy for dealing with climate change, we should recognize the importance of another environmental icon of the Pacific Northwest, the magnificent old growth and mature forests. This region's ancient forests are world champions in their ability to remove carbon from the atmosphere and store it for exceptionally long periods of time in the trees and soil.

The Wilderness Society and other forest conservation groups in Washington State have developed a climate-based forest vision for Washington's

national forests. We are calling on the Obama Administration and Congress to adopt a series of measures to protect the old growth forests and to restore the natural resiliency of our watersheds. `

Among other things, we recommend that the federal government establish a climate reserve to safeguard the old growth mature forest along with their carbon stores and other ecosystem benefits. The climate reserve will act like a forest carbon savings account, and provide a forest conservation model for the rest of the world. Thank you.

DR. KANTER: Good afternoon. I'm Dr. Evan Kanter, national president of Physicians for Social Responsibility. Our board of directors include some of the leading medical scientists in the area of health effects of global warming, and we will also be submitting detailed written comments.

Today's hearing considers the EPA's finding that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations. I represent thousands of health professionals, and we speak with urgency and conviction in support of this finding. The science is clear, and we must act immediately to limit the potentially catastrophic impacts of global warming.

The World Health Organization estimates that global warming is already responsible for 150,000 deaths and 5 million illnesses each year. These have come in the form of malnutrition, diarrhea and vector-borne diseases like malaria and dengue fever. So far they have occurred predominantly in poor countries. Ironically, those that contribute the least to global warming are the most susceptible.

The health impact of climate change is also evident here in the developed world and will be increasingly felt if we do not take action. There are four main categories of health effects. First, increased frequency and intensity of heat waves. The associated health problems of heat cramps, heat exhaustion, and heat stroke will be become increasingly common. The very old and very young are especially vulnerable, as well as those who are poor, socially isolated or who have chronic illnesses.

Second, increased air pollution. Increased temperatures cause increased production of ground level ozone, the main component of smog. This will increase rates of asthma and other respiratory diseases. It also makes breathing difficult for those who already have cardiac or respiratory ailments. Pollen production and allergies are also increasing as

a result of increased carbon dioxide concentrations.

Third, infectious diseases. Climate change is altering the range of disease-carrying organisms. West Nile virus carried by mosquitos was not seen in the U.S. until recently. More than 25,000 cases and more than 1,000 deaths have been recorded.

Fourth, extreme weather events. This includes severe storms, increases in both drought and flooding, and associated features such as erosion and wild fires. We simply do not have the public health capacity to respond to increasing numbers of large scale disasters that are difficult to predict.

Physicians for Social Responsibility combines the values of clinical medicine and public health with sound science to address the gravest threats to health and survival. Global warming is one of those threats. We urge the EPA to fulfill its mission to protect human health and the environment by moving forward under the authority of the Clean Air Act and taking action to regulate greenhouse gases. Thank you.

MR. SEGALL: Hello. My name is Craig Segall. I'm an attorney with the Sierra Club environmental law program, and I'm here to talk about the legal road that you've taken to get to this point

and which we've accompanied you on parts of. And though it's been a long road -- this began with a petition as much as a decade ago -- this has always been the only possible destination, both as a matter of science and -- I think people haven't talked about this enough yet today -- as a matter of law.

There's debate now over whether or not the Clean Air Act is the proper vehicle to do this work. And I think the case you make in the endangerment finding is so clear about what the Clean Air Act, in fact, requires EPA to do and the course you should take -- as the Supreme Court made clear in Massachusetts v. EPA -- that the task you are given is not to make a judgment about ultimately whether this endangerment decision will be good or for ill, although I think it's clear it will be for the good. The task is to look at the science and identify clear and present dangers to public health, and not just clear and present dangers but the dangers down the road.

This core concept within the Act of reasonable anticipation of looking not just at what we can see before us, even though what we see before us are melting glaciers, rising seas and literally tens of thousands of people suffering health impacts every

year, but what will come, asks the EPA to be responsible, to look at problems and anticipate them before they come and head them off. And that's what you're choosing to do.

And the cause or contribute language. People haven't talked a lot about the cause or contribute finding in today's rulemaking. Similarly, I'd invite you not to just look at individual causes but look at contribution. Look at how many different sources together add up to global problems, and then, as the Supreme Court invites you to do, Massachusetts v. EPA, solve those problems not necessarily in one fell swoop, although we do urge you to move quickly, but sensibly, one piece at a time, looking at the worst problems and solving them.

You will have the latitude here to act sensibly under the Clean Air Act, and that's no surprise. The Act has always been a tool for moving what is possible. Senator Muskie years ago, in proposing the Clean Air Act amendments back in 1970, made clear that what the Act asks to do is not what is possible today. It is to create the conditions that make the future possible. To move the world constantly down the road toward improved public health and improved environmental outcomes. That's what the

Act asks, and that's what the Act has done and that's what the Act will do. It is capacious. It invites us, and it's what I think requires you to do what you're doing.

So thank you for your work. We'll be supporting you and we'll be filing, of course, more detailed comments on this in a bit.

MS. JOHNSON: Thank you and thank you for this opportunity to address you as a private citizen. My name is Nell Johnson and I live in Portland, Oregon, but I grew up in a little town called Welch, West Virginia. I'm not a coal miner's daughter, but I lived next door to two coal miner's daughters. Their father coughed a lot and had lost all of his toes in a coal-cutting machine accident. He worked in a coal mine, still had to work in the coal mine. He had to do that to support his family.

Bituminous coal deposits surrounded our little town. Bituminous coal is the softer coal, the cheaper coal, whereas the anthracite is the harder coal that's elsewhere. The creek that ran through our valley was black as oil from coal-washing operations upstream. The creek and its bank were off limits to us as children because of the coal washing, and also raw waste dumping upstream. I remember one of my

friends falling in the water and being ostracized for a week.

The air held coal dust particles which settled on all surfaces, houses, cars, plants, leaves. After playing outside, my clothes, hands, knees, and face were grimy and gray. I smelled coal, I felt the grit of it in my mouth. But I thought all this was normal. We all accepted it. Coal was king.

But the coal mines played out and then we saw true depression and poverty at a time when the rest of the country was prospering, the '60s. Those who could leave did so. My family left our relatives, friends and even pets behind. Yes, king coal brought jobs with the risk of a dark death, or perhaps just losing your toes. But king coal took the jobs away whenever the profits stopped flowing into the pockets of the mine owners who lived far away from the coal-dusted mountains.

That's the coal mining side of it from my perspective, but the coal burning side of it is much worse. Coal mining has wreaked havoc on southern West Virginia, but coal burning is destroying the world. However you burn it you create CO_2 gas, lots of it, and we must stop. Coal burning is the single largest producer of greenhouse gases in the U.S. But some of

us don't want to stop.

The power of greed never ceases to amaze me. Throughout human history we have traded long-term benefits for short-term gains, and look where we are. With our many other endeavors, such as clear-cutting forests to the point where heavy rains wipe out entire towns, exploiting the working class, making unwise mortgage loans that are forcing families from their homes, using more than our share of the world's resources, ignoring the early signs of global warming, we are, in effect, clear-cutting the social, economic and environmental landscape. We're making a big mess.

We know it's logically and even morally wrong to pollute the earth and its atmosphere and that it's wrong to hurt people, even if those people have yet to be born. We can afford to think big now. What if we take responsibility. Let us not fear the possibility of a higher energy bill. Let us fear the part of ourselves that wants to live a little easier and cheaper now and ignore the inevitable, sad and preventable cost to our grandchildren. We don't want to be known from this point forward as the last generation that could have made the difference, but didn't. You can green wash and clean wash it all you want, but the only clean coal is the coal that's left

in the ground. Thank you.

MS. KRUGER: Thank you very much. Please give your remarks to the reporter if you can. Thank you so much, everyone.

Our next group of speakers is Shefali Ranganathan, Becky Kelley from the Washington Environmental Council, Anastasia Schemkes from the Sierra Student Council, and Trevor Miller from Redmond High School.

MS. RANGANATHAN: Thank you for the opportunity today to comment on EPA's endangerment finding. My name is Shefali Ranganathan, and I'm the director of Education and Transportation Choices Coalition. We are a statewide group seeking to provide Washingtonians with more transportation alternatives, to save them money, to improve the environmental impact, as well as to improve public health.

Dozens before me have testified on the urgency of now and why we need to act, so I won't dwell on that. Instead I will focus my testimony on how smart policies and investments in transportation alternatives can help not just solve the climate challenge, but also save us money for millions of Americans as well as improve our public health.

Today, as I got on my bus to get here, my bus was standing room only. This is at one p.m. in the afternoon on a Thursday. The same is true of thousands of Washingtonians who get on a standing room only bus every morning to get to work or to school, yet every day the news headlines are dominated by stories of transit agencies looking to cut service because of budget deficits.

In Washington State, half of our greenhouse gas pollution is caused by transportation, and while we have made steps to cut emissions from that sector -- we have laws in place for clean cars and for clean fuels -- the simple fact is this: If we don't give people choices other than driving we're not going to meet our emission goals. Not everyone can afford to drive a Prius. Some people may choose not to own a car. For others, driving is simply not an option. For these people and for others, we must provide transportation choices that are not just clean cars and clean fuels.

Just a few hours ago, Governor Gregoire signed an executive order that essentially sets us on a path to reducing traffic congestion and reducing greenhouse gas emissions by providing more choices. This is a very important step forward, and I urge the

federal government to complement that leadership. We must provide more choices, because we truly believe that public transportation, walking and biking can play a key role in reducing climate emissions.

Ridership on transit is at an all time high. Last year 10.7 billion trips were taken on transit, yet federal and state investment in transit is woefully inadequate. And let's not forget that transit can be a source of green jobs. We must invest in this green infrastructure. For every billion that we invest in transit it's 30,000 green jobs. The importance of such an enduring investment cannot be underscored enough in these tough economic times.

Biking and walking, often ignored as a transportation mode, yet can contribute significantly towards reducing emissions and helping to solve a health crisis. We're in the middle of an obesity crisis. We must take action now.

I urge the EPA, as you consider regulating greenhouse gases emissions, to include in your framework an option for more transportation options. We owe this to our community, and this will help impact our nation's most vulnerable, the elderly, disabled children, communities of color, lower incomes, people who cannot afford to drive and need

choices. This will save us money. It will protect our health, and it will reduce greenhouse gas emissions. I thank you for this opportunity.

MS. KELLEY: Good afternoon. My name is Becky Kelley, and I'm speaking on behalf of the Washington Environmental Council. I'm here to give my organization's strong support to the EPA's proposed finding that greenhouse gases contribute to air pollution and endangers human health and welfare.

For over 40 years, Washington Environmental Council has worked to protect the things that Washingtonians care about, a clean and healthy environment, a strong and sustainable economy, and the well-being of our families. And those are just the things that will be harmed unless we find ways to repower our state and nation with clean energy and reduce our dependence on fossil fuels.

We have to look no further than outside this conference center to see what we stand to lose. It is breathtaking in its beauty and breathtaking to think that we will not pass it on to our children unless we change course and we do so quickly. I find it interesting that the wonky legal language of the Clean Air Act regarding endangerment findings is so apt for this challenge of climate change. We are, in

fact, in danger. In danger of losing our world-renowned irrigated agriculture and some of the world's most majestic and productive forests. In danger of losing our fisheries. In danger of losing the iconic glaciers of our mountains, and in danger of continuing to send 16 billion dollars a year out of Washington State to import fossil fuels instead of putting that money to work here at home.

And at a level far more alarming than any of that, we are in danger of losing some of the most vulnerable members of our society, children and elderly, ill and impoverished people to the health effects of climate change.

One question that has been, or will be, debated here today is what policy tools to use to deal with the problem of carbon pollution. I figure when the ship is on fire and taking on water fast, it's hardly the time to argue hose gauges at the expense of actually putting out the fire. It's time for all hands on deck, all tools in use. All three branches of government and all 306 million Americans have a role to play.

Our country's highest court has spoken. That's part of why we're here today. The executive has taken up the challenge with this proposed finding

and President Obama's advocacy for a clean energy future, and now Congress is hard at work deliberating perhaps the most significant piece of legislation in our country's history. Good. If we're lucky we can enjoy drinks on the deck of the repaired ship in the year 2050 and argue genially about whether we made all the right choices along the path to the renewed health and prosperity of our country and our planet.

Climate change is the defining challenge of my generation, and if we do not act quickly to reduce greenhouse gases, struggling to adapt to climate change will be the defining challenge of my daughter Zora's generation. I think about how my ear is tuned to my daughter's cry, because there's nothing more important to me in the world than loving her and keeping her safe. It's going to take a whole lot of that kind of cellular-level imperative that we have to protect our children in order to accomplish the hard work that we have ahead of us.

This endangerment finding is a critical step in building a future that we can be proud to leave to our children, and we urge you to move ahead quickly and with resolve. Thank you for the opportunity to comment.

MS. SCHEMKES: Good afternoon. Thank you

for holding this hearing. My name is Anastasia Schemkes, and I am a student organizer with the Sierra Student Coalition, as well as multiple other organizations. I am also a full-time student at the University of Washington. I am an environmental studies major, and I hope to pursue environmental law. I am here, along with many of my peers, to represent the voice of the younger generations in support of the EPA's findings.

I dedicate all of my free time to organizing for the environment. It's my passion. Too often does it feel as though my peers and I are fighting an uphill battle, and for what's right, protecting the environment that saves us, that sustains us.

When I heard the EPA state its findings that greenhouse gas emissions are harmful to human health I felt a new sense of empowerment. The EPA's endangerment findings demonstrate that, for the first time in a long time, the EPA is on our side. I will continue my fight to protect our environment, and I gladly continue my fight which rightfully belongs to each and every one of us. And I gladly do so alongside the EPA.

I urge the EPA to stand by these

endangerment findings and to take the immediate actions required to protect ourselves and our environment. And I promise I will be doing the same, and I know that my generation will be doing the same as well. Thank you again for this opportunity.

MS. HARGRAVES: Hello. My name is Hailey Hargraves, and I will be filling in for Trevor Miller, as you can see. I also represent Redmond High School, which is a high school on the east side located in Redmond, Washington.

And Redmond High School has developed many different programs towards working for environmental education, which is the subject I bring to you today. Redmond High School was actually the first climate ambassadors for your EPA program, but it is to raise awareness for youth. And we were also named as a school for the Region 10 EPA's Presidential Youth Environmental Award. And today I really want to focus on the fact that a lot of dealings with environment and awareness for it come from behaviors. And the major place where people learn behaviors and information that will help them in the future is in the schools, and how it is really important for students to learn helpful behaviors in the classroom, and things like composting in cafeterias and

everything.

And I believe that any and every strategy needs an education component, and it is much like a multiplier effect, where if you take one school and you institute those beliefs and practices in them, then they will go out and share it with their friends and then it just gets bigger and bigger and bigger.

And at Redmond High School we have saved over 17.5 tons of CO_2, and we believe that if our high school can do it, which is roughly 1,800 kids -- not everyone participates in these practices, but the majority do -- that if our high school can do it, we believe that every other high school and elementary school and junior high should be able to do it.

We believe that education is a vital component of any EPA recommendations for solving or reducing greenhouse gases, and that it would be really important, and that it would be very helpful if you would institute environmental aspects into your programs. Thank you.

MS. KRUGER: Thank you very much for taking the afternoon off school to come here and thank you to the panel for all of your remarks.

At this point we have actually -- for the speakers that registered for this session through 3:00

in the afternoon, I've now gone through everyone that's checked in. If there's anybody here who had signed up to speak this morning or up until this point and for some reason didn't register and hasn't been called, you can let the registration desk know.

What I'm going to do now, just to keep us moving forward, and given that we do still have a lot of people on the list, is to start calling some of the speakers who have registered for the next session. We'll go through to 3:00 before we take our break.

Let's see. David Wood. Fran Koehler from Greenwood-Phinney Chamber of Commerce. David Robison, Emerald City Vows, and Mollie Ruskin, Focus the Nation. I'll say a couple more names and then I'll have -- if Leslie March is here from the Sierra Club, or Wes McCart from the Washington Farm Bureau, or Scott Duncombe, also with Focus the Nation.

Well, Mr. Wood, if you would like to go ahead and offer your comments that would be lovely.

MR. WOOD: Thank you very much, Madam Chairman. I didn't come prepared today to speak. I was just inspired after being here and starting to listen to people. My name is David Wood. My former position was -- I'm retired now, but I was a deputy director for communications and electrical division

for the city of San Diego. I held the post for about 17 years. I spent 31 years working for the city mainly in finance and in operations. So I had a division of about 120 people, half of which were involved in electrical work.

And I want to talk to you about, today, street lighting and the need to set national standards to reduce energy use for street lighting and to reduce night sky pollution, and to reduce possibly heavy toxic metals that may be coming out of street lighting and going into the environment.

What I did for the city, I began my job in about 1976, but I didn't start working on street lighting until 1980 when we had -- it was shortly after Proposition 13 in California. They needed money badly and they were desperate for solutions. And so I proposed the conversion program to change everything we had on the street to low-pressure sodium, which is a technology that's been used in Europe for many years.

At the time we had incandescent lighting, mercury vapor lighting, and high-pressure sodium, a combination of those. The city was in the process of converting to high-pressure sodium. By the time I left there were about 40,000 street lights. And it

was my job to maintain them and, it turned out, to convert them as well. And we saved millions of dollars of doing so in energy. And from an energy bill of about $5 million when we began every year, the bill was reduced to a million. So there was about an 80 percent reduction. Admittedly, some of that energy was going into incandescents and mercury vapor, which are older technologies, but there's a lot of it still out there in this world.

I estimate that street lighting uses about 1 to 2 percent of the national energy use for electricity. I made this estimate years ago when I was working, but I think it's probably close if the research was done. Probably a lot more would be saved if you could get private sector people to do the same.

The city had an ordinance that required it of new commercial developments, and in San Diego if you drive down there you'll see the Fry's Electronics lot all in yellow lighting, which is about the color of this yellow light. And my time is up. Am I to quit?

MS. KRUGER: If you're done.

MR. WOOD: Can I keep going?

MS. KRUGER: You can take a few more minutes.

MR. WOOD: With the emerging need for nighttime energy use to charge vehicles, as we see coming, nighttime energy conservation becomes more critical. It's not without serious controversy, however. Even though it saves energy, it uses only glass, sodium, a small amount of argon gas to start it, and whatever else is in the end of the light to plug it in.

` Those are the positives. The color rendition is monochromatic versus the better color for other lighting. If it's monochromatic you only see shades of gray and yellow and that's it. Various shades of yellow and gray.

There's a lack of ability to control the lighting because it's such a large tube. It's more like an incandescent light or one of these spotlights versus a fluorescent light. So it makes it harder to control it because the best source of the light for control is a pinpoint of light. So the bigger the bulb the less control you have. So that becomes an issue.

Secondly, there are powerful forces against it: electric companies or utilities, lighting, bulb manufacturers, like GE and the like, Sylvania, as well as the engineering and architectural community, and

other sources of that sort. Possibly traffic engineers because they like to control light. But the size of the bulb expands with the amount of light it throws out, but when it throws out light it's probably the one single most efficient form of lighting on earth at this time. Maybe there's going to be new technologies, but so far that's it for street lighting. Maybe -- what's the other one -- diodes may replace that sometime. I don't know.

MS. KRUGER: I do need you to wrap up.

MR. WOOD: I'm going to wrap it up. I recommend a serious research that's needed by EPA, by eminent scientists who are objective, and I know there are some, possibly at Caltech in Pasadena and maybe University of Arizona and elsewhere. And that's the end of my story. Thank you so much for allowing me to speak.

MS. KRUGER: Thank you very much, Mr. Wood.

MR. McCART: Thank you very much. My name is Wes McCart. I'm president of the Stevens County Farm Bureau and climate committee chair for the Washington State Farm Bureau. I'm also a farmer and a biomathematician modeler.

I disagree with the endangerment finding and believe it should be rejected. Science refutes

human-caused global warming. Records show natural periods of increased temperature, such as in the 13th century when Greenland was actually green and the temperature was seven degrees warmer than it is today.

CO_2 levels had been much higher than they are presently. We are still in the range of natural variability in the last 10,000 years. Currently, out of approximately 385 parts per million, we have been as high as 600 parts per million in recent history and as high as 7,000 parts per million in climate history. CO_2 levels also follow warming and therefore cannot be the cause.

Climate change, global warming are the occurrence of natural climate variability. The Natural Resource Council 2001 report, entitled "Climate Change Science: An Analysis of Some Key Questions," states that there is considerable uncertainty in the current understanding of how climate system varies naturally and reacts to emissions of greenhouse gases. Current climate models cannot simulate known weather patterns and climate cycles, and are therefore highly unreliable in predicting future climate changes. Dr. Philip Mote, formerly of UW climate center, who oversaw all climate models, indicated the degree of accuracy and the level

of confidence in climate models was statistically uncertain.

Human health benefits from increased CO_2. In studies by Wang, et al., 2003, the health value of food, such as increased antioxidant levels, benefits from higher than current levels of concentrations of CO_2. Any reductions of CO_2 has a potential loss of agricultural production. We must maintain or increase our ability to produce food and fiber for a growing population. Not having food, i.e., starvation, is a real human health hazard, and if CO_2 is included in this endangerment finding it's a likely result that we will lose our food production.

The endangerment finding should be subject to the scientific principle. That principle being that it takes only one instance to disprove a theory. Thousands of scientists have disproved the human effect of current natural global warming cycle. This relegates the current list of six combined compounds to a level insignificant compared to the factor such as sun and the water vapor.

Instead of acknowledging this, the IPCC Fourth Assessment Report and the EPA, in this finding, has cherry-picked the science. IPCC stated that they did not consider elements such as water vapor, which

make up approximately 80 percent of the greenhouse gases. They erred, because in complex chaotic systems you cannot rule out such major components and still obtain valid findings.

In the same way, EPA has not used the complete compilation of relevant science, thus excluding valid data. Therefore, due to the extremely high uncertainty associated with the six listed greenhouse gases as causing global warming and a threat to human health and safety, I recommend EPA reverse this current endangerment finding, as well as cause or contribute finding, and provide for a finding of uncertainty, as required by the court in regards to the global warming climate change and the petitions asking for these emissions. Thank you.

MS. KRUGER: Thank you for your comments.

MS. KOEHLER: My name is Fran Koehler. I'm a physician, a wife and mother, and a member of Sustainable Greenwood, one of the many neighborhood groups that together are known as SCALOPS, Sustainable Communities All Over Puget Sound.

I became involved in the sustainability movement and in addressing the climate crisis specifically because I see a need for substantial change in the way we live in order to build a future

that I will be proud to pass along to my children. I appreciate the opportunity to speak here today, and I applaud the findings of the EPA concerning greenhouse gas emissions.

Clearly, the science supports these findings. In fact, the role of anthropogenic greenhouse gas emissions in driving global warming has been known for over 50 years, and has been abundantly clear since 1990 when the IPCC released its first report. Their reports have become increasingly ominous over the past two decades as the planet has warmed faster than almost anyone predicted.

The effects are already evident, even in the temperate climate of Washington State. The forests of the North Cascades are increasingly infested with pine bark beetles, which were previously held in check by the cold winters. Now large tracts of forest are visibly browning, and forest fires are becoming more frequent and severe as a result. The snow pack is also in decline, which will decrease not only our water supply for personal use and irrigation of crops, but will decrease our hydro power as well.

So why has it been so difficult for us to respond appropriately to this threat? I believe the reason for our slow and inconsistent response to the

climate crisis lies in our very nature. We are built to respond quickly and vigorously to an imminent threat. But this threat is different. The consequences of our actions become evident years, even decades, after the fact. This type of threat requires that we not rely on our usual instincts of preservation of self and family. We must rely instead on analytical thinking to see the far-reaching consequences of our actions.

In short, as President Obama stated in his inaugural address, it is time to restore science to its rightful place in our decision making. The first President Bush said, with regard to the climate crisis, that the American way of life is not negotiable, but it is the laws of chemistry and physics that are not negotiable. We must develop a sustainable way of life or our way of life cannot and will not be sustained. Thank you.

MS. KRUGER: I would like to thank all of our panelists, and if you can please leave your comments, thank you very much. Now, let's see here. We'll see who's here. Joel Batterman. Is Joel here? Mike Town from the Sierra Club and Redmond High School. Teresa Burrelsman. John Zyrkowski. Patty Glick from the National Wildlife Federation. Bonnie

Hemphill from Climate Solutions. Well, this is a good group.

I guess you can start as soon as you're ready, and it doesn't matter what order you want to go.

MR. TOWN: Hi. My name is Mike Town, and I'm a teacher at Redmond High School, and also a board member of the Cascade chapter of the Sierra Club. And one of my concerns that I would like to convey to the EPA is that one of the biggest greenhouse gas emitters that we have in local communities is local schools. And we've done a lot in terms of trying to reduce greenhouse gas emissions by dealing with the infrastructure of the school, but we haven't done a lot on a behavioral level?

And what we did at Redmond High School is we measured our greenhouse gas footprint and tried to reduce it, and at the end of this year we think we're going to be about 50 percent below Kyoto Protocol levels. And my recommendation to the EPA is that if we really want to deal with greenhouse gas emissions and reduction of greenhouse gas emissions, that one of the things we might consider is instituting a volunteer program for schools to measure their CO_2 production, and then also for the schools to try to

set a target for greenhouse gas emissions and an incentive program for those schools once they've reached a certain level.

And if we do that we can engage our student population in the auditing, the reporting. Our community would be also part, which we saw at Redmond High School in regards to coming up with ways of how we could reduce our CO_2 footprint as well. And dealing with behavioral challenges is probably, dollar by dollar, one of the cheapest ways that we can get the greatest value, long lasting, in greenhouse gas reductions, because behavioral changes are free, and the education component of schools to teach how to solve greenhouse gas emissions by -- you know, simple energy auditing is a real easy way for us to do it. But the lacking part is the incentive program which would give the opportunity for schools to set a target in order to meet that target.

Most communities across the United States, the local high school is the biggest single source point of greenhouse gas emissions. And so the opportunity is really ripe for us to utilize that opportunity to get a long lasting behavioral change in students which will last as they become adults and of course go on further.

So putting in some sort of incentive program and some way in which schools have to publicly report their greenhouse gas emissions and set a target, I think, would have a huge value added in terms of dealing with global climate change. And thank you very much for letting me talk today.

MS. KRUGER: Thank you.

MS. BURRELSMAN: Hello. My name is Teresa Burrelsman, and I am the Sustainable Programs Director at Callison, one of the largest architecture firms in the United States. I'm also a member of the Cascadia Green Building Council, which is the Northwest regional chapter of the United States Green Building Council, and I am here in support of the EPA endangerment finding. And thank you very much for the opportunity to speak.

At Cascadia we focus on four guiding signal issues that are critical for the prosperity of the Northwest region. One, climate change from global warming pollution; persistent toxic chemicals; habitat loss and species extinction; and global equity.

Pollution and climate change caused by excessive emissions of carbon and other greenhouse gases present a threat to all four of these signal issues. As a region, only 18 percent of greater Puget

Sound residents use public transit. This makes reducing our transportation emissions a critical aspect of responding to climate change and to global equity.

As a coastal ecosystem, we have much to lose if sea levels rise due to global warming. Businesses, homeowners, and recreational park users all will suffer from the movement of waterfront property. We are also unsure of what the rising summer temperatures will do to local flora and fauna.

As inhabitants of the built-in environment, we have all the technology that we need to create energy-efficient low-carbon buildings. Along with the added incentive of stimulating the economy by adding green jobs, the risks of inaction are too high not to take ction to fight global climate change. The benefits of reducing greenhouse gases are so many and varied that we will come out ahead regardless of whether one believes in climate change or not.

As a building designer, I work to create healthy buildings with fresh air, daylight and reduced energy needs. The EPA is the entity that should be regulating air quality and ensuring that we can all still opt to just open our windows if we want a breath of fresh air. Just as in buildings we provide air

filters, EPA regulations serve as the filter for the air we all share outside those buildings.

We should not leave the issue of climate change to Congress alone which has many other issues to deal with. Similar to the FDA, we should let the EPA regulate what it was created for, which is environmental protection, which is also human health protection. The environment should not be up for political debate but be based on science, just as new drug approvals are not voted upon in Congress.

Upon inclusion of carbon into pollutants regulated by the EPA, vehicle emission standards must be increased, along with energy and pollutant limits for industry and the building sector. Many developer clients of mine have said to me that they would not mind additional regulation. It will even the playing field. Increased regulation will finally reward industry leaders that are ahead of the carbon curve and require the stragglers to take action. Thank you.

MR. ZYRKOWSKI: Thank you. I'm John Zyrkowski, president of Lean Techniques, LLC. I'm also the author of the book "It's the Sun Not Your SUV" that proves that primarily natural forcings control global temperatures. Its forward was written by an IPCC reviewer. New science available since the

TSD research that was done for the EPA was completed demonstrates that most of the observed increases in global temperature since the mid 20th century is due to the observed increases in natural forcings.

To the contrary, model simulations of primarily anthropogenic forcings are incapable of projecting increases to 1998, as well as the declines we've seen and all experienced, including the increase in the snow pack to the current 2008 levels. In other words, the temperatures would have to rise 75 percent to get back up to 1998.

Additionally, greenhouse gases do not demonstrate a relationship to changes in cloud formation or albedo, which is the scientific term for reflectivity. Thus, greenhouse gases enhanced effects are not scientifically valid. There are six new scientific findings that use the IPCC's own data that support this conclusion, all ignored by the IPCC.

First, albedo change has been directly measured by six satellite and observatory sources. Three are direct measurements that corroborate global data sets for 1984 to 2004. This data proves that 12 times more solar energy entered the atmosphere from albedo change than can be absorbed from greenhouse

gases during the same period of time. Let me repeat that. Twelve times more energy came into the atmosphere from albedo change, as published in Science and Eos Magazine, and this is ignored by the IPCC.

Solar TSI primarily causes albedo change when offset by the impact of sun spots which create nuclei for higher clouds. That creates a little bit less -- more reflectivity, even though there's more holes in the lower clouds. Temperature is accurately forecast from solar-only models using dust and the southern oscillation index as part of the other piece of it and albedo. The actual temperatures can be forecast from a base of 1880 to 1940, and then forecast within plus or minus 10 percent of current temperatures, including the peak in 1998, and the big drop we've seen since 1998 to 2008. The same results can be realized from 1950, 1960, 1970, 1990, as well as the fit of the current set of data for the temperature history.

Contrarily, the IPCC model over forecasts today's temperatures by two times if you go back to the same periods. Go back to 1960. Prior to 1940 and '50, we didn't see much of greenhouse gases increasing. If you go back and set your model back to

that point, you had to have a doubling of the temperature during this period of time. And on top of it the IPCC models cannot forecast historic temperature decreases. The IPCC global warming theory enhanced effects have been demonstrated to be invalid because the albedo does not change with CO_2, and this may be in alignment with the new satellite data that was presented to the Senate environmental committee by Dr. Roy Spencer, formerly of the Marshall space flight center.

Solar-only models predict temperature being historic at one percent higher than they were in 2008. For most people in this room, you don't know, but the oceans have been climbing since 2006. They only increased one inch, and satellite data shows that the icecaps are about the same as they were in 1979. Most people don't want to report to you about 2008.

Finally, there's no endangerment. No regulations are needed. If you ignore this, first of all, you violate the public trust in your organization by ignoring the science, and secondly, there would be a further catastrophe upon the United States. More information is available at "It's the Sun Not Your SUV." Thank you very much.

MS. KRUGER: Thank you.

MS. GLICK: My name is Patty Glick. I am the senior global warming specialist at the National Wildlife Federation, and I definitely want to thank the EPA for the opportunity to comment on its proposed endangerment finding. As someone who has worked on the issue of climate change for nearly two decades and closely followed it, in fact even contributed to the now overwhelming and continually growing body of scientific evidence behind it, I'm not surprised at the determination, nor do I think are most Americans who are already experiencing more extreme weather events, higher sea levels, more intense wildfires.

Certainly, here in the Northwest, just accounting for the impacts to our economically and ecologically and culturally important salmon, which are going to be hit in literally every phase of their complex life cycles, climate change is an issue of great concern. As someone who is trained as an economist, I would have to say that I also would not be surprised if most industries ultimately do not embrace this with open arms.

From electric utilities and the auto industry, which actually we saw just this week the Obama Administration's announcement on efficiency in tailpipe standards, to the emerging businesses that

are really hoping to break ground on a clean energy economy, one of the most important signals that government can provide right now on this issue is regulatory certainty. And this is really a critical time. I think after years of idling in our gas-guzzling cars, we're finally getting our green light to have a cleaner energy future.

I definitely urge the EPA to be steadfast in implementing meaningful reductions. You're really a part of what has become a public movement to stop global warming. I'm sure, actually, that I'm speaking for my fellow colleagues who have been working on the issue of climate change for their careers that I, for one, am ready to jump for joy, really. I'm not going to do it, but I am absolutely ready.

With this determination, with the tailpipe standards, with a strong climate bill poised to pass the House of Representatives, this is an historic moment for our nation, and I for one am very, very pleased to be a part of it.

MS. HEMPHILL: Hi. My name is Bonnie Hemphill. I've been working in the climate movement for about a third of my life. I'm 23. Thank you for listening. Thank you just for being here. Seattle is sunny for your arrival. If anything can tell us the

climate is smiling on the day's proceedings, that should do it.

To be frank, I'm here because I and millions of my generation are something of a jaded generation. We are acutely aware that our planet's anthropogenic fever will change every single decision we make as we pursue life, liberty and happiness. We will pay for water shortages in the Southwest. We will pay for Gulf hurricanes. We will pay for resource wars, and if we don't hurry we will pay for Chinese wind turbines because they invested sooner.

But I am also here because I am a hopeful and pragmatic woman, and I speak for my generation in that too. I now know that American ingenuity runs much deeper than oil. Done right, cutting carbon will kick start the great economic watersheds in efficient and renewable energy, founded on careers based proudly right here in the U.S.

I now coordinate a network of some 350 Northwest business people making the case for clean energy. It's called Business Leaders for Climate Solutions. My generation wants to be the entrepreneurs who lead the world in this energy revolution, but it won't happen without smart policy now.

My generation was born in a world addicted to oil, but the buck stops here. We're eager to reinvent durable American prosperity. An endangerment finding shouldn't restructure capitalism, but EPA has the leverage to work with Congress to pass and enforce transformational climate and clean energy policy. You've got a generation of young muscle and smart brains behind you. That, and you've got our moral mandate to do it now. We'll be watching. Thank you.

MS. KRUGER: Thank you very much to the members of the panel. Please drop off your written presentations or your written remarks, if you're willing to, with our reporter. This has been a really great session this afternoon. What we're going to do now is take a short break. And I believe, let's see, we will reconvene at 3:20.

(Recess.)

MS. KRUGER: All right. Everybody, let's go ahead and get started if we can. I am going to call our next panel of commenters. Let's see. Doug Howell from the Sierra Club. And Maud Daudon from Seattle Northwest Securities. Kay Buccola from the Women of Washington. And Michael Ruby.

MR. HOWELL: I guess I'll start. My name is Doug Howell. I work for the Sierra Club here in

Seattle. I run our Coal Free Northwest campaign, and I would like to start off my three minutes with a bribe. So maybe you should pay attention. I'm trying to pay off EPA. You don't get one because you're from Washington. But if you look closely, this is the Washington State quarter.

MS. KRUGER: They're afraid to touch it.

MR. HOWELL: It has two of our icons on there, which you should get to know well because they may not be around. We have the Pacific Northwest salmon on there and one of our other major icons, Mount Rainier. And if you don't know, the Pacific Northwest salmon is one of the most threatened species from climate change.

And I used to work for the National Wildlife Federation. I had a challenge across the country. Find me a species in the United States, find me a species in the world, that suffers as many climate change impacts as Pacific Northwest salmon. There isn't one. It travels from the head waters up to 6,000 feet, hundreds of miles of river system, hundreds of miles of ocean, and we have now documented eight climate change impacts on salmon.

And in fact now, if you talk about what they call the red devils, these jumbo squid coming up

from the warm waters of Mexico and Southern California that have worked their way all the way up to Straits of Juan de Fuca, eating on the food chain that salmon rely upon, in some cases eating small salmon, that might be the ninth climate change impact. This is the canary in the coal mine, and it is severely under attack from climate change. So when you see that quarter, remember that icon of our salmon.

The other icon up there is Mount Rainier. The glaciers are receding. The ice caves, which have been a tourist icon for so long, are gone. And these are under assault. This is the core so much that represents culturally what we believe in and what we love, and it is under tremendous assault.

And I want to talk about Mount Rainier about one more aspect. We get rid of some of our fossil fuel problem, we will have massive co-benefits that come with it, and Mount Rainier is a really good example. We have a monster coal plant here in Washington State. For the millions of cars and trucks and farms and factories that we have, we have one plant that is 10 percent of our entire emissions portfolio. It is also the number one assault on Mount Rainier for haze. It is a leading source of mercury, a leading source of particulate.

If we lick this fossil fuel problem in Washington State, we will save our icons and we will save our Mount Rainier. So when you look at a quarter next time, think of that Washington State quarter and think of our icons as salmon and Mount Rainier, and it's your job to keep that more than just a quarter and keep it for the icon, the treasure that we love. You can keep those.

MS. DAUDON: They might not be able to keep those. Hi. I'm Maud Daudon, and I am president and CEO of a regional firm out here called Seattle Northwest Securities. It's a 40-year-old investment banking firm. It specializes in funding public projects for our cities, counties, states, local governments, school districts. And we have an energy finance team devoted just to looking at solutions for renewable energy issues and energy efficiency issues. So that's why I'm involved in this topic, along with just feeling very much like a human being. It's a very critical issue.

So I want to thank you for coming to the Northwest. I totally agree with the speaker about the beauty and bounty of the Pacific Northwest and the impacts that climate change is having out here, and I really appreciate the EPA taking the time to come to

the Northwest to experience and listen to all of us about our frustrations with not being able to act more swiftly to address these problems.

It's really important, I think, to support your findings that you are out here to hear about. I think both of them are critical right now, and it will provide the foundation for so many other important things to happen that need to happen. We notice, as we go about trying to finance projects, that price signals are not clear on the cost of climate change.

We think that having the findings that you've got in front of you today sets the platform for a national legislation that would start a cap and trade effort is critical, because that will set the price signals in place to enable us to move forward with a whole lot of tools, regionally and at the local level, that people are anxious for. It's not that people are sitting here resistant to wanting to do things, but there needs to be motivation from an economic sense and a market sense to make all of that happen. And this piece of work that you're here to do is an absolutely critical foundation for all of that to occur.

So I want to support your findings and thank you for coming here and appreciate your taking

the time.

MS. BUCCOLA: I am a mother, and I ask you in the name of our children to stop your regulatory nightmare, which endangers -- I have an endangerment finding as well. It endangers human liberty. Though your finding proposal declares the minor greenhouse gases to be the driver of climate change, CO_2 restrictions are completely unnecessary and will devastate our economy. Because so much is at stake, CO_2 and the other five gases must be considered innocent until proven guilty. CO_2 has never been proven to cause climate changes.

Computer modeling is not scientific proof. A connection is not causality. Correlation is not causality. The Vostok ice core samples in the IPCC showed us that there is indeed a correlation between CO_2 and warming. CO_2 follows warming. It is the effect, not the cause.

NASA has also found that the atmosphere of Mars is composed of 95 percent CO_2, and it is ineffective in retaining solar heat. So how can this gas, essential to all life on earth, be condemned?

The current IPCC report upon which you heavily rely ends the executive summary of its attribution chapter 9 saying, "Incomplete global data

sets and remaining model uncertainties still restrict understanding of changes in extremes and attribution of changes to causes." This sounds an awful like "we don't know." That's the conclusion of your IPCC.

So here is a petition signed by almost 32,000 American scientists, 9,000 of whom are Ph.D's. And this is -- this entire thing is full of fine print of names, carefully vetted names. And it reads, "We urge the United States government to reject the global warming agreement that was written in Kyoto, Japan and any other similar proposals. The proposed limits on greenhouse gases would harm the environment, hinder the advance of science and technology, and damage the health and welfare of mankind. There is no convincing scientific evidence that human release of carbon dioxide, methane or other greenhouse gases, is causing, or will in the foreseeable future, cause catastrophic heating of the earth's atmosphere and disruption of the earth's climate.

"Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the earth."

31,478 American scientists have signed this. So you cannot impose more Draconian regulations

on the suffering American people based on a false notion of scientific consensus. Thank you.

MS. KRUGER: Thank you very much for your comments.

MR. RUBY: My name is Mike Ruby. I reside in Seattle, Washington. In years past, as part of my doctoral studies, I made a detailed study of the standard provisions of the Clean Air Act and published papers on the subject. And I want to basically diverge significantly from my written testimony after having listened last night to some comments in the Waxman committee by some of the Republican members of the committee, and by hearing today the comments of the gentleman from the Farm Bureau and some of the other good people that followed him, and the comments that we've just heard.

I believe that there is a serious deficiency in the technical support document that the EPA has produced. And that is that it does need to address directly and head on the concerns of the climate deniers. It really does need to refute very specifically and very directly these comments. We know one thing for certain. This determination will be appealed to the courts.

You need to read carefully the dissent in

the Massachusetts case. You need to prepare yourself for the fact that there will be arguments presented to the courts that the exact language of the Clean Air Act is not a preventive principle language. It is couched in the present tense.

It was written in 1960 -- the Title II was adopted in 1967 at a time when no one, not Ed Muskie, not Leon Billings, not anyone who had a hand in writing it, could have imagined the situation we are in today. We need, very desperately, to put forward, in a manner that will be convincing to the courts, that the folks who will argue against proceeding ahead by the EPA have got it wrong.

I think that the important thing we need for you to do, though, is to proceed ahead. Although the House Resolution 2454, the Waxman-Markey bill, does in fact withdraw your authority under Title II to act on this matter that you propose to do, and even though the new standards for CAFE average fuel economy, the corporate average fuel economy, the CAFE standards, seem to make it unnecessary, that's not the case. Title II does very specific things that are much more effective than CAFE, and in fact you would have much more authority under Title II and if you would do so, and I would hope you would, carry this on

to Title I. You can do many things that are extremely effective because of the flexibility you have in the Clean Air Act.

So number one, I urge you to proceed ahead. Number two, I urge you to add significantly to your technical support document so that the courts will be very aware that you have considered all of the climate deniers' claims and you have dealt with them well.

MS. KRUGER: I would like to thank you very much for all of those comments. Ms. Buccola, if you would like to enter that document into the record, you can drop off both your written comments and that document, and it will go into the formal record for the hearing. Thank you.

Moving right along, Daniel Weise, is he here? Good. And David Robison from Emerald City Vows. And Mollie Ruskin, good, and Rebecca Wolfe, excellent.

MR. WEISE: Hello. I'm Daniel Weise. Thank you for allowing me to testify before you today. I'm here to speak in support of the proposed endangerment finding that greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations, and also in support of the proposed cause or contribute finding that new

motor vehicles and their engines spew greenhouse gases into the atmosphere. Duh.

What a pleasure and a relief that science is once again being used to set policy. Thank God that the nut cases are out of power. I just had to say that as response to certain things I've been hearing in the last hour. I'm trained as a scientist with a Ph.D from MIT, but it doesn't take a Ph.D to know that proposing to find that greenhouse gases created by our activities endanger us is like proposing to find that a clear sky is blue, that things fall when you drop them, or that the earth is round.

In my testimony today, I wish to emphasize that by the Technical Support Document's own admission, its proposed findings understate the risk to public health and welfare because section 7 through 14 of the TSD are, by design, not informed by section 6F relating to abrupt climate change. In simple English, none of the scientific studies and modeling that the TSD relies upon model or account for the abrupt climate change that could be brought about by the positive feedback groups in the climate system.

These are frightening changes with devastating consequences for human health and welfare,

whose probabilities of occurring are ignored in your analysis. This means that the EPA's proposed findings are conservative. Very conservative. Not only do I support your proposed findings, I urge you to put regulations into effect as soon as possible to reduce our greenhouse gas emissions.

You will note that I'm not testifying before you today as a member of any political, environmental or lobbying group, but that does not mean I'm not here to represent others. Indeed, I'm here to represent my son Nathan, age 16; my nephew Eli, age six; my nephew Benjamin, age two; and my niece Nina, age 17. I'm here to represent all those of the youngest generation who run the risk of the devastation caused by our actions or inactions. On their behalf, I beseech you, finalize these proposed findings, and then implement whatever is required and legally permissible to give them a future at least as promising as our past.

Thank you for finally addressing the biggest problem humanity has ever faced. Even as we meet here, methane is bubbling from the fine permafrost. Time is of the essence.

MS. KRUGER: Before the next speaker begins, I just want to take a quick moment to say

something. There are very strong opinions on both sides, on all sides of this issue, and it's actually extremely important to us at EPA that we hear from all the speakers, and that everyone has a fair chance to say their peace. And so I would like to encourage people to be very respectful of all of the speakers.

And I would also like to request that we don't interrupt the people that are testifying with applause. If there's a compelling need for people to applaud, and people feel strongly, I understand that, but let's save it until the end of the panel, because I think it's really important that we have a fair process here and that people are able to -- everyone is able to offer us their comments. So with that, please.

MS. WOLFE: Thank you. My name is Rebecca Wolfe. And I'm a long time teacher and now nearly full-time volunteer for environmental and social change with the Sierra Club, the United Nations Association, and the Alliance for Democracy. I want to thank you for considering our comments today. I trust that this event reflects the genuine concerns of the EPA and the Obama Administration.

With the law and the science now clearly in support of action on climate recovery, the need for

action is urgent. The Sierra Club's number one priority for the past two years has been global warming, and we have a major climate recovery campaign that includes an ambitious program for ensuring resilient habitats for wildlife and humans.

The UN association has eight Millennium Development Goals. Goal No. 7 is ensuring environmental sustainability. Many volunteers are working on these science-based programs for the survival of people and the planet. The EPA's proposed finding, pursuant to section 202(a) of the Clean Air Act, appropriately recognizes that the current concentrations of greenhouse gases are a public endangerment and must be curtailed.

Here are my suggestions. First, support education, legislation and regulations to end the burning of fossil fuels. This includes coal, natural gas and liquefied natural gas, which is imported by shipping, and is as bad for the atmosphere as is the burning of coal. Natural gas is 70 percent methane, which is even more toxic than CO_2, and is converted to CO_2, or at least it's a by-product. CO_2 is a by-product when it's burned.

Next, continue raising standards for vehicle and building efficiencies. Obama deserves

enormous credit for his actions on cleaner vehicles and improved standards. We need to add more incentives for building efficiencies as we've heard about today.

Finally, deforestation is responsible for about 30 percent, some estimate 35 percent, of the CO_2. It's 1.6 billion tons. 1.6 billion tons of the CO_2 that escapes into Earth's atmosphere. Right here in the Pacific Northwest are old-growth trees and mature forests which capture and store more CO_2 than any other place on the earth. They are the champions of carbon storage.

The vast amount of research that's been done by scientists at the universities of Oregon and Washington prove or proves that old-growth provides carbon storage that far surpasses that of young forests. Mature forests help maintain healthy watersheds necessary for wildlife and human life.

I urge the EPA and the Obama Administration to support an old-growth forest reserve to mitigate global warming impacts. This action can be done now. It requires no new revenue and it will help you at the EPA reach your goals of ensuring clean air and water. Thank you very much.

MS. RUSKIN: Hello. My name is Mollie

Ruskin, and I come to you today from the front lines of the youth climate movement. I'm a national organizer with an organization called Focus the Nation. We work to empower young people to accelerate the transition to a clean, just and prosperous energy future.

There are three things I would like to do today. I would like to share something with you, something I'd very much like to thank you for, and there's something I would like to ask of you. First of all, I hope you can see today that there are a great many young people who have come before you. I want you to know that this is just a small sampling. There are tens of thousands of more of us.

We've just come off a tremendous spring packed full of actions put on by truly inspiring young organizers. Organizers such as Jackie Trevino in south Texas who organized a meeting of three cities in the Rio Grande Valley to address the united effort to advance regional sustainability. Organizers such as Eric Kornack, who has been working tirelessly to ensure that sustainability efforts in Denver, Colorado are accessible to low income youth of color. And like Markese Bryant, who in Atlanta organized a powerhouse townhall to address green jobs.

For these young people, crucial to fighting climate change is the ability to create a carbon-free economy that is just and accessible for everyone. I know many groups have been hard at work these days, but I think we could all learn to use a thing or two from these dedicated folks.

It is because I have seen how much people of my generation care about the need for a clean and just transition off of dirty energy that I want to thank you. Your proposed findings on the hazards of automobile emissions sets a powerful precedent. In a time when there is a great pressure to move slowly, and with hesitation, the endangerment finding paves a way for a bold stride forward.

And finally, with regard to moving forward, I have my requests. I would like to ask the EPA to make a commitment to standing up for those who have and continue to carry the burden of this crisis on their backs. The current climate bill making its way through Congress seeks primarily free-market solutions to cap emissions, solutions that offer little protection for the indigenous groups, the working class, and the communities of color who have time and time again had the by-products of dirty energy dumped on their livelihoods. The National Environmental

Justice Committee of the EPA is a step in the right direction, but the ability for everyone to breathe clean air cannot be left on the sidelines.

I understand this is not traditionally within the purview of a regulatory body, but because the next step of this endangerment finding is regulation, I ask you to promise that in doing so you make no compromises for the freedom of the disenfranchised on behalf of the wealthy polluters. For Jackie, for Eric, for Markese and for the communities they've been working hard to empower, please do not let justice remain on the sidelines of your work. Thank you.

MR. ROBISON: Good afternoon. My name is David Robison, and first I want to thank you and the other youth activists who we've heard today. I'm humbled and thrilled that they are here, and I want to thank you for allowing all of us the opportunity to speak about this very important issue. And while I have a scientific background and actually worked as a high school intern in Dr. James Hansen's lab in New York, I'm here to speak on behalf of my son Michael who is four years old. And he's a very happy child, as you can see, and I want him to stay a happy person as he grows up and faces the future.

But there are times when I look at him and I worry. I worry about the usual parent issues like school and violence and driving. But I also worry that he'll be severely impacted by global climate change. Not enough water at the right times and places. Too much water at the wrong times and places. In southwest Washington there seem to be repeated 100-year floods that wash away homes and wash away salmon spawning grounds.

I worry that the beautiful and majestic orcas already under threat will be gone from Puget Sound. I worry about global food shortages and the disruptions and suffering that those will cause.

For these reasons and others, I ask you to do your part to change our nation's way of operating; for this is the time to be truly transformational, and please help to create a bright future for my son and his world. Thank you.

MS. KRUGER: Thank you very much to the panel. If you can give the recorder your written testimony that would be lovely as well. And we will move right along.

If Leslie March from the Sierra Club National Radiation Committee is here. Guillaume Mauger -- I have a feeling I didn't pronounce that

very well -- from the Citizen's Climate Lobby. Lia Slemons from the University of Washington. And Scott Duncombe from Focus the Nation.

MS. MARCH: Good afternoon. My name is Leslie March, and I'm an activist with the Sierra Club, and I recently moved to Hillsboro, Oregon, but I am a Northwest native. I want to support the EPA's finding that greenhouse gases are a threat to public health and the natural environment. I really applaud you for making this move.

For the last four years, I've been working in post-Katrina New Orleans. We know what it's like to be at ground zero for global warming. Stronger storms and sea level rise are a direct threat to people and property on the Gulf Coast. People in New Orleans get the causes of global warming, despite the contrary opinions of the Louisiana delegations.

Since Katrina we have created green jobs, developed local weatherization programs, and implemented neighborhood plans that aim for zero carbon footprints. These programs need a chance to grow and expand. While other states are stopping coal plants, Louisiana's energy producers continue to embrace coal. We need the EPA's help to stop these new plants before they add additional greenhouse gases

to fuel global warming. The EPA needs to step in before the damage is done. The regulations allow them to act when the science indicates there is a reasonable chance that pollution will occur.

Many times we've been told that creating jobs is more important than clean air. My family, like yours, depends on a strong economy, but we want clean jobs, not clean-up jobs. We need to move away from the old school polluters, like coal and nuclear plants, and develop clean, viable energy sources.

Whether we are living in Oregon, Washington or Louisiana, we all face challenges from global warming. We are depending on leadership from the Obama Administration and the EPA to get us through this planet crisis. Please take action. We will support you.

MS. SLEMONS: My name is Lia Slemons. I'm a Ph.D candidate in oceanography at the University of Washington, and while the details of climate feedbacks and carbon cycle feedbacks are an area of dynamic research, there's a fundamental consensus that exists that climate change is real, it's being caused by humans, and it poses great danger. I'm not going to testify today about the science of climate change in two minutes. I want to testify as a citizen of

Washington and a citizen of my home state Alaska, and speak to how these choices affect the future and how they affect both of my homes.

Susan Solomon of NOAA and her colleagues recently published a paper that demonstrated the choices we make today have a critical impact for 50 years down the road. Carbon dioxide is a long-lived greenhouse gas that will stay in the atmosphere on the order of decades to hundreds of years, and the ocean has a long memory of what warming we see in the next decade will stay around for longer, and the choices we make today will have a greater impact for the next generation.

In Washington State I've planned hikes where we've worked around where glaciers used to be and changed our route. Climate change is real and happening now and will have big impacts in the watershed that this state relies on, my current home.

My home state, Alaska, has seen dramatic impacts. The North Coast, the U.S.G.S. has recently studied the last 40 years of coastal erosion along the Beaufort Sea from Prudhoe Bay to Barrow, Alaska, and noted that in the last 40 years the rate of coastal erosion has doubled, and this has meant villages have had to relocate, that we're going to continue to make

these contingency plans much, much faster than we are prepared to. And that sea level -- that coastal erosion is accelerated by the loss of sea ice in the Arctic.

Because these changes are on a curve that's steepening, I'm very happy that the EPA is taking on the role of a regulator. I think regulation is a good way to approach this problem, and I urge you to continue and strengthen the work you're doing. Thank you.

MR. MAUGER: Hi. First of all, congratulations on successfully pronouncing my name. There's all sorts of extra consonants in there that nobody would know and miss. And also I would like to thank you all for being here taking this so seriously. I'm sure this is making for a very long day for you all, and I appreciate that you and the EPA is taking this issue so seriously.

My name is Guillaume Mauger and my background is in climate science. I've been researching climate change for the past seven years. But I'm here more as -- more than as a climate scientist. As a concerned citizen, and as a member of Citizens Climate Lobby. We're an advocacy group that lobbies for action on climate change, exactly what

we're here to talk about today.

And one of the funny things about being here today and watching today's proceedings as a climate scientist is that you don't need my expertise. You don't need me to tell you anything about climate change to come to the present decision and to decide what to do about it. The science that we're talking about and that is behind the endangerment finding is the science of decades past. It's well established. And to be specific, we know that human emissions of greenhouse gases are changing the climate. That is something that you can actually prove as a fact. And I won't go into the details, but there's no legitimate debate about that.

And so I think the reason I take the time to make that point, even though you already obviously know about that, is that what that tells us, then, is that the question is no longer if we are changing the climate, but how much and how much of a risk we are willing to take in doing so, which is why I'm here to talk to you.

I came here as a concerned citizen, not as a scientist. The question is not about the science, it's about the policy. It's about how urgent our situation is and how much concern we have for our

future. So specifically it's about the policy. We know the costs -- we have estimates of the costs of climate change, the costs that result in our emissions or our over dependence on fossil fuels, and we know that they outweigh the benefits that we currently reap year to year from using those fossil fuels.

It's about urgency. There are many sources that either say we have crossed the line beyond a safe concentration of greenhouse gas in the atmosphere or we are rapidly approaching that line. We don't have much time to act.

And finally it's about concern for our future. We only have one Earth, and that may sound trite, but I think we can all agree on the fact that to bank our future on something that we could otherwise invest a small fraction of next year's profits in in order to avoid would be a foolish decision. And so that's why I'm here today and that's why I'm glad to see what you're doing, and I appreciate your work. So thank you.

MR. DUNCOMBE: Hi. My name is Scott Duncombe, and I'm with an organization called Focus the Nation based in Portland, Oregon, and we work with young people to empower them to create a just and clean energy future. This April we worked with young

people to organize about 100 townhalls across the country in about 40 states, with about 72 members of Congress.

And these young people were there to talk to members of Congress about the clean energy future and to get them to realize the opportunities of the clean energy future. And so that word "opportunities," that was what was being discussed. And while it may kind of seem -- there's a little cognitive dissonance. I really think opportunity is the way to describe the finding on endangerment that you are going to make, that even though endangerment wouldn't seem like it would go well with opportunity, I think really it is an opportunity. And it's a word I'm going to say over and over again in the next two minutes because it's one I really think needs to stick in your minds when you think about the decision.

When I say opportunity I'm not just referring to the opportunity to acknowledge the widely held fact that greenhouse gases are endangering the lives of the U.S. population, and that it's a clear and present danger that needs immediate action. I'm talking about the opportunity to focus the ingenuity and genius of the American people on this vital question. I'm talking about the opportunity to build

the energy future that we all dream of and we all think of that's free of carbon and that's free of injustice.

That opportunity, that hope, is what powers youth climate activists who are outside today in the square, who are in this room on a beautiful day, and who organized around the country 100 townhalls to talk about this vital question. Organizers from Maine to California, from Portland to Palm Beach. From the rust belt to the beltway worked, and they worked not because of the danger of climate change, but because in that danger there is an opportunity to seize and to build a future that they can be proud of.

They're going to keep working on that future. They're going to organize, and they're going to bike and they're going to invent, and they're going to protest, and they're going to keep working their butts off until that opportunity is realized. But they need your help. They need the U.S. government and they need the EPA to own up to the truth that most of us have come around to. They need that help.

So I wanted to urge you to -- I wanted to implore you, please, look at the facts. The fact that you've asked the question at all is a huge change, and it's one that all of us out there working are

incredibly grateful for. But take the next step. Do not waste that answer. Realize the opportunities of the clean energy future and help move us towards a place that we can all be proud of.

MS. KRUGER: Thank you very much for all of your comments. Let see. We'll keep moving right along here. Justin Rolfe-Redding from the Seattle Rainforest Action Group. Jennifer Jones from the Sierra Club. Dave Peeler from Dave Peeler Consulting, and Brent Foster.

And I'd also like to take an opportunity to say, I don't know if the people out in the hall can hear, but there's sort of a dull rumble that comes from the acoustics in this room when folks are talking in the back. So if people can be quiet it will make it easier for everyone to hear. I figure if I'm straining to hear sometimes, then I figure it must be tough for the people sitting at the back of the room.

You can speak in any order, and go ahead and start.

MR. ROLFE-REDDING: Hello. My name is Justin Rolfe-Redding, and I'm a graduate student and instructor at the University of Washington, and I just want to thank you all for coming here and taking the time to listen to us.

I want to start by just my experiences as an instructor of undergraduates. I'm also sort of on the front lines of seeing what young people in our society think and feel about issues like climate change. I've instructed a course on public speaking in which students are given the opportunity to select topics and prepare and present public speeches on political issues of concern to them.

And based on the admittedly small sample, I can certainly say that the issue of climate change, one, it's something about which many of them care very deeply, but perhaps more significant for today's discussion is an issue on which there's near unanimity in terms of the importance and the reality of the effects of climate change.

The debate is over about whether greenhouse gases are deleterious to human health for the young people of our country. That isn't a question that they're asking any more. And I think that's another example of where the young are far ahead of the leaders of our nation in coming to that conclusion.

And so I just wanted to share that perspective in terms of the state of consciousness I think of many in our country, that we are past the point of debating whether this is an issue that needs

to be addressed and whether it is harmful to our health, and moving on to the stage, as these students have been, giving impassioned speeches in favor of solutions that will work for our society and protect us from these harms.

On the question of solutions, obviously the next step to the rulemaking, once a finding is reached, is the question of policy suggestions. And I think there are better and worse approaches that the EPA and administration can take on that road. Most notably, I think questions of global equity oftentimes fail to be addressed in this debate because we're so focused on the absolute urgency and the need for environmental protection at all costs as a bottom line issue, as it should be, but I think that perspective oftentimes fails to appreciate the fact this is a question that not all humans started and not all humans are equally contributing to.

Not just that it isn't human caused, but we in the first world, and particularly in the United States -- and we're saying 25 percent of world emissions -- we are the ones that have created this problem. And many of the developing nations around the world, if our policy solutions are not appropriately engineered, actually run the risk of

bearing the brunt of the harm.

Carbon trading credits, if not carefully done, risk exporting the problems of climate change that we have created to the third world through solutions that encourage reckless and abusive spending in nations that have little ability to control this influx of carbon credit money on their economies, forcing them to do all sorts of policies that they may not be prepared to do.

So I encourage you to consider those additional concerns and the responsibilities that we bear when you craft a solution to this problem. Thank you.

MR. FOSTER: Good afternoon. My name is Brent Foster. I'm special counsel for the Oregon Attorney General. I'm here to provide comments on behalf of the state of Oregon. We appreciate the opportunity to be here today. This is a new day for U.S. climate policy, and Oregon welcomes it. We are here to express our strong support for the proposed rule finding that the primary greenhouse gases from vehicles endanger public health and welfare. This is a point we've been arguing in partner states, such as Massachusetts, all the way to the U.S. Supreme Court, and we believe this finding is clearly supported both

by section 202 of the Clean Air Act, as well as the scientific reality that the impacts of greenhouse gases are both imminent and serious in how they affect human health.

We welcome the return of both science and law to U.S. climate policy, and appreciate the speed at which both President Obama and EPA Administrator Jackson have taken the lead in proposing the rule that's been proposed today. The draft rule gives us hope that the United States is entering a new and serious stage of controlling global warming, and is ready to play the part not just of a national leader but of a global one.

Many states like Oregon have already passed renewable energy portfolio standards, and are involved in a host of other efforts to reduce greenhouse gas emissions, increase efficiency, and reduce our dependence on foreign fossil fuels. We hope that a more active role by the EPA will be an important addition to these efforts.

We are truly at a crossroads that includes both great opportunities for action and tremendous consequences of inaction. We have the chance to embrace energy efficiency, conservation, and energy independence over denial and blame. We have the

opportunity to invest in renewables and related jobs that come along with them instead of a future tied to foreign fossil fuels, global insecurity and international conflicts. We have the capacity to respond not just to the environmental harms of global warming but to the social justice inequities that will certainly hit the world's poor the hardest.

Future generations are no doubt going to judge us based on how we respond to this great crisis we call global warming, and history I think will cede to the EPA's efforts today and the proposed action as an important first step of what will certainly be a sustained and focused journey.

We appreciate you taking our comments into consideration and for taking the steps that you have today.

MR. PEELER: Thank you. My name is Dave Peeler. I'm a native Seattleite who has worked on environmental issues in the Northwest for over 30 years, first for the State of Washington and now as an independent consultant and as a citizen activist.

First, let me say thank you to the EPA for holding this hearing in Seattle on the West Coast of our country where some of the most damaging impacts from climate change are likely to occur, and where the

states and many local governments, tribes, universities, businesses and nongovernmental organizations are really at the forefront of the science of global warming, predicting and measuring its advancement and its impacts, taking action to reduce greenhouse gas emissions, and planning for adaptations already to mitigate the very significant effects that we already know will occur.

You have already heard today from many eloquent speakers on these issues, and I'm sure you're going to hear from many more, and I applaud you for your patience. The question before you today is a relatively simple one. Does the available scientific information support the proposed findings that greenhouse gases in the atmosphere threaten public health and welfare, and that emissions from new vehicles contribute to the atmospheric levels of greenhouse gases.

It is not about whether we are happy with that scientific information and what it tells us, nor about what it may cost us to try to reduce the buildup of greenhouse gases and the adverse impacts of climate change, or about whether we believe others should step up to the plate first or with more vigor. Nor will the decision in itself of course result in all the

changes that some folks have described here today. Those will be subjects of future decision making.

But it is extremely gratifying that the current administration has made its proposed findings based on the science that is currently and readily available and, for that matter, has been available for many years.

There is no longer any credible scientific debate that global warming is real, that it is caused primarily by human activities, including emissions of greenhouse gases from power plants, motor vehicles and other sources, and that it will have very serious and harmful direct effect on human health and welfare, on fish and wildlife, and on the ecosystems that all life depends on for its survival.

Some people still believe that the scientists and their supporters are overstating the degree of climate change that is likely to occur due to the buildup of greenhouse gases or that the effects themselves might be exaggerated. However, when one talks directly with the scientists who have built the climate models and who have written the reports for the IPCC, as I have, there is an inescapable fact that comes out.

More recent information on the rate of

climate change indicates that the models are actually too conservative in their projections. That the actual effects are occurring more rapidly and are likely to be much worse than the mid report scenarios that the scientists relied upon in their IPCC reports. The risk is therefore much greater and the impacts likely to be much more damaging than previously estimated.

For example, considering the recent information on climate change on the oceans, we know that the oceans have stored a lot of CO_2, but they're reaching their tipping point at this point, and we know that this is increasing and that shortly we will see, likely to see, very adverse and perhaps catastrophic changes to crustaceans in the world's oceans which will therefore affect, worldwide, the ecosystems of the oceans and all life that depends on those, including some of those you've heard about today.

In summary, the proposed findings are correct, and I urge you to finalize them as proposed. In order to be effective, our responses to climate change must be immediate and far reaching, but by shifting to clean energy and making a firm commitment to cap global warming pollution, we will create

millions of jobs, increase economic prosperity, reduce our dependence on coal and foreign oil while attacking the biggest challenge of our time.

Some people may ask can we do this. Is it within our ability, and do we have the will to do it. And I can only say to them a quote from a very famous American: Yes, we can.

MS. JONES: Hello. I would like to thank you for the opportunity to testify today. My name is Jennifer Jones. I'm 19 years old and I live in Portland, Oregon. I was born and raised there. I'm also a sophomore at American University in Washington D.C.

I would first like to thank the EPA for finding greenhouse gases to be an endangerment to the public health and welfare, and recognizing science. It's great that the government is recognizing science again, and I hope they continue to do so.

My whole life I have considered the environment to be my number one issue. As a child, I spent summers in the Northwest camping with my family. I've been to the beaches. I've been to the mountains and the deserts, and all within a couple of hours from my home. And camping as a child really showed me the importance of the environment and the importance of

protecting the environment and showed me how the amazing the Northwest is.

Because of my want to help the environment, I have decided that I will choose a career path in environmental policy. I'm double majoring in environmental science and political science, and I plan on spending the rest of my life dealing with environmental issues and protecting the environment through science and through government.

Now that the EPA recognizes that greenhouse gases are a danger to our planet, it is time to regulate greenhouse gases. I urge the EPA to also recognize the immense danger that the coal industry poses to our nation and our world. Coal accounts for 30 percent of the carbon dioxide emissions in the United States. It would be ignoring the facts to ignore the issues associated with coal. From mining to burning, coal endangers the public health and welfare of the citizens of our planet and the citizens of our nation.

Mountaintop removal is an especially huge problem in the states surrounding Washington, D.C. where I go to school. Mountaintop removal destroys habitats. It destroys landscapes. It endangers the health and welfare of millions of citizens of the

United States, especially those living downstream from mountaintop removal sites. It destroys forests, especially forests that naturally mitigate the increasing carbon dioxide by absorbing carbon dioxide.

Burning coal is also a huge problem. Oregon gets 40 percent of the energy that we receive from coal. That equals billions of tons of carbon dioxide that are pumped into the atmosphere through coal-fired power plants.

I know that the EPA has the ability to regulate carbon dioxide through the coal industry. And I know that the EPA now has an inherent responsibility to regulate the coal industry after the endangerment finding.

Thank you for the opportunity to testify, and I urge you, the EPA, to especially consider the impact of the coal industry when creating regulations on greenhouse gases. Thank you.

MS. KRUGER: Thank you to everyone on the panel. If you can drop off copies of your -- if you're able to drop off copies of your written remarks, written copies of your oral remarks, that would actually be very helpful.

We're just going to keep going and going. Let's see. We've got Joel Batterman, I believe. Is

he here now? And Benjamin Greuel. And Bob Aegerter of the Mt. Baker Group of the Sierra Club. Dorothea Reinert. And Elizabeth Kaplan.

MR. BATTERMAN: My name is Joel Batterman. I grew up in Michigan, and I'm a student at Reed College in Portland, Oregon where I'm a member of the Cascade Climate Network, an organization of Northwest youth working to stop global warming and build a sustainable, just, and prosperous future for all.

I applaud the EPA's finding that carbon dioxide pollution endangers human welfare. Of course this decision is only helpful if backed by appropriate and expedient action. Powerful voices are calling for a balanced, more moderate, approach to global warming, one that does not hinder economic competitiveness. These voices are persistent, influential and absolutely wrong. They might as well tell someone whose house is on fire to give a moderate alarm or exhort a balanced rescue from the parents of a drowning child. Our home is on fire. Future generations are in danger, and there can be no balance to strike between the profits of a few and the well-being of the whole.

It's true that all our lives are entangled with the fossil fuel economy. In all regions of the

country, however, we have everything to gain from disentangling ourselves as quickly as possible. Oregonians are not enriched by exchanging their earnings for oil from Dubai, which has used our gas money to build an indoor ski slope, even as our Cascade snow pack melts away. My home state's auto industry is not better off for 20 years of massive resistance to improved fuel efficiency.

I know there are places still bound in total dependence on fossil fuel extraction for their people's livelihood. My grandfather was a coal miner in southern Indiana. My mother remembers how he used to come home from the day shift black with coal dust. The last few years of his life he often couldn't lie down to sleep because of what had gotten into his lungs. The area behind his house was mined for the second time 50 years ago. Afterwards, my grandfather helped reforest it, but a few years ago after he had passed away they went back and dug it up again, going after a deeper seam. They went back a third time. The area remains locked in an extraction economy.

Our nation is still chasing commodities that destroy our health and devastate the planet. It's a testimony only to our failure of imagination and moral vision. It's clear that our old way of

doing things no longer works, and it's time to know the truly healthy economy with clean, green employment for all.

Strong action to cut carbon and stop global climate change is also the best way of building the future my generation wants, but we have no time to lose. When it comes to stopping global warming, time isn't running out. Time has run out. We need to start doing the right things right now. Thanks very much.

MS. KRUGER: If we could just applaud sort of quietly, that would be good. I'm trying to keep a relatively -- enough of a formal atmosphere for this hearing. Please, sir.

MR. AEGERTER: Good afternoon, and thank you. My name is Bob Aegerter. I'm a retired architect and environmental planner living in Bellingham, Washington. I'm here today because I have three grandchildren, 21, 11 and 18 months old. My grandfather taught me to leave my room and my campsite cleaner than I found it and my world a better place to live in than when I was born.

I first became aware of the potential of man-caused global warming in 1972. I wish I had followed the evolution of the science more closely and

been aware that in 1986 we were crossing a threshold that would make it much more difficult to correct the situation. Dr. James E. Hansen, the Environmental Protection Agency, and President Obama are right on the science.

Make no doubt about it. The debate over the causes of global warming is settled. Decades of research by thousands of scientists all over the world have provided overwhelming evidence linking air pollutants like carbon dioxide to climate change. It is clear that climate change threatens public health and welfare.

Global warming pollution concentrations in our atmosphere are already far outside historical limits and global temperatures are rising fast. It is far, far past the time to act. Together, emissions from new motor vehicles engines and coal-fired power plants are the largest contributors to global warming pollution. In fact, they make up about 80 percent of all U.S. emissions. Global warming threatens us all.

Global warming is melting glaciers and ice caps. Here in the Pacific Northwest our water supplies are threatened. Sea level rise threatens to swamp many coastal areas by the end of the century. Here in the Pacific Northwest our rail transportation

systems are threatened. Forest fires and insect outbreaks are increasing across the West destroying forests that protect wildlife and provide clean water and air. If the old growth forests are destroyed, the carbon sequestered in them will also be released, and that is a significant threat that has not been considered. Millions of species are threatened with extinction.

But my principal concern is our own species. Strife and war will ravage us all as natural resources become scarce and unaffordable. The polar bears are not the only ones on thin ice.

The Environmental Protection Agency and President Obama are right on the law. The Clean Air Act provides EPA with broad authority to address pollutants that affect climate, and the Supreme Court has upheld the authority. You can act as soon as it concludes that pollution that may reasonably be anticipated to endanger public health or welfare. You do not have to wait for the damage to be done.

We need to see the big picture of a new economy and a safe climate. The Clean Air Act requires EPA to develop a network of common sense rules that will address global warming pollution, and you must do so now. To begin to realize the big

picture, the Environmental Protection Agency should swiftly finalize its findings and its determination that new motor vehicles and new motor vehicle engines contribute to global warming pollution. There is a lot to be done and no time to waste. Our grandchildren deserve a safe future, one powered by clean energy and that doesn't worsen global warming. Thank you.

MS. KAPLAN: Good afternoon. My name is Elizabeth Kaplan, and I'm here today as a concerned private citizen. I've recently moved to Portland, Oregon after living for 50 years in California. During my years in California, I became very interested in the environment and ecology in general, long before phrases like "climate change" or "global warming" had come into our vocabulary. For many years I, like millions of other citizens, have taken to heart the injunction to think globally, act locally.

In addition to engaging in truly local acts, such as recycling, composting and raising organic produce, I have tried to think globally by buying a Prius the first year it was offered for sale in the United States, and by convincing four friends to become Prius owners as well.

But individuals can't do it alone, and my

reason for wanting to speak today is the recognition that although individuals can do their bit, we can do little individually when the concern is global climate change. In matters of the environment, even states, including those as large as California, can do little on their own except by innovating and experimenting and trying to influence local national policy, as California has just succeeded in doing with its fuel emission standards.

Indeed, since we're now dealing with the worldwide phenomenon of climate change, not even countries or whole regions can solve the problem on their own. But just as states can show the rest of the United States the way, the United States can do the same and help move the rest of the world towards safety and global health, both by example and by treaty. The EPA's designation of carbon dioxide and other greenhouse gases as dangerous to public health is an important beginning. The next steps must be taken at the national and international levels.

My reason for coming today was to remind you that local citizens, millions and millions and millions of us, care and we want action. Even if, individually, we do not have voices as loud as others may have, we have waited a very long time for action.

In fact, I feel as though I have been waiting my whole adult life for action. We cannot afford to wait any longer. Thank you.

MS. REINERT: Hello. My name is Thea Reinert. I would like to thank you for coming out to Seattle today. I'm from a group called the Sierra Student Coalition which works on bringing sustainability to people's everyday lives. I am testifying in support of the agency's findings.

My generation knows that carbon dioxide is harmful. I have friends my age who have had skin cancer. I personally have asthma. This is not a matter of debate for us. We need to limit our emissions now. The world is going to decide on emissions targets at the end of this year in Copenhagen. If the United States can't demonstrate a capacity to change our emissions, then the world will fail. We are a major polluter.

My generation isn't going to wait until it's convenient or comfortable for every oil baron to stop taking their 34th Hummer out for a drive down the block. Please continue to take action on climate change.

MR. GREUEL: Hi. My name is Ben Greuel with the Sierra Club. I apologize for my tardiness.

Throughout my life I've been doomed to have an uncanny ability to go to the bathroom at exactly the wrong time. Today was no change in that trend.

Unlike my colleague Doug Howell, I don't have any loose change in my pocket, so no worries. And I would like to thank the EPA for both allowing me to speak today and, for the first time since my political awakening, taking action toward regulating greenhouse gas emissions.

As previously mentioned, I'm a community organizer for the Sierra Club here in the Pacific Northwest. I'm an avid hunter, an angler, outdoor recreationist. I'm proud to live in a state that so immensely values its iconic national treasures, treasures that include the glaciers of the North Cascades, the wild valleys of the Olympics, our ancient old-growth forests, and our numerous pristine free-flowing rivers with names like the Hoh, the Stillaguamish and Soleduck.

Global climate change affects the long-term health of these special places. Less snow in the mountains means less water in our rivers, rivers that are refugia for our iconic salmon and steelhead, and that allow our region's agricultural economy to thrive.

Global climate change will also mean a longer and increasingly intense fire season. These longer and more intense fires have the potential to threaten the native ecology and human communities. We need to take action now to regulate these emissions, or our special natural landscapes that make this region so unique will be threatened. I want my children and grandchildren to experience the awe that goes with seeing a stream teeming with native wild salmon.

Here in Washington State, TransAlta coal plant is the single largest global warming polluter. Last year TransAlta spewed out 9 million metric tons of carbon dioxide, which is approximately one-tenth of the state total greenhouse gas emissions. In addition, a significant portion of the Washington State's coal power comes from Colstrip power plant in Montana. On the solutions end, here in the Pacific Northwest, we have large stakes of old growth forest that hold immense amounts of carbon in their massive trunks and limbs. I urge the EPA and the administration to consider taking action towards giving these aging forests permanent protection as carbon storage tanks. We no longer can afford releasing their sequestered carbon into the

atmosphere.

The EPA and President Obama are right on the law. The Clean Air Act provides EPA with broad authority to address pollutants that affect climate. We need to see the big picture of a new economy and a safe, clean climate. EPA and President Obama are right on their science and their efforts to regulate greenhouse gas emissions. We are dangerously balancing on a fragile, thin ledge. The time is now for us to tackle global climate change, and I applaud the EPA's recent endangerment findings and urge the administration to regulate greenhouse gas emissions as a threat to human health. We owe it to our future generations to take action now or forever be asked why we were unable or unwilling. Thank you very much.

MS. KRUGER: Thank you for those remarks. Thank you to the entire panel. We very much appreciate it. And you're free to go, and if you want to give a copy of your oral remarks to the reporter, that would be great.

Let's see. At this point, I believe that I've called -- I think that I've called everybody that was registered to speak through 5:00. But I'm not positive about that. So if there is anybody here who was registered to speak earlier in the day and has

just arrived, or that I've missed and you want to wave your hand, then I'll invite you to come up now.

Great. Is there anyone else in that category? I would also offer an invitation, if there's anyone here who feels moved to speak but didn't register, that's also allowable.

Sir, what I would like to do is ask the speakers to please state your name and your organization, or if you're speaking as a concerned citizen, so that we have that in the record, and there's three minutes with the timer, and please, we're very interested in your comments.

MR. HERMAN: Thank you for having me here. My name is Carl Herman. I'm with the Sierra Student Coalition at the University of Washington, and I'll keep my comments short.

There are a lot of people talking about speaking for their children and speaking for the future generations, and I would just like to emphasize that it's not just the young people that we're speaking for. It's not just young people who are not here right now. It's the people in other countries who will bear disproportionately the burden of the effects of climate change.

It's the future victims of wars over water

as it becomes more scarce in some areas, and it's also the future victims of floods and hurricanes. It's the future victims of malaria, as the territory of mosquitos grows, and it's also -- we are speaking for animals who don't have a voice, the countless species that are going extinct at an unprecedented rate, and I encourage you to remember that although there are many people in this room right now, there are countless other people and countless other animals that are not here, and that are begging you to continue with the action that you have initiated recently, and take strong action against climate change.

MR. WELLS: I was given the impression in the last few years that the EPA had been closed down. I'm encouraged and thrilled to see you here today. My name is Cliff Wells. I'm a veteran of the Cold War. I think many of us are. I served in the military, but I also grew up downwind from the Hanford Nuclear Reservation. I have seen -- I'm reading off of revised notes, so I'm going to be a little confused.

I've seen much that convinces me that global climate change is real, and we have to do something about it. We are too late on some of it, but that doesn't let us off the hook. I'm very concerned, though, over our approach, our

reconsideration and people pushing for nuclear power.

As I said, I grew up downwind from the Hanford Nuclear Reservation. They released stuff into the air that affected our milk when I was a kid. My older sister has a thyroid problem that I don't know what else would have caused it, and for some reason I don't have any problems. My two parents died from three cancers. And I don't remember having much cancer in my life, much less our family before. I am not going to blame all of it on that, but they were clean living, nonsmoking parents. I'm convinced that even though they said nuclear power was going to be too cheap to meter when they started selling to us back in my youth, that we're learning now, and it's clear to us now that we cannot afford it. We can't even afford to clean up after it.

I wish that we would look at how the other countries in the world are looking at clean, solar and other forms of power and catch up with them on that. We could be the leaders on this. But we have to understand nuclear is too expensive. We can't do it any more. Thank you.

MR. WEST: Good afternoon. I'm delighted to be here. My name is Fred West. I direct a group called the Seattle Peace Chorus. I'm a choir director

and composer.

Years ago there was an oil spill, before the VALDEZ oil spill, at Grays Harbor. And I and many others went down to do a clean-up, and I will never forget the sight of hundreds of birds that were drenched in oil. The volunteers were carefully scrubbing these little birds. There were greaves and loons and the most gorgeous things you've ever imagined, and they had them in these little holding pens, and people were walking around these birds like they were newborn infants.

I was so struck by the care that humans do demonstrate. You know, when there's a disaster, when there's a catastrophe, people will stand up, they will go out and they will do that kind of work. They'll go to Katrina. They'll raise money for the tsunami victims. And I think you can count on that in human nature, but what is hard for humans is to address something that is not quite right at their door. And this is what we're trying to grapple with. Is this right at our door, and is this something that's really going to affect us immediately.

I am a composer. I wrote a piece using the text of William Beebe. William Beebe was the first man that went down in a bathysphere. He said when the

last individual or species of living beings breathes no more, then another heaven and earth must pass before such a one is seen again. And I think that that calls to all of us to find -- and I think that we have an extraordinary leader in Obama who has the skill to reach out to Netanyahu and reach out to people on both sides of every argument, and ask us to come and find common ground, a common purpose.

So I'm here today for us to all look at what is our common purpose. I have a 21-year-old daughter that I'm so proud of. She's in Brazil speaking Portuguese and learning how to be an international diplomat. She's just the pride of my life, but I cannot protect her by myself. I cannot raise her by myself. I can't make sure she's got clean air to breathe by myself. And every father and every mother wants the very best for their children.

But we live in a time where now we must work together to protect our kids and our grandkids. We can't do it. We can't surround our kids with a little bubble and make sure they breathe correctly and purely by themselves. We've got to have that biological drive to protect and nurture be something that we hold for all of humanity. I agree with one of the speakers earlier who said it is an opportunity.

It's an opportunity for human beings to actually evolve and stop just protecting their own and their own family, their own business, their own job, and find that we really are one big family.

I'm so encouraged that you've asked us here. It's really a new day in this country. And I'm just so grateful for all of your thought and work.

MS. TIVAS: Hello. My name is Indigo Tivas. I'm an independent consultant on sustainability issues with a particular specialty in climate change. I'm the former director of the research program for an investment company, and my clients range from businesses, nonprofits, governments and investors.

I prefer to talk about climate change in terms of climate destabilization. And I want to emphasize the real business risks and opportunities present. I applaud the EPA's findings, and I really do encourage legislation to come out of these findings. When I talk about business risks I'm talking about what is the price of carbon going to be, how is that going to affect energy prices, how is it going to affect other business operations. It's going to affect transportation decisions, distribution decisions around products and services.

There may be material shortages associated with climate change issues and other environmental sustainability and ecological constraints. The availability of energy. Considering here in the Pacific Northwest a great deal of our energy comes from hydro, given the changes, the impacts of climate change, climate destabilization on the hydrology of this area, there are going to be very real impacts on the availability of energy in this region. And there's also going to be changes that we don't really know how they're going to impact, but changes in how the global economy works.

So businesses need regulation. And I know you've heard from a number of other businesses already today to provide some certainty. We need the regulation to provide flexibility so that it encourages innovation and creative solutions. But I believe that this is what we need to help our society address the perilous challenge of climate stabilization. Thanks for your work.

MS. KRUGER: Thank you very much. Thank you to the panel for your comments. So now what I would like to do, because we also -- we have a number of speakers that are signed up to speak this evening from 6:00 until whenever we get finished, and since my

colleagues and I are on East Coast time we're hoping that we're going to be very efficient, but we're also very prepared to stay and are looking forward to listening to all the testimony tonight. But I do know that I believe there are several speakers that have already signed in this afternoon.

And so now what I would like to do, we have time for about six more speakers before we're due to take a dinner break. And so if there are speakers that registered for the block this evening that are willing to offer us their comments now, I would like to invite you to do that. I see the first six people that jump in these chairs. It's like musical chairs.

As before, state your name and affiliation, and I'm very much looking forward to hearing what you have to say.

MR. NELSON: Thank you and good evening. My name is Grant Nelson, governmental affairs director with the Association of Washington Business, and I really appreciate the opportunity to testify before you this afternoon.

AWB is Washington's oldest and largest statewide business association and includes more than 6,600 members representing 650,000 employees. Our members include a very wide spectrum of employers from

utilities and the customers that purchase their power to manufacturers of cement, steel, petroleum, and other products. Timber companies, pulp and paper operations, agriculture and food processors, just to name a few.

AWB has advocated for many years now that a federal approach to climate change policy is much preferred over a state by state patchwork of conflicting policies that put Washington State employers at a competitive disadvantage with other states. While AWB prefers a federal approach, we believe that Congress, not EPA, should enact a national approach to reducing greenhouse gas emissions. Congress is better positioned than the EPA in representing the interests of citizens nationwide, guarding them against further harm to an already fragile economy and job loss.

Congress is also in a better position than EPA to protect against competitive disadvantages U.S. companies could face if businesses in other countries do not have to comply with expensive greenhouse gas emissions reduction requirements through the application of tariffs and other strategies.

The primary tool at EPA's disposal, the Clean Air Act, is recognized by many as being a very

poor tool to regulate greenhouse gas emissions. The Clean Air Act is structured to attain and maintain health-based National Ambient Air Quality Standards, but the Act has no mechanism to address pollutants for which the ambient standard cannot be attained through domestic controls.

Additionally, the Clean Air Act has no vehicle to address imported commodities that compete with American products, so there's no way for EPA to maintain a level playing field with companies outside the U.S. not subject to costly emission reduction requirements.

As our state and nation considers new policies to reduce greenhouse gas emissions, we must ensure that costs are minimized and benefits are maximized by making available an accurate economic impact analysis of future policies aimed at reducing greenhouse gas emissions. We all know that reducing greenhouse gas emissions will be expensive, but how Congress decides to act could make or break our economy of the future and mean the difference between job growth and job loss.

Employers in Washington State that are already performing better than national performance averages need to be provided credit for the

significant financial investments in emissions reduction technologies, and provided assurances that they will not be forced to make further reductions ahead of companies located in other states.

In conclusion, AWB and member companies agree that a federal, rather than a state by state approach to climate change is preferable, but that Congress, not EPA, should take the lead. AWB is committed to continuing to work with the governor and state leaders on greenhouse gas emissions policies, and we stand ready and willing to work with EPA and Congress on sensible, cost-effective climate change policies that create jobs, strengthen our economy, provide incentives for investments in clean technologies, and do not create a competitive disadvantage for Washington State business. Thank you again for allowing me an opportunity to testify.

MS. KRUGER: Thank you very much.

MR. STUHLMILLER: Thank you for the opportunity to speak today. I'm John Stuhlmiller, Director of Government Relations with the Washington Farm Bureau, and we represent 36,000 member families across the state, those who provide the feed, fuel, now, food and fiber that keeps our nation warm and moving.

As such, my membership is very concerned about this issue set, and thanks to Mr. Nelson going ahead of us we don't have to get into some of the issues that he raised. But I want to first point out that the endangerment finding is not warranted based upon the fact that the science is not settled, contrary to the key points document that you provided at the door. There's a lot of science out there that hasn't been included in that discussion, and I want to make sure that the Agency goes back to look at some of those additional documents.

A lot of sound science provides no tie between human activity and climate variability. In fact, the real issue is, as we know, is with solar activity, as a day like today will point out to us quite vividly. The findings lack that complete scientific review. We hope that there will be more scientific review before movement forward.

It's the wrong tool to use. Mr. Nelson pointed that out. It misses the mark because natural climate variability has some very specific outcomes that we've seen over the years. It's flood and drought. And my membership deals with that firsthand, because on the ground, as we're working the ground, flooding destroys. We've seen it over the years. You

see the outcome of that, losing livestock and precious soil.

And on the other hand, on the drought side, it makes it really difficult to grow that food if you don't have the water supply. What we need to do is take those resources and put them into a very tangible spot, which is that of water supply storage facilities, which is providing enough water for those dry seasons. That's the kind of real impact that you can make by doing the -- by spending those dollars in the right places instead of frivously spending them on insignificant or an inappropriate fashion.

And we need to focus on voluntary measures that encourage, as Mr. Nelson pointed out, encourage businesses to go there and others, and citizens, to make the right choices, if that's where we need to go. Regulation can't do it. Regulation can never -- you can't have enough policemen on the ground to get there. You have to focus on encouraging folks to do the right thing.

So we encourage EPA to listen to what the Supreme Court said in the Massachusetts vs. EPA decision, and if the science isn't there, it's not settled, don't make the decision. Make the decision to find endangerment only if the science is settled

and if it backs that decision up. It doesn't. So therefore, we encourage you to go back and definitely focus on what science is there that hasn't been included. With that, thank you very much for the opportunity.

MS. KRUGER: Thank you for your comments, Mr. Stuhlmiller.

MR. KIMBRELL: Hello. My name is Mark Kimbrell. I'm the southeast organizer with an organization called Focus the Nation that's been mentioned prior to my testimony. Over the last five months I've worked extensively with students and youth across the southeastern part of the United States to organize and advocate for climate solutions, both nationally and within their communities. I come to you as a representative of those young people who continue to work for the clean energy solutions they deserve.

I applaud this endangerment finding and consider it to be a partial fulfillment of the promise, hope and change my generation has received. But the time for comprehensive and socially just regulation of greenhouse gas emissions is now. As a representative of young climate leaders, I strongly encourage the White House, Congress and this vital

regulatory body to begin this process immediately in the name of our generation's future.

I also strongly encourage this Agency not to compartmentalize these findings and future regulations simply to the burning of fossil fuels, but to expand it to their extraction as well. With this in mind, I consider EPA's decision to approve 42 of 48 new mountaintop removal permits in Appalachia to be a major rescission of the promises of hope and change my generation has received.

Many of the young organizers and activists I work with are from and still reside in Appalachia. They and their families drink the water, breathe the air, and depend on the natural environment for their recreation and occasionally for their sustenance. On their behalf and on behalf of the downwind, down river and downtrodden of Appalachia, I ask that you immediately revoke these 42 permits before irreparable harm is done to these families and their vital, vital environment.

The youth climate movement is at the table. We are building the political and cultural will. Now it is time for the policy makers and the regulators to hold up their end of the bargain, to not be watered down by the closed door tactics of dirty industries.

Let us use this finding as a precedent for the regulation of all industries that contribute to this climate crisis. Let us do it in a comprehensive way that lifts our most depressed and disenfranchised communities out of marginality.

Let us close the door on the fossil fuel era, from extraction to burning. This administration and this Agency have a generation of young people right behind you, as is very visible today. But make no mistake, that if legislation and regulation that we deserve is weakened by compromise, with a status quo over the past, this movement's commitment will only become much stronger. And there is nothing more powerful and more strong than thousands of young people who feel their future is being gambled away. Thank you very much.

MS. KRUGER: Thank you.

MR. GALPERN: Good afternoon. My name is Dan Galpern. I'm an attorney with the Western Environmental Law Center. There is clearly no question that given the mountain of settled scientific evidence before your agency, that you could not lawfully have done otherwise but define endangerment here. That's true both with respect to the six greenhouse gases that you have selected as the subject

of this action, and also with respect to emissions of those greenhouse gases from new cars and light trucks. So, we commend your renewed willingness to begin to follow the science and to obey the law.

However, there is one major component of your proposed finding that is, frankly, highly disappointing, and that is your discussion of black carbon, and your decision to not include black carbon among your definition of pollutants that are subject to this action. In brief, that discussion is cursory, superficial and simply not reflective of the science that's been published since 2006.

And this matters because black carbon is responsible for a large portion of the warming in recent years, and because effective measures to restrict the United States in global black carbon emissions exist now, it's merely a question of leadership.

So we have three recommendations. First, fix the black carbon omission. Second, utilize your revised endangerment finding to commence action not only on 202 sources, but also with respect to other provisions of the Clean Air Act, including other major mobile sources, including nonroad vehicles and engines, emissions from ships and planes and from

rail. And third, similarly commence action to restrict greenhouse gas and black carbon pollution from major stationary sources.

Now, it would be nice if there were the time for you to do this in a very deliberative, step by step, slow manner and incrementally, as you've been advised to do by some, or for example, to wait for Congress to see if Congress fixes the problem, as you've been advised by others. On behalf of my three-year-old daughter and my five-year-old son, I urge you to reject that advice. We simply do not have any more time to waste. Be strong, press hard, and we will be with you. Thank you.

MR. ENGELFRIED: Hi. My name is Nick Engelfried and I am 21 years old. This week I am graduating from college, and I will be setting out into the real world to look for a job in the foundering economy. I am here today to say that for many of us young people going out to look for work for the first time, one of the brightest beacons of hope in these poor economic times is the burgeoning clean energy economy, the success of which depends absolutely on the federal government's commitment to severely curtail greenhouse gas emissions.

This country needs jobs in energy research

and development, which many of my peers who are graduating will help to fill. We need jobs installing solar panels and retrofitting inefficient buildings which will go to some of our country's most disadvantaged communities in need of good, meaningful work. We need jobs building fuel-efficient cars, which will go to the hard-working employees of our auto industry. But for all these jobs to materialize, we need a federal government willing not only to invest in clean green technology, even though that's very important, but that's also willing to clamp down on the old polluting industries, coal, oil and gas, which have so long held the American work force captive under the old, inefficient fossil fuel dependent economy, which we are currently watching crumble all around us.

The EPA has already taken an extremely encouraging first step with this finding and the decision to regulate carbon dioxide as a harmful pollutant. Now we need firm and steadily declining limits on greenhouse gas emissions, measures that will not only help to protect our environment and our health but which will help to -- which will help in the transition to a just and prosperous clean energy economy.

I realize that what I and thousands of other young people ask of the EPA won't be easy, not because the -- not because the green energy economy is technically difficult to achieve, but because the old polluting industries, some of which are here today, are going to fight us every step of the way, repeat the same old broken wheel arguments about needing to wait for more science, and attempt to water down whatever policies the EPA brings forward.
I believe the fate of our green energy economy depends on the ability and willingness of the EPA to stand up to these old polluting industries.

Finally though, please know that the EPA has the support of young people in going forward to regulate greenhouse gases. The generation of new workers and new voters, of which I am a part, helped to put our current new administration in office. Hundreds of thousands of us pledged to use our votes to move our country towards a clean energy future.

I'm thrilled with the EPA's finding that carbon dioxide is dangerous. Many people have already stated why that finding is very appropriate. I believe that just one good result of this finding will be the creation of thousands of new jobs in this country. If the EPA is willing to build on this

legacy it's already made for itself, curtail global warming pollution and help put our country back on the road to competitiveness, please be assured that you have the support of thousands of young people across the country every step of the way. Thank you.

MS. KRUGER: Thank you.

MS. BEDELL-STILES: Hi. Thanks to this panel for being here. I know that the time change is rough coming out west and for deciding to host this hearing in lovely Seattle, Washington.

My name is Jenny Bedell-Stiles, and I'm a member of the Cascade Climate Network. It's a group of college-age youth from Oregon and Washington working for climate solutions and climate justice. As for my paying job, I work with the Sierra Student Coalition, which is the student branch of the Sierra Club. And I have the extreme privilege in my job, have been so proud and reminded of it so many times today, to work with some of the brightest, the boldest, and the most committed high school and college students in Washington and Oregon. And they're committed to solving this climate crisis and, more importantly, reaping the opportunities that this brings.

And I've gotten to experience firsthand

their deep passion and extreme skill, and it really grounds me in hope and optimism. So we, the young people of this region, have come here today for various reasons, but one common theme is that our very future is at stake.

We come together because this decision made in the next few years will profoundly impact our own lives, our children's lives, and the lives of all future generations as well.

You've heard about the comprehensive IPCC report. It sends a clear message that we now stand at a turning point in human history. We are at that crossroads that was described before, and the decisions we make today will very much impact the future we see tomorrow, our future.

The IPCC report describes a future where one out of every three species on this planet live on the brink of extinction, where billions of people are ravaged by extreme weather events, and where billions more lack adequate supplies of safe drinking water or food. This is a truly nightmare scenario, and yet the science behind it is very real. But the scientists also tell us that we can make a difference if we act now. We're certainly in a crisis, but this crisis is not yet a disaster. Rather, this crisis presents a

choice, and we are here today to choose a different future. And it looks like your presence here shows us that you're interested in joining us in this different future.

When students in the Northwest came together to form the Cascade Climate Network, we wrote a declaration of our beliefs, and I just wanted to share with you a small part of it, a pledge that we have made to future generations:

We, the youth of today, pledge to end this climate crisis within our lifetimes, because failing to do so is unconscionable, and we pledge to make our bright vision of a sustainable, just and prosperous future a reality. We pledge to hold ourselves and our elected officials accountable, and we pledge to work in common cause with all who will join us. And it has been mentioned before, President Obama and yourselves as representatives of the EPA, it seems clear that you really want to join us, and it will be incredible to have you as allies as many of your victories thus far, even in the last few months, have suggested.

So we're proud to be sitting at the same table as you as youth. And for my perspective as a youth organizer, I can tell you that our community will be backing this administration 100 percent as it

plunges towards just climate solutions. Thank you very much for allowing me the time today to speak. Thank you.

MS. KRUGER: Thank you and thank all of the members of the panel for those remarks, and if you can drop a copy of your oral remarks off with the recorder, that would be great. We're now at the point where we're going to break for dinner until 6:00. I don't know how many of you are going to actually come back after this break. We'll be here but you may not.

And so I would very much like to thank all of you for coming and joining us today. For all of those of you who spoke today it's been until now just a very interesting and informative and useful discussion that you shared with us. And we appreciate all of you taking the time, and I know many people here have come some distance to be able to make comments and to participate in this.

So if we don't get to see you again, on behalf of my colleagues thank you for coming, and if you're here after 6:00 then we'll get to spend another few hours together. Thank you.

(Adjourned for dinner recess at 5:00 p.m.)

EVENING SESSION

6:05 P.M.

MS. KRUGER: Well, good evening everybody, and welcome to our public hearing on the proposed endangerment and cause or contribute findings for greenhouse gases under the Clean Air Act.

I'm Dina Kruger. I'm the director of the Climate Change Division at the Environmental Protection Agency, and with me today are Jason Samenow, who was instrumental in the assessment of the science for the proposed findings; Rona Birnbaum, who is the chief of the Climate Science and Impacts Branch in my division, and Rick Albright, who is the director of the air and waste division --

Is that right, Rick?

MR. ALBRIGHT: Air, Waste and Toxics.

MS. KRUGER: -- here in this Seattle office of EPA. I'm not going to give you the whole spiel of what we're doing, but just to give you a little bit of information, we're extremely happy to be here in Seattle. We've had a great day so far. We've heard from a lot of people, and we're looking forward to the comments that we're going to receive tonight.

This is an important finding, an important

proposal that we are making and one on which we do very much want to hear your comments. As the proposed endangerment findings states, in both magnitude and probability, climate change is an enormous problem. The greenhouse gases that are responsible for it endanger public health and welfare within the meaning of the Clean Air Act.

And so we're here today to hear your views on this important issue. This is actually the second hearing that we've had. We held one on Monday in Washington D.C. We are going to be web streaming this hearing if people are listening in. And there's also a call-in line.

So our purpose here today is to receive oral testimony. And what I'm going to ask the commenters to do is to come up and offer their testimony, and then if you have a written copy of your oral statement and you're willing to leave it for the person who is doing the transcription, that will help make sure that we get an accurate record.

We are transcribing this hearing. That transcription will be publicly available in the docket for this rulemaking for inspection. These comments that we receive here today are of equal weight to written comments that we receive, and any of you are

also welcome to submit more lengthy written comments if you so desire.

I would like to ask people to turn off their cell phones if you haven't done that yet, or turn off the ringer at least. We're asking the commenters to keep their remarks to three minutes, and there's a timer up here that will help you do that.

And as I said, we are delighted that we are here. The public comment period for this rule, it's a 60-day public comment period. It will end on June 23, 2009. After that time we will be reviewing all of the comments that we receive, both oral and written, and responding to them. We do not have a decision regarding the timing of issuing a final finding, which would be modified in response to the comments that we receive. But we're holding this hearing in accordance with the Clean Air Act under which EPA provides interested parties the opportunity to present both oral and written views and arguments to us.

So with that, what I'm going to do is call up blocks of speakers, so when you hear your name, if you can come up and sit at the table. You can speak in any order. You can just pass the microphone down the table. What I do ask is that everyone state their name and affiliation, or if you're speaking as a

concerned citizen or on behalf of an organization, at the beginning of your testimony, so that we have a record that goes with your comments in the transcript.

With that we will go ahead and get started. So I would like to ask Colleen Lawson from CREDO Action. Douglas Risedorf. Let's see. Todd Myers from the Washington Policy Center. Renee Radcliff-Sinclair from the U.S. Chamber of Commerce. Llewellyn Matthews, the Northwest Pulp and Paper Association. So whenever you're ready someone can lead off.

MS. LAWSON: My name is Colleen Lawson and I'm here on the recommendation of CREDO, but I actually am here as a concerned citizen. I'm a psychotherapist in private practice in Seattle.

I stand here to ask not all of you but sort of over your heads at our legislators, are you receiving me? All the research I have read speaks to the dangers of the six most pernicious greenhouse gases, the danger that they present to ourselves and future generations. It's true we are in imminent danger. Our children are in danger. We are getting sick because we live in a nest we have fouled and continue to foul. We are in danger, it's true. We in the polluting industrialized nations are spoiling the air and water and soil for everyone.

More important to this discussion, the Earth is sick. The Earth is in danger. We are putting greenhouse gases into our atmosphere, her water, her soil. We are killing the Earth. We are killing our home. We are burning our house down one molecule of CO_2 at a time. Our former administrations have not been helping us protect ourselves from our selfishness, our ignorance, our excesses.

My fellow psychotherapists and I see clients who are overcome with anxiety, people so anxious they cannot sleep. When the people sleep, some of them, they sometimes dream dreams that scare them awake. We therapists often see people so anxious they take medications to calm themselves so they can sleep, people who cannot sleep unless they take their medications. I know other factors besides environmental degradation contribute to anxiety, and I know the destruction of our Earth also contributes.

Are you receiving me? Underneath what we can see, deep in the under earth place, we are connected. Our psyches are connected, and just like a baby knows and mimics her mother's emotional state, we know and mimic our earth's state. Our mother is our home. Earth is our home.

Are you receiving me? We are. Earth is in

distress, and so we, her children, whether we are conscious enough yet to know it or not, are in distress. We are anxious. We are terrified that we are slowly killing ourselves, our children, the animals and plants on land and in water. We are terrified that we are killing our home. We are afraid because we are burning our house down, and before today our government has chosen not to pass laws that protect us, all of us, from our own destruction of our own making.

Here is my fervent request. Please allow our new administration to receive our truth and act vigorously to uphold it. Let us challenge our country's bright young minds to create new technologies that provide us energy while maintaining the integrity of the earth. Let us challenge each other to listen to the quiet voices of Third World peoples, of animals, of plants, of the earth herself.

It is time to radically reduce greenhouse gas emissions, and so to clean up our mother earth, our home. Are you receiving me? Thank you.

MS. KRUGER: Thank you.

MR. MYERS: Good evening. My name is Todd Myers. I'm the environmental director of the Washington Policy Center here in Seattle. And as a

former employee of the state Department of Natural Resources I want to say I appreciate how long you've been here and how difficult these hearings can be.

I want to talk about two things in the endangerment hearing, words that you mentioned, "magnitude" and "probability." First with regard to magnitude, in a lot of the testimony that you've heard and that you will receive, certainly there will be claims about the magnitude of the threat of climate change. And what I would encourage you to do is to follow the science.

You hear a lot about the scientific consensus, but too often that's where it stops, and then claims of 10 feet of sea level rise and other things get used, claiming that they are part of the scientific consensus when they actually are not.

Let me just give you three quick examples. The first is that when you hear claims of sea level rise you should follow what the IPCC says, and that is that the most likely scenario for sea level rise worldwide is about 14 inches. The University of Washington also did their own research for the Puget Sound here in Washington State and found that across the Puget Sound it would be about 13 inches. I think rather than look at the extreme ranges, use that sort

of number.

The second thing, you hear a lot about snow pack and the impact on snow pack. University of Washington has done research, and in an upcoming report says that we cannot see the global warming signature in terms of decline in snow pack since about 1980. So while snow pack is important to us here because we have hydro power, you need to understand what the true magnitude of the threat is.

Lastly, in terms of storms, in Washington State we've had a couple of big storms in the last few years, and certainly at the global level people talk about hurricanes. Here in Washington State, however, we've looked at the impact of those storms and whether they are related to climate change. And climate scientists Phil Mote or, excuse me, Cliff Mass of the University of Washington says that there is no strong evidence for claims that these storms are caused by climate change, and that initial simulations of future Northwest climate did not suggest heavier rain events. This does not indicate that climate change is not a concern. It simply says that when you address climate change you must address the correct magnitude.

Lastly, I want to address the issue of probability. A lot of the impacts that we hear about

probability of climate change relate to what are called fat tails, which are very low chances but of very extreme events. The chances of these events drag the probability and the cost of climate change upward. However, there's a difference between probability and uncertainty. And what you see so often in these projections is that you see very large fat tails, indicating that there might be a big chance of very extreme events, but they're more related to uncertainty than they are to probability.

Uncertainty is not a basis for decision making. You can't simply say, I don't know what's going to happen, therefore we have to plan for everything. You can base your decisions on probability.

And so what I would encourage you to do is, when looking at the probability, is make sure that you are not mistaking these sorts of events and calling them probability when they are actually uncertainty. Try to stick to the most likely scenarios, because that way you can make sure that the regulations that you are passing truly are commensurate to the likely impacts. Thanks.

MS. KRUGER: Thank you for your comments.

MS. MATTHEWS: My name is Llewellyn

Matthews. I'm the director of the Northwest Pulp and Paper Association. I appreciate the opportunity to be here tonight and that you guys came to Seattle for this hearing.

By way of introduction, I would like to describe a few things about our industry. We have been reducing our carbon intensity and our greenhouse gas emissions. At this point collectively in the wood products, pulp and paper industry, we've reduced greenhouse gas emissions by 34 percent. Half of that was due to production curtailments and half of that was due to efforts that we made to use more renewables.

In terms of renewables, our industry produces more renewable energy than solar, wind, geothermal combined. Sixty-five percent of the energy used at our mills nationwide is self-generated. In the Pacific Northwest many mills do quite a bit better than the national average of 65 percent. So we have mills that are achieving 85 percent energy self-sufficiency and have already reduced their emissions below 1990 levels. We're also leaders in combined heat and power and other technologies to use energy more efficiently.

This experience leads us to a particular

position on how best to go about reducing greenhouse gas emissions. We believe that it should be accomplished through national strategies that reduce -- that call for the reduction of consumption of fossil fuels, promoting increased use of renewables, and promote increased efficiency of production and use of all energy types.

That position leads us to believe also that the Clean Air Act is not the best tool. And Congress and EPA have many tools for addressing this, but the Clean Air Act is not the best tool for achieving that result. The Clean Air Act is really intended more for something that's local or a national pollution issue.

If we were to have an endangerment finding that leads to a determination that the country as a whole is in nonattainment for CO_2, we can't ever be in attainment until the rest of the world is as well. And, in effect, we are putting our legal status under the Clean Air Act in the hands of every other country in the nation that may not share our views as to what is the appropriate level of CO_2, what's the appropriate target, what's the appropriate means to get there.

And that's not to say we shouldn't take action. We should, but it should be more through the

efforts that can be undertaken through increased renewables, reduction in fossil fuel, and more efficient use of all of our resources.

The last thing I would like to say is that you need to keep in mind that any program, as it goes forward, that the greenhouse gases from biomass is carbon-neutral and not adding to the global climate change issue. And with that, thank you for the opportunity to make these comments.

MS. KRUGER: Thank you very much.

MS. SINCLAIR: Good evening. My name is Renee Sinclair. I'm Executive Director of Congressional and Public Affairs for the Northwest Regional Office of the U.S. Chamber of Commerce, representing more than three million businesses and organizations of every size, sector and region.

We presently have an energy gap. The gap is between the clean, low carbon-dioxide-producing renewable energy resources we all want, and the low cost energy on which our economy depends and for which all consumers have a growing appetite.

As you know, energy drives our economy. Sustainable energy is an essential component of sustainable development. As you also know, the energy needs of the future are tremendous and will require

that we get all energy-generating opportunities producing.

The U.S. Chamber of Commerce does not, as a matter of policy, support or oppose any specific conceptual approach to address greenhouse gas emissions, including cap and trade or a carbon tax. Rather, the chamber weighs climate policy on a case by case basis against five core principles.

First, preserve American jobs and the competitiveness of U.S. industries. Second, provide an international solution that includes developing nations so that U.S. companies are not held solely responsible for addressing a global issue. Third, promote accelerated development and deployment of greenhouse gas reduction technologies. Fourth, reduce barriers to the development of climate-friendly sources, and that can include streamlined permitting processes for these kinds of facilities, as well as appropriate legal reform aimed at halting lawsuits designed to kill green energy-producing projects. And finally, promote energy conservation and efficiency.

In closing, the U.S. Chamber believes global problems, such as those associated with air quality, ultimately require global solutions, and

sweeping changes to the Clean Air Act as it relates to greenhouse gases are best managed by the Congress. Thank you.

MS. KRUGER: Thank you very much for your comments and for the comments of all of the members of the panel. And if you do have a copy of what you just said, and if you can drop it with the recorder that would be wonderful.

Now I would actually like to invite representative Shelly Short, Washington State house member, to speak to us and offer her comments.

MS. SHORT: Thank you so much for holding this hearing in Seattle to gather our input. For the record, my name is Shelly Short, and I am a member of the Washington State House of Representatives in the 7th legislative district.

You're holding this hearing in a state that is very unique from many states in the nation, blessed with tremendous natural resources, in our rivers, our forests, agriculture, our ability to feed the world, and our ability to produce an abundant supply of clean, renewable, affordable energy in our hydro production.

Renewable energy such as wind, solar, biomass and waste to energy is becoming a crucial part

of this state's energy mix as well. And this state's global carbon footprint amounts to three-tenths of one percent.

Our state's unemployment has risen to an all time high of 9 percent and thousands of jobs have been lost during this recession. Three counties in my legislative district, Ferry, Pend Oreille and Stevens, have the unfortunate distinction of having the highest unemployment in this state, 16 and 17 percent respectively. The state of the economy cannot be ignored in this process.

EPA's decision to regulate CO_2 under the Clean Air Act is likely to have serious economic consequences for regulated entities throughout the United States, including small businesses and small communities. While I believe that the actions you are taking are best suited to be addressed by policy makers in Congress and not by a regulatory entity, your decisions to regulate CO_2 cannot be made in a vacuum without regard for the physical, mental and economic health and welfare of families and the jobs that they depend on.

You can show the American people that their jobs and livelihoods are just as important as addressing the cyclical effects of climate change in

this country. My testimony will focus on four areas that I believe are necessary for EPA to incorporate into its draft findings, or, in the alternative, for Congress to address.

Number one: EPA needs to fully explain, I believe, in its draft finding, why its existing authority to regulate under the Clean Air Act is not enough to adequately protect public health from alleged ozone impacts of climate change, given that it already has the authority to regulate the tropospheric ozone.

Number two: Given the ramifications that this action will have on the economy of the country, it is imperative the EPA undertake, I believe, a systematic risk analysis or cost/benefit analysis that includes the following: number one, the cumulative human health effects of this finding on American families, their jobs, their livelihoods, the effect on their ability to keep their homes and their health insurance, to name a few.

Number two: The cumulative effects should be addressed of increased importation of products and goods and services which will most likely result in marked increases in global greenhouse gas emissions, environmental degradation, and the erosion of product

safety production. One need only remember the toxic pet food, toys and wallboard supplies from China that have endangered the health and welfare of our families, our children and our pets.

Number three: EPA needs to integrate into its findings an acknowledgement and discussion that the climate change science you are relying on for this finding is far from settled and agreed upon. Thousands of scientists, including some of those that originally worked with the IPCC, question many aspects of climate change theory as compiled by that organization.

The models that make up that work of the IPCC do not include important factors such as solar activity, to name a few. Natural climate variability needs to also be discussed more thoroughly and added into the mix, as does the fact that water vapor is the largest component of greenhouse gas.

It became clear to me during my work as ranking member on the Ecology and Parks Committee, and the hours of testimony, articles and reports show that the climate change science you are relying upon is far from settled and agreed upon. In fact, this committee received testimony under the guise of addressing climate change discussing the need to legislatively

level the playing field so renewable energy could compete with low-cost hydro power.

Another piece of testimony came during our debate on cap and trade legislation where it was acknowledged, quite openly in fact during this debate, that this legislation would be a tool for redistribution of wealth and to give broad authority to unelected regulatory agencies, to have them determine the winners and losers in our state's economy. So I have to wonder whether in fact EPA's finding creates a mechanism for doing the same at the federal level.

EPA further needs to recognize a very critical component of dealing with cyclical effects of climate change and that being adaptation. I believe this is where we have the opportunities before us. EPA should analyze the adaptive tools we currently have in developing flood control, forest management and water storage projects, to name a few. EPA should further analyze the impediments to utilizing those tools and report that information to Congress and to the states.

We have the ability to help the American people adapt to climate change, encourage energy efficiency, and support the innovative advances that

are being made in renewable energy in alternative fuels while keeping a strong and vibrant economy.

In conclusion, I urge you to recognize that climate change science is in dispute. That EPA forcing emission reductions in the United States will just shift emissions to elsewhere in the world, while continuing to wreak havoc on an economy that is in recession.

Poverty is the biggest polluter. Even the UN Framework Convention on Climate Change recognized in part that, and I quote, "Any policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.

"To achieve this, such policies and measures should take into account different socioeconomic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors."

Congress and EPA should both heed this advice.

I really do appreciate that you folks have taken the time to be here in Seattle to hear our comments. Thank you very much. And I'll leave my

testimony with the recorder.

MS. KRUGER: Thank you very much, Representative Short. Okay. I'm going to move right along and continue down my list of folks who have checked in to speak. John Ledger from Associated Oregon Industries. Robert Jeffers-Schroder from the Climate Change Lobby. James Adcock from Mountaineers. And Jim Greenfield from the Cascade Land Conservancy.

You can go in any order. Just please identify yourself and your organization as you start.

MR. LEDGER: Good evening. My name is John Ledger. I'm Vice President of Associated Oregon Industries. AOI is Oregon's state largest statewide business association. We represent large and small manufacturers throughout the state.

One thing that is often overlooked is Oregon is a manufacturing state, an exporting state. We feel the expansion of the Clean Air Act will have a direct impact on virtually every part of Oregon's manufacturing sectors, including our members' facilities in metals, cement, pulp and paper, power plants and many others. Most of these that are susceptible to leakage are off shoring.

Generally speaking, AOI supports regulations and expansions that provide real benefits

to environmental quality and public health, especially if they are efficient, fair and effective. In this instance, in a practical sense, AOI members do not feel these goals would be met.

Expanding the jurisdiction of the Clean Air Act to regulate CO_2 and other greenhouse gases is unlikely to provide real net benefits to environmental quality or public health. It will, however, pose serious risk to our nation's competitiveness. That is not to say that greenhouse gas reduction strategies should not be employed. They must, and they will. It is a question of how best to do it.

As you know, the Clean Air Act does not allow the proper balancing of economic costs and benefits and energy security with environmental issues. This is a major flaw in using the Clean Air Act as a compliance tool. But it's just one. The patchwork of state and regional regulations that would exist under the Clean Air Act would increase investment uncertainty and decrease national economic progress. Manufacturers in different regions of the country would be regulated in different ways based on the political climate of the state where they are located.

Further, the Clean Air Act is designed to

control traditional air pollutants, and it has done this very well. The EPA administrator specifies a particular maximum atmospheric concentration for each pollutant, and the state develops a SIP to achieve that concentration. The system works well when a state can control the local concentration of the listed pollutant within its boundaries. But the global carbon dioxide concentration has no relationship to nearby emissions. Instead it's determined by the collective actions of every CO_2 emitter in the world. And CO_2 has persisted in the atmosphere for decades, so local concentrations depend not only on current global emissions but on decades of past emissions. The EPA would have to prescribe standards which it knows states cannot meet or prescribe ones they cannot avoid meeting.

How to reduce greenhouse gases is a question that must be addressed by all parts of our society, by looking at economic, social and every other aspect of our lives. This should be done by our elected federal officials who can take into account all aspects of our society. That is how we will make progress.

MS. KRUGER: Thank you for your comments.

MR. JEFFERS-SCHRODER: My name is Bob

Jeffers-Schroder. I'm a member of the Citizens Climate Lobby. We're a grassroots organization that is favoring a revenue-neutral carbon tax. I'm not going to address that today because I know that's not something EPA can do. In fact, I'm going to abandon my notes all together at this point because of what some previous speakers have said.

First thing, earlier in the previous session, there were some deniers who say basically it's not settled science. And all I can say on that is, if you're looking at what 10,000 scientists say that are well documented, very thorough, good science that they've applied, and comparing to what 1,000 have said, it seems to me that maybe we should listen to the 10,000.

But even closer to my own experience is what the speaker a few minutes ago said about the difference between uncertainty and probability. My professional career was dealing with probabilities. In particular, I was initially -- for the first ten years what I worked on was the safety of the Minuteman missile system.

Our job was to verify the probability of an inadvertent successful launch of a Minuteman missile, and that equals nuclear war. That the probability of

that had to be less than 10 to the minus tenth. That's one in 10 billion per ten years. That was the probability we were required to do.

Now, in doing that, we had to deal with a lot of uncertainty. I'm assuming what the previous speaker meant by uncertainty versus probability was you don't know exactly what the probability is. Well, we didn't know the probabilities. We had probability bounds. And even they aren't rigorous bounds. What we had was best estimates. We weren't allowed to use even nominal case. We had to use worst case because nuclear war is a very serious thing.

Now I ask people, consider the consequences of worst case global warming. I'm not going to just talk about -- well, certainly not best case but even nominal case. We ought to consider worst case, not maybe absolute worst, worst case, but a worst case that matters. We're talking about extinction. Nuclear war would have been bad, but this is worse.

Now, our tolerance, when I talk to people about 10 to the minus tenth -- we weren't allowed to talk that number -- when I talk to people about 10 to the minus tenth, they thought -- and there's one in 10 million -- they said that's not okay. Many people said it's wrong to even calculate the number because

it's immoral to even consider the possibility of this happening. Well, we couldn't do that. Well, it would have been good to eliminate them. That's my current view. But okay, we couldn't. I mean, that wasn't politically possible. So we had to take worst case and we work it. And it was hard, but we were able to work it.

So I'm saying, how can you say that because there's uncertainty of what the probability is that we should ignore -- I guess they're not saying ignore but that we should take economic considerations into account. We sure didn't take economics into account on this one.

Now I got one more case, and I hate to push the time here, but I also worked on transportation system for -- and this is an automated transportation system. And we had a more generous budget there. We were allowed one chance in a million of a fatal collision. This was in Morgantown, West Virginia. Someone might have heard of it.

We had to assume, if we couldn't prove something couldn't happen, we had to assume it could. Now we're talking here we weren't allowed to have one person killed in the life of the system, and we haven't. It's gone 20 years. Nobody has died. We've

had no collisions.

MS. KRUGER: I'm going to ask you to wrap up.

MR. JEFFERS-SCHRODER: In doing the analysis I had to consider situations that were outrageous because that's not acceptable. That's it.

MS. KRUGER: Thank you for your comments.

MR. ADCOCK: James Adcock, the Mountaineers. Thank you for this opportunity to talk about climate change and what our government ought to be doing about it. Thank you, President Obama, Waxman and Markey for taking positive first steps in the right direction. My aunt, Hattie Adcock, died a few years ago in Seattle in a heat wave. That's reality. My brother and I cleaned up after her body. We saw the reality. We smelt it, we felt it in our hands. That's reality. Fourteen thousand people dead in one Paris heat wave. That's reality.

My children, in turn, will depend on the success of your efforts, EPA, in order to be able to live long, healthy, happy lives. And to have the opportunity in turn to raise their own children.

Global warming is a reality to our region, as anyone who has grown up in this region and spent the last 50 years skiing at our local Snoqualmie Pass

ski resort knows. In 40 years we will not be able to ski at all at Snoqualmie Pass. In 80 years no one will be able to ski at any Washington State ski resort.

Further, between hydroelectric, harvest hatcheries, and habitat destruction, our native salmon are rapidly going extinct. And to the fish, habitat means keeping climate change water temperatures below 70 degrees.

The lower Snake, McNary, Priest and Wanapum dams are going to fail this test very soon. But we need these same dams to avoid local fossil fuel consumption, particularly as plug-in hybrids and the electric vehicles come on line, and that's the conflict. The lower Snake dams alone are equal to the last 10 years of Washington State wind power installation.

In 100 years, oil and natural gas will be consumed whether we conserve them or not. The issue, then, is does human society have the courage to do anything about coal. And to get rid of coal requires CO_2 costs to be over $40 a ton, and even Waxman-Markey proposes keeping CO_2 costs below $25 a ton, which means we will continue to do nothing useful about coal.

Nicholas Stern says environmental damage costs are about $80 a ton, whereas local environmental economists say Puget Sound damage costs may be as high as $1,000 a ton. When we pay less than the true cost of our behaviors, we are receiving a carbon subsidy. We are not paying a carbon tax. When we conserve electricity in Washington State we are primarily saving natural gas, not coal. But we know that the natural gas will be consumed.

So none of this works. We need a new approach, a more serious approach, an approach which will get us off coal. And no one has seriously suggested what that approach would be except James Hansen. The Susan Solomon irreversibility paper shows that what matters is the long-term cumulative effects of CO_2, not the short-term dissipative effects of CO_2.

What will determine how much CO_2 we have in the air 100 years from now? How much coal we burn during that time frame, and only how much coal we burn during that time frame. Thank you very much.

MS. KRUGER: Thank you for your remarks. If you can pass the microphone down to the other end.

MR. GREENFIELD: Good evening. I'm Jim Greenfield. I'm a member of the board of directors of the Cascade Land Conservancy. I'm also a partner in

the Seattle law firm of Davis Wright Tremaine, but I'm speaking tonight on behalf of the Cascade Land Conservancy. Thanks for the opportunity to comment.

The Cascade Land Conservancy is Washington's largest independent land trust and this year celebrates its 20th anniversary. Cascade Land Conservancy has helped conserve over 155,000 acres of farms, forests and natural areas in Washington State, and has worked to enhance the vibrancy and livability of our cities and towns.

EPA's proposed finding that greenhouse gases pose a threat to public health and welfare is an important step forward. And it is the latest scientific finding urging us here in this region, and across the country and around the world, to move quickly on solutions to climate change. Solutions like those envisioned in The Cascade Agenda.

The Cascade Agenda is a 100-year strategic vision for conserving great lands and creating great communities in the central Puget Sound and Cascade region. Launched in 2005, it is a community-generated vision for how to address the challenges of growth and climate change by growing within our existing footprint, building compact, walkable, vibrant communities, and conserving the remaining 1.3 million

acres of working farms, forests and natural areas in our region. Solutions and market-based tools such as transfer of development rights, community forest bonds, and transit-oriented development will be key to achieving this vision.

Living in more compact cities and towns will have such benefits as reducing the miles people drive in cars, while our work in the forests of the region will cleanse the air we breathe. It's a simple formula, really. Make the cities great places to live which will reduce sprawl which will reduce the number of automobile miles driven and other carbon-producing activities and will conserve natural landscapes.

Climate change does threaten public health and welfare, and our communities must work together with urgency to address this tremendous challenge. Thank you very much.

MS. KRUGER: Thank you very much for your comments, and thank you to all of the members of this panel. And if you have written remarks that you want to turn into the recorder that would be lovely.

Is Daniel Snyder from the San Juan Island Food Co-op here? Awesome, all right. Ron Tressler. Steve Erickson from the Whidbey Environmental Action Network. And Kevin Osborne.

MR. OSBORNE: I'm here.

MS. KRUGER: Great. Take it away.

MR. ERICKSON: I am Steven Erickson from Whidbey Environmental Action Network. We're a small organization on Whidbey Island. If you look at a map going northwest from Seattle and floating out in Puget Sound is Whidbey Island.

The effects on Whidbey Island in the next 100 years of the rampant burning of fossil fuels that's already occurred go far beyond trite encapsulation as climate change. Here's some, briefly, some of the major impacts that are going to be affecting the island. It's going to be diminished productivity of the surrounding marine environment due to acidification. It's well documented. It's already occurring, perhaps to the extent of disruption or even collapse of trophic and energy webs. This will, and is, affecting organisms large and small from plankton to eel grass to orcas.

Rising sea levels will have enormous impact. The Level of Puget Sound predicted by the University of Washington Climate Impacts Group and state Department of Ecology, they have a high likelihood of rising between 12 to 36 inches by 2100. I would emphasize the likelihood, not probability, in

a statistical sense. The previous speaker muddied that distinction.

Increased height of storm surges and extreme high tides that already occur periodically is going to magnify that seemingly minor increase. Some effects are obvious such as substantial loss of coastal wetlands. Others are not so obvious. Most of Whidbey's human population is dependent for water on the federally designated sole source aquifer, which is completely dependent on precipitation for recharge. Higher sea levels result in increased salt water intrusion into the aquifer rendering it unfit for use. And there's no easy replacement. It's an island.

There are substantial communities on the coast that already live behind dikes that are at or below sea level. Many of these will become untenable in the face of rising seas and the resulting higher storm surges and extreme high tides. There are going to be thousands of carbon refugees from Whidbey Island alone. I won't even get into possible effects on precipitation and aquifer recharge, wildfire, et cetera.

We're really, really late on even starting to convert to a carbon-neutral civilization. We're so late we need to be carbon-negative for a while. That

is, we need to sequester a substantial amount of the greenhouse gases emitted into the atmosphere in the last 100 years. Simply being carbon-neutral is no longer sufficient to avoid the worst impacts.

Greenhouse gases emitted by the transportation sector is only a start. Certainly there are less clumsy mechanisms to address this looming catastrophe than administrative regulation, but unfortunately, Congress is paralyzed by the influence of the fossil fuel industry, so we'll take what we can get.

We've got to take action now at all levels in the transportation sector. We need to rebuild the railroads, build real mass transit and stop subsidizing sprawl. Please act now.

One thing I'm going to add here. The previous speaker actually said global CO_2 has no relation to local emissions. He flunks both elementary math and basic logic. Global greenhouse gas levels are the result, the cumulative result, of local emissions. You have to start somewhere.

MS. KRUGER: Thank you very much.

MR. SNYDER: I'm Daniel Snyder, and I'm a 47-year-old south side of Chicago community organizer, moved here. Anyway, thank you for listening to my

comments in support of the proposed finding of endangerment caused by greenhouse gases.

The agency finds correctly that we are experiencing significant public health and welfare effects on water resources and biodiversity in the Puget Sound area. This is particularly aggravated in San Juan, Jefferson, and Island counties. Coal and oil seem relatively cheap if we externalize the social cost of extracting and burning the products, but the actual cost in treasure and in lives is enormous.

We incur escalating costs in health care, pollution mitigation, and permanently destroyed habitat for humans and wildlife. If these costs were loaded on the front end in selling the resource rather than deferring payment until the public must address the crisis, burning fossil fuels would prove to be very expensive and dangerous.

Reflection on this tricky and very lucrative business model doesn't seem to have the same bracing effect of one tacky four letter word: jobs. The coal industry and the EPA in the last decade were big on evaluating regulations by their impact on jobs and profit. Unfortunately, the jobs they were measuring came from the current energy sector, or from the modeling that infers that reduction of coal and

oil in our energy stream will raise prices. Jobs where I live depend on the tourist industry, which in turn depends on water quality and wildlife.

I would like to speak to the raw economic costs borne by the people of our region due to climate change attributable to fossil fuel emissions. Specifically, changes in water quality due to global warming and dwindling salmon run endanger our local orca population. In the last 50 years acidity has increased making it more difficult for small shell marine animals, or krill, to build their skeletons composed of calcium. Krill live at the bottom of the food chain that ends with salmon and orca.

The six greenhouse gases covered under section 202 of the CAA have contributed to this acidification, if not caused it in its entirety. Our orca population, an endangered species, lost six whales last year. Starvation was the proximate cause, but science from marine biologists suggest that they were poisoned by their own fat reserves saturated with toxic exude of coal-fired electricity plants.

Electricity accounts for 34 percent of greenhouse gases in the U.S. We can't do much about the mercury and CO_2 blowing at us from China, but we certainly don't need a foreign corporation running an

antiquated coal plant in Centralia. In Washington we have no need to burn coal because of our hydro power. There's also plenty of wind in the Palouse, geothermal sources to be tapped, and a desert which has too few solar collectors.

Species extinction and marginal water quality may be abstractions for some, but for the people of San Juan, Jefferson and Island counties it is our livelihood. I live on an island where it's difficult and expensive to externalize the impact of pollution. I say we all live on an island.

MS. KRUGER: Thank you for your remarks.

MR. OSBORNE: Hi. My name is Kevin Osborne. I'm a student from Seattle University studying environmental studies and Mandarin. And I wanted to just take this opportunity to share why I believe the regulation of greenhouse gas emissions is absolutely necessary.

I've come here today to share my optimism and support for greater action by the EPA and the federal government in terms of the greenhouse gas emissions. I simply believe, as Thomas Friedman in the book "Hot, Flat, and Crowded," states, "We are entering into the energy climate era."

I want to list five key problems that we

are confronted with. This is massive transfer of wealth to oil-rich countries and their petro dictators. Second, disruptive climate change. Third, growing global demand for ever scarcer energy supplies and natural resources. Fourth, accelerating biodiversity loss of plants and animals. Fifth, energy poverty that divides the world between electricity haves and have-nots. These are not isolated issues, rather intertwined and interconnected, and can be addressed through what I believe a clean energy system.

Opponents say new energy emission limits would be too costly. I would respond to that by saying today's energy climate, climate challenges are of great opportunities disguised as insoluble problems. And I just want to repeat that. Today's energy climate challenges are great opportunities disguised as insoluble problems. We need a clean energy system. The benefits are numerous. If we invest as a nation in clean energy and efficiency, America will be stronger, healthier, more secure, more innovative and more competitive, more prosperous and more respected. To me it's just common sense. What would be more patriotic, capitalistic and geostrategic than that as Thomas Friedman remarks.

We have been trying to solve the problems caused by dirty fuels one step at a time rather than trying to create a new system to replace it. I am advocating for a system of government regulations, research funding, and tax incentives that would stimulate a system for innovating, generating, deploying clean energy and energy efficiency, promote resource productivity and an ethic of conservation. This not only addresses and mitigates the challenges of climate change and public health, but also a whole list of other issues.

In summary, we are the example throughout the world. America sets the example. We need to look long-term and take the lead by readdressing the American way in energy and resource consumption, by setting the example now. I am committed as a constituent for change. I say yes, we can. I say yes, we will. With your committed support and action, we can achieve. I want to thank you for your time.

MS. KRUGER: Thank you very much for your remarks.

MR. TRESSLER: My name is Ron Tressler. I am with the Seattle City Light Environmental Affairs Division. On behalf of Seattle City Light, I would like to thank EPA for the opportunity to provide

comment on this vitally important topic.

Power generated by Seattle City Light's five hydroelectric projects, as well as the purchase from the federal Columbia River hydroelectric system managed by the Bonneville Power Administration, is critical to the region. Climate changes impact on mountain snow pack and glaciers that supply much of the water for our projects threaten the city of Seattle's and the region's prosperity and environmental health in the coming years.

Because of our reliance on hydro electricity and our concerns regarding the impact of human-induced climate change on the city's electrical system, our utility has implemented a number of significant voluntary steps to achieve a carbon-neutral profile. And we fully support EPA's proposal to find greenhouse gases may reasonably be anticipated to endanger public health and welfare. Our utility believes that EPA should implement effective regulation of greenhouse gases emissions under the Clean Air Act.

The effects of climate change have already been felt in the watersheds in which we have facilities. Between 1950 and 2000, the date of peak snow pack in some areas of the Cascades has shifted

significantly earlier. The amount of snow pack on April 1st has declined as much as 50 percent in some areas. The warming trend and reduced snow pack are causing greater stream flow variability, earlier peaks in our spring runoff, and lower summer flow conditions.

The glaciers in the Skagit River watershed, for example, are a vital source of water during the summer and early fall for not only our hydroelectric system but also the aquatic ecosystems. Replacing the natural storage in the snow pack and the glaciers would come at a tremendous financial and ecological cost.

The University of Washington's Climate Impacts Group estimates that the annual temperature of the Pacific Northwest will increase 2.2 degrees by 2020 and 3.5 degrees by 2040, compared to 1970 to '99 temperatures.

This can result in 40 to 50 percent loss of snow pack and reduction of 30 percent in summer flows and stream-fed tributaries. In the warming climate, extreme events, like storms, floods, droughts and longer and more intense heat waves are more likely to become more frequent. All these have the potential to potentially significantly cause impacts to our

operations.

The utility also has many federal, state and voluntary stewardship responsibilities in the watersheds where we operate. In the Skagit, for example, we operate to balance recreation as well as fish habitat for endangered and other salmon species. Loss of summer and fall runoff and higher temperatures could have serious consequences on the health of these fish populations.

One of our internal studies has predicted that by the year 2040 that the loss of snow and glacier storage could result in us not being able to effectively balance the electricity, flood control and fisheries' habitat needs.

In conclusion, we believe the EPA administrator should act quickly to prevent harm, given the compelling scientific findings and evidence of climate changes that are already occurring. Thank you.

MS. KRUGER: Thank you very much. And thank you to all of the members of the panel. If you have written statements you can drop them off and we would appreciate that.

I believe I called Douglas Risedorf earlier, and I don't know if he's here now. Tim Gould

from the Sierra Club and Jordan Macha, and Kathy Taylor Albert, and Sajanie Werake.

MR. GOULD: My name is Tim Gould. I'm a resident of Seattle. Thank you very much for coming here to Seattle to hear our testimony on this very important matter. I am an air quality professional having worked in the field for about two decades in regulatory, consulting and research settings.

I'm also a transit and land use volunteer activist for Sierra Club Cascade chapter. But I'm here this evening, though, just as a citizen very concerned about this issue. And it is in that role that I come here to urge my support for this endangerment finding for the six greenhouse gases, including CO_2. And also I support the cause or contribute finding that the four greenhouse gases that comes from motor vehicle engine emissions also contribute significantly to those greenhouse gas levels.

And we certainly see that the greenhouse gas levels are rising. We're now up to approximately 387 parts per million. This is already above the level of 350 PPM that many scientists note is the level at which we need to maintain atmospheric CO_2 if we're to continue to thrive as a civilization. The

evidence of warming is all around us and that we have heard about this from many other speakers today. I'm not going to elaborate, but one of the things that I do want to point out is that the effects of climate change will also be very significant for air quality, and in particular for ground level ozone, ambient ozone concentrations.

And this isn't just a problem that is in notorious places like Los Angeles or Houston. It's here in Seattle as well. The Seattle area has been skating quite closely to the ambient ozone levels, and it's something which is very much dependent on temperature. And so as temperatures rise, as we can expect with climate change, it's going to put the area much more at risk for exceedances of the ozone standards.

This is something that will affect human health, particularly asthmatics and others at risk will be severely impacted. It's something that will obscure our iconic vistas of Mount Rainier. You know, these are real effects that clearly, I believe, that the evidence shows that EPA needs to take action. And you have a mandate both to look at current as well as future risks in evaluating what action to take. And it's especially the future risks of climate change

that worry me the most. And for that reason I strongly urge you to take action as noted. Thank you.

MS. KRUGER: Thank you very much.

MS. MACHA: My name is Jordan Macha. I'm a representative of the Sierra Club and I'm a resident of New Orleans, Louisiana. First, I would like to thank the EPA for hosting this hearing and listening to all our comments throughout the day.

New Orleans is a city that sits at ground zero for the effects of global climate change. As we all know too well, in 2005, Hurricane Katrina's wind and water destroyed much of our city. Eighty percent of New Orleans was underwater forcing the city to rebuild and repopulate over the next few years. While tragic, New Orleans came back building back greener and more sustainable than ever. What a waste it would be if the opportunity that arose from this tragedy was to be wiped away once again because we failed to act on climate change.

Sea level rise is a primary concern for coastal cities, especially those that sit at or below sea level. This not only poses a threat for coastal flooding, but as global warming becomes worse hurricanes become more violent and storm surge becomes stronger.

As a native Houstonian and a resident of New Orleans, the 2008 hurricane season hit me hard. Hurricane Gustav destroyed homes and uprooted lives in both New Orleans and Baton Rouge. Just a few weeks later, Hurricane Ike hit Houston ripping apart the roof of my parents' home causing them to relocate for weeks as they waited for power and waited for the contractors to repair their roof.

Climate change is real and it is affecting all of us, especially those of us situated along the warm coastal waters of the Gulf Coast. As temperatures and waters rise, Louisiana's natural protections, the coastal wetlands, continues to erode. Hurricanes become a greater threat as each year passes.

More effort must be done to accomplish our goals of turning back global warming. The oil, gas and coal industry won't adequately regulate themselves, as the coal industry alone continues to expand and convert many of the current coal plants in Louisiana. This is why we look to the EPA and the Obama Administration to use the clean air regulations already in place to move us forward.

Wherever we call home, we all face the challenges of global warming. We are depending on you

for leadership, and the Obama Administration to take bold initiatives on climate change. Help lessen the hurricanes in my backyard. Take action. We will support you.

MS. KRUGER: Thank you very much.

MS. WERAKE: Hi. My name is Sajanie Werake. I'm a resident of Bellevue, Washington. I'm a volunteer and a member of the Sierra Club Cascade chapter. I've lived in the Seattle area for the past 16 years or so and have noticed a significant climate change within those years. When I first moved here in '93, seasons were mild with average rainfall for this area. And what has struck me over the past nine or ten years is that the climate has changed dramatically. We have had heat waves in harsh summers, extreme windstorms which cut off power lines for days and put our lives and even our homes in danger. I remember in the not-so-distant past that we in Seattle and the surrounding areas experienced a huge windstorm which left us without power for three to four days, especially my neighborhood, and about seven days, possibly, around the surrounding areas of Seattle depending on the neighborhood you were living in.

Also this past winter was one of the

coldest winters that I have experienced as a resident of the Puget Sound area. I'm actually concerned about these dramatic weather patterns as a resident of the Pacific Northwest. As you may recall, greenhouse gas emissions are to blame in creating climate changes in our world, and the Pacific Northwest is not excluded from that.

Greenhouse gas emissions primarily come from one common source, the burning of fossil fuels, as you may know. Coal and fossil fuel is costly for the environment and it is costly for our lives. I would like our state's air toxicity to go down quite a bit so that we can once again enjoy our mild seasons and our rainfall which we need for our forests, spawning of healthy salmon in our riverbeds and ice for our snowcapped mountains and most of all for our citizens of the Pacific Northwest. Thank you.

MS. KRUGER: Thank you for your remarks.

MS. ALBERT: I'll speak from my prepared notes here and then I'll add what -- something changed with the microphone here. Can you hear me?

MS. KRUGER: You're fine.

MS. ALBERT: I'll add what came to me in listening to comments this evening. Good evening, fellow speakers, brother and sister Americans,

distinguished members of the Environmental Protection Agency. Thank you for coming to Seattle to hear public testimony regarding the relationship between global warming and public health.

My name is Kathy Taylor Albert. I'm 51 years old and I live in Portland, Oregon. I am an elementary and special education teacher, and I am also finishing a master's degree in traditional Chinese medicine. I'm honored and grateful to have the opportunity to speak today.

In light of the previous comments of Washington State Representative Shelly Short and others, I urge EPA to understand that, yes, the decline of the fossil fuel economy is precisely the point. Yes, this is about families losing their current jobs and being reemployed in green industries that prosper them, protect our environment, and allow for a habitable earth to be passed on to our children.

Clearly, this is a no-brainer. As well, EPA is well advised to favor the voices of the 10,000 scientists that acknowledge the realities of global warming, the far and away clear majority. Is this not plain common sense? This is how we operate in the United States. How often do we ever get to a full consensus?

I was born and raised in Los Angeles. As a young child, I remember days when my eyes would burn and run from the pollutants that floated in the atmosphere of that smog-laden city. On those days, I could not take a deep breath because my respiratory tract was so irritated by the toxic chemicals in the air I was breathing. I suffered walking pneumonia twice as a child and bronchitis more than once along with many colds. While various factors in my life contributed to my respiratory illnesses, I am sure that one cause of these disorders was the polluted environment in which I lived.

As an adult living in Los Angeles, I experienced a continual postnasal drip which my health care provider told me was a very common complaint among his other patients as well.

When I moved to the Pacific Northwest in 1996, this sinus condition cleared up. I have lived in both Seattle and Portland, Oregon now for nearly 13 years and have had only moderate to mild colds on infrequent occasion.

My mother of blessed memory lived in Los Angeles all of her life. She died at the age of 60 of chronic obstructive pulmonary disease. She smoked for less than one year of her entire life and she never

worked in a setting where she was exposed to respiratory toxins from the work environment. I can only attribute her disease to the fact that she breathed the polluted air of Los Angeles for 60 years.

Ladies and gentlemen of the Environmental Protection Agency, the pollutants that are responsible for the unprecedented rate of global warming that we witness are the same pollutants that have damaged my personal health and the health of my family. They come from new motor vehicle emissions, emissions from new motor vehicle engines, and from coal-fired plants, together, making up about 80 percent of all U.S. emissions.

The coastal regions are at the risk of becoming swamp land by the end of this century. The warming -- let me go back. The warming that these deadly chemicals cause is raising sea levels worldwide, putting highly polluted coastal regions at the risk of becoming swamp lands by the end of this century. These are statistics that I have gleaned from the Sierra Club. I am a member of the Sierra Club as well. More frequent and severe droughts and floods are creating water supplies that are more polluted and less reliable.

It is incumbent upon you and upon all

relevant government agencies to act swiftly and powerfully to control these pollutants that are endangering the public health and welfare in the United States and around the world.

It is morally and ethically untenable for you to do otherwise. The evidence of human-generated global warming is in from thousands of scientists around the world. Ladies and gentlemen, we have no time to waste. Thank you.

MS. KRUGER: Thank you for your remarks. And thank you to all of the members of the panel. We appreciate hearing from you. Now I would like to call up Tess Morgan and Dorli Rainey and Jay Arnold. Is Ms. Rainey here? No. Let's try Mike Smith. Nope. He didn't check in yet.

MS. MORGAN: Good evening, esteemed council members and citizens present. Thank you very much for this opportunity to present my ideas. My name is Tess Morgan. I represent myself. I am a concerned citizen, a public servant, a public health educator, and an ecological restoration forest volunteer steward in our local forests, the Duwamish watershed.

I appreciate with very high regard how complicated these issues must be. I specifically wish to request for direct attention to be paid to the

existing pollutants in our air, our soil and our water. Before more pollutants are added or approved to be added, the existing ones I would like to be addressed.

Specifically as it stands, current amounts of toxins are leading us to higher rates of cancers, diseases and learning disabilities in human populations, and I believe irreparable damage is occurring in our natural ecosystems and wildlife. Please choose solutions that regard the long-term improvements and benefits as more important than that of the short-term quick wins.

I strongly believe in the lessons that we have learned from our local leader, Chief Sealth -- for those of you who do not know, Seattle is named after him -- who mentioned a long time ago that whatever we do to the environment we're doing to ourselves. And he's quoted as saying "All things are bound together. All things connect."

I ask for your help to leave our world better than we found it for our future generations, and burning more coal and adding more pollution, to me, I feel is neither a sound nor viable choice for our long-term stewardship and survivability.

I really thank you very much for your time

and your attention.

MS. KRUGER: Thank you very much for those comments.

MR. ARNOLD: I am Jay Arnold. I'm board president of Future-Wise, Washington's premiere smart growth advocate. I'm a resident of Kirkland, Washington.

You've heard many comments today about how carbon pollution is an endangerment. In Washington State rising sea levels, reduced snow pack, changing weather patterns and the resultant increased stream flow, flooding, wildfires, and droughts in different parts of our state clearly endanger agriculture, property, wildlife, especially our treasured salmon, and the health and welfare of the people of Washington State.

Finding that carbon pollution is an endangerment is an important regulatory back stop, in addition to whatever action happens in Congress to create green jobs, put incentives in place for cap and trade or other solutions. It's clear that changes need to happen now, and your quick finding allows aggressive action and leadership here in Washington State and elsewhere.

In Washington State the majority of

greenhouse gas emissions come from transportation. And as we look at the impacts of transportation and how to reduce vehicle miles traveled, the decisions you make today last a long time.

Our local governments create plans for how they're going to develop and grow, and those plans made in the next couple of years will be valid for seven years. We want those plans to consider climate change. Your finding would be a big step towards that.

Automobile purchases that happen today will last at least ten years. Perhaps people will keep their cars longer in service, given the current economy. Moving to new technology there needs to happen today.

Finally, how we develop and grow, how we build our buildings, both what we build and where we build, how we build it could be a 50-year decision. And again, it brings into the importance of how we can move forward with your action now, and quickly and aggressively. I thank you for taking the time and being inside all day given a very rare Seattle day. Don't tell anybody about how nice it was today. Thanks.

MS. KRUGER: Thank you very much for your

comments.

MR. LEOVY: I'm Conway Leovy, professor emeritus of atmospheric sciences and geophysics at the University of Washington. I've conducted and supervised research on the climate system, participated in the preparation of the 2005 IPCC report, and taught numerous courses dealing with climate change. But my most important qualification is that I have six grandchildren. I guess you could say that the group that I represent is those six grandchildren.

The problem is difficult to address because, among other things, its effect on public health and welfare are slow developing, complex and mostly indirect. The knowledgeable scientists in the research trenches generally play fair in the global warming debate. Consequently, where there is uncertainty -- and there's always uncertainty -- their conclusions are couched in cautious terms like "the evidence suggests," "it is likely that," "may" and so forth.

This type of language pervades your endangerment and cause and contribute findings, and this is appropriate. The uncertainties are real. In contrast, global warming skeptics pull no punches, but

make no mistake, the overwhelming weight of evidence is that global warming is a public health problem of huge proportions.

There's a reason for the intense onslaught of attacks by global warming skeptics. If we deal with this problem with the vigor that is required it will change everything we do, everything. The stakes are enormous. We must get our response right.

Everyone will be affected by global warming and every one of us consumes fossil fuel and emits carbon dioxide every day. Control of carbon dioxide emissions cannot be successful simply by capping emissions from certain industries.

Traditional regulatory approaches to pollutant emissions, including systems like cap and trade, that worked well for containing sulfur dioxide emissions from coal-fired power plants will not adequately address the global warming problem. What is required is a system that charges for our best estimate of the true environmental cost of every pound of carbon burned. To be effective, the charge should be applied at the source, the mine head, the well head, or the port of entry of the fossil fuel.

To minimize the economic impact the resulting revenue should be fully returned to all

citizens, ideally in such a way as to encourage reduction in each individual's carbon expenditures, rewarding those who consume the least and penalizing those who use the most.

As the system evolves, the knowledge increases, the charges should change in order to keep atmospheric carbon dioxide below truly dangerous levels. I urge EPA to work with other federal agencies and the Congress to establish such a system nationwide and indeed worldwide. Thank you.

MS. KRUGER: Thank you very much for your comments.

MR. SMITH: Hi. My name is Mike Smith. I live just up the street. We reach for comparisons as we struggle to understand the monumental danger of global climate disruption and the actions of its deniers.

Testifying before Congress recently, Vice-President Al Gore compared global warming deniers to Bernie Madoff. He cited the fact that they, like Bernie, lied to the people who trusted them in order to make money. Scandalous sums of money. A less diplomatic speaker might have said global warming is creating an impending Holocaust and its deniers are like Nazi appeasers or bankers and industrialists or

bankers who supported Germany during World War II.

I, of course, wouldn't be so hyperbolic, preferring instead to draw a comparison with the cigarette industry's murderous campaign of cover-ups and lies. They had their paid experts, too. They suppressed their own research which proved that their business is a major threat to public health and safety. They invested heavily in efforts to mis-inform and confuse public opinion as well. Please do not listen to the lies of the global warming and climate disruption appeasers.

MS. KRUGER: Thank you very much for your remarks. Thank you to all of our panelists. I'm now actually going through, calling people that signed up for the after-hours slots.

And so actually, before I get too far into that list, if there's anyone here that signed up to speak earlier in the day or in the six to eight slot, and for some reason I didn't have your name or didn't call you, you can wave your hand and come on up. And if not I'll just keep plugging forward.

FROM THE AUDIENCE: I signed up at about 5:30, about 4:30. I was told it would be the six to eight slot. I haven't been called yet.

MS. KRUGER: Come on up. Everybody that

wants to speak is going to have a chance to speak tonight, so you don't need to worry about that. Let me see here. Hoang Nguyen. All right. And Vessie Ivanova. And John Growse. So when you start, just state your name so we can make sure we have the record that you spoke.

MR. KNIGHT: Good evening. I am Roger Knight. I am affiliated with the citizens of the United States. That's where I am. And by place of residence and 14th Amendment, citizen of the State of Washington.

I'm educated as an engineer, the education being a bachelor of science in mechanical engineering, and I've done some work in that field, and I've also been involved in a number of other things.

One of the things you learn to do as an engineer is you look at the numbers to evaluate any system and any problem. And I'm going to give you the numbers that strike me as most relevant to the global warming debate.

The amount of carbon involved in the natural carbon cycle is estimated to be 200 billion tons per year. That's the total amount that is photosynthesized and put back into the atmosphere as carbon dioxide through such process as metabolism and

combustion. Two hundred billion tons per year is the estimate.

The amount of carbon that is burned in the form of fossil fuels each year worldwide is 6.5 billion tons per year. It might increase to 7 or 8 billion tons per year in the next century or so. That's about 3.5 percent of the entire carbon cycle. The idea that our weather will be affected by the 3.5 percent of the natural carbon cycle that is accounted for by our use of fossil fuels is patently absurd.

The climate change effects that we have are natural phenomena. If the oceans rise, then we must move inland and uphill. If the glaciers grow we have to move south and we have a coastline further out. That's what happens. If Atlantis and Mu entered into a global warming treaty, I would submit it didn't do them any good. The only thing that the people of Atlantis could do is move inland and uphill. Here we are.

To say that global warming is a threat to future generations, well, we're the future generations of the people of Atlantis. Here we are. We're fine, even if Atlantis is below 50 fathoms of sea. The idea that we can affect a natural phenomenon in this matter is as patently absurd as the idea that we can affect

volcanic activity by sacrificing virgins.

The problem is that this economic regulation that you propose can have as much effect on our modern society, our economy, our ability to use energy, including energy from our coal and our oil shale that doesn't come from the Middle East, use of oil in Alaska Natural Wildlife Refuge, it can have the same effect on that as sacrificing virgins can have on the virgins. But, I submit, from a cost/benefit analysis there's plenty of cost and no benefit.

MS. KRUGER: Thank you for your comments.

MR. GROWSE: Good evening. My name is John Growse, and I'm a resident of Kenmore in Washington, a suburb here of Seattle. I'm an accountant, probably with different facts and figures. I'm also a committed vegetarian. And I would encourage the EPA to expand on your cause and contribute findings to include animal agriculture as -- the emissions from.

I'm very concerned about global climate, and I think everybody is well agreed on that. But the major, and frequently overlooked, cause for global warming appears to be animal agriculture. It's the leading source of methane and nitrous oxide emissions, which, combined with carbon dioxide, causes the vast majority of global warming.

Livestock production is responsible for about 18 percent of the global greenhouse gas emissions, which is more than all the cars, trains, ships and airplanes, the whole transport sector combined, in the world. It's responsible for 65 percent of the world's nitrous oxide, which has almost 300 times the global warming potential of carbon dioxide. Most of this comes from manure. And it's also responsible for about 37 percent of the world's methane, which has 23 times the global warming impact of carbon dioxide, largely produced by the digestive system of ruminants.

It's also responsible for about 70 percent of the Amazon deforestation where rain forest has been cleared for pasture land. Livestock now use 30 percent of the earth's entire land surface, mostly permanent pasture, but also including 33 percent of the global, arable land used to produce feed for livestock. And forests are cleared to accommodate this. According to the UN Environment Program's unit on climate change, there's a strong link between human diet and methane emissions from livestock.

I'd like to cut down here to the bottom line, which is what I would like to see the EPA do. I would like to see the government, perhaps led by the

EPA, eliminate subsidies to animal agriculture. I know a lot of agriculture has subsidies which are in question these days, but animal agriculture should be removed from the subsidy list. And there should be some promotion of the vegetarian or vegan diet for population similar to the campaign against smoking, which has proved beneficial to reducing that problem with the environment.

I see I'm almost out of time, so I think I'll just leave it there. Thank you very much.

MS. KRUGER: Thank you very much for your comments.

MR. NGUYEN: Good evening, distinguished guests, members of the media and noble EPA members. Thank you so much for holding this event here in Seattle, and spending all this long days and time with us here today.

My name is Hoang Nguyen. I'm a correspondent for Supreme Master television. I'm a computer scientist and I'm also a restaurant owner here in Seattle.

I'd like to share an interesting story to you which I read in BBC article. It was published on May 13th. It was a story about the city of Ghent, and it was an interesting story because this is the first

place in the entire world where this type of program was implemented.

And what the city of Ghent did was one day a week all civil servants and all elected council members eat vegetarian meals on Thursday. And in the month of September, they will be extending this program to schools, local schools as well. So this is the first city that recognizes and has done something about it, the link between global warming and the livestock industry.

As John pointed out, the reason why the city of Ghent has implemented this program is because the livestock industry, based on a United Nations report in 2006, entitled "Livestock Long Shadows," which you may be familiar with, the main piece of information in there, as John pointed out, was that 18 percent of all global greenhouse gas emissions, measured in CO_2 equivalent, is from the livestock industry. And that comes from refrigeration, transport, methane, nitrous oxide. All those things combine, as well as cutting down trees, which you all know about in the Amazon. Seventy percent of trees are cut down because of animal grazing.

So the city of Ghent took this study, as well as other studies, and looked at it, and they

implemented this very easily implemented solution to cut down a huge amount of carbon emissions and greenhouse gas emissions.

So, in closing, I urge the EPA to take a serious look at this example of the city of Ghent. It's, again, an article on May 13 in the BBC. And so thank you for your time, and I really appreciate what you all have done. Thank you.

MS. KRUGER: Thank you very much for your comments.

MS. IVANOVA: Good evening. My name is Vessie Ivanova, and I'm also correspondent for Supreme Master Television. I'm also scientist in the biotech and pharmaceutical industry for the last ten years.

I'm here also as a very concerned scientist and citizen about global climate change. I truly would like to present some information that has been very well researched about reversing global warming and draw the attention of the administrator of the Clear Air Act [sic] to the following facts.

According to a new report published by the United Nations Food and Agriculture Organization, the livestock sector generates more greenhouse gas emissions as measured in CO_2 equivalents, 18 percent, than transport. It is also a major source of land and

water degradation. It is the single largest producer of methane and nitrous oxide. According to the United Nations, the meat, egg and dairy industries account for a staggering 65 percent of worldwide nitrous oxide emissions.

Statistics from the Environmental Protection Agency show that animal agriculture is the number one source of methane emissions in the U.S. And there's a table on the EPA web site that everybody can go and take a look at.

A kilogram of beef is responsible for more greenhouse gas emissions and other pollution than driving for three hours while leaving all your lights on back at home. Each second, an area of tropical rain forest the size of a football field is destroyed to produce 257 hamburgers. Twenty-four hours deforestation releases as much CO_2 into the atmosphere as eight million people flying from London to New York.

Studies in worldwide food security estimate that an affluent diet containing meat requires up to three times as many resources as a vegetarian diet. Therefore, the most effective way to fight the global warming crisis is to stop eating meat, eggs and even dairy products. As Paul McCartney says, if anyone

wants to save the planet all they have to do is just stop eating meat. That is the single most important thing you could do.

The view of a British physicist Alan Calvert is what I would like to end on, who thinks that giving up pork chops, lamb cutlets and chicken burgers would do more for the environment than burning less oil and gas. Based on these facts, I would also like to urge the EPA administrator to recommend stopping government subsidies to the meat industry, restrict meat eating and recommend a vegetarian and vegan diet. Thank you.

MS. KRUGER: Thank you very much for your comments and for the comments of all of the members of this panel. Thank you so much.

Let's see here. Mary Spokane. Tyler Folsom, Robert Fulmer, and Genevieve Vayda.

MS. SPOKANE: Good evening. My name is Mary Spokane. I'm a resident of Olympia. Thank you for coming. Of everything that I thought I might speak about, I decided to share with you a prophecy that was delivered here in the Northwest, May of 1986. The entire prophecy is being published this week under the "Last Waltz of the Tyrants," and it will be on Larry King Saturday night. But this is just a section

of it. Remember, this was delivered by spirit called father to a tribe here in the Northwest, May 1986.

This Earth, this sweet, endearing planet of yours that is alive, is a gift of creation to evolve to a great status, the awakening of civilization and its disrespect for the land. Every great country has been ravaged of its forests. Its top soils are gone. And what the soil can provide is only the dust that rides upon a dry, warm wind. Man has moved from those regions to find other regions, but he hasn't learned from his errors and still takes the Earth for granted, thinking that, though seemingly the Lord's, the Earth was his to do whatever he wanted, and that it wouldn't matter in his lifetime. That is in error. In every civilization to this civilization -- and I use the word lightly -- there has been a raping and plundering of the Earth's resources, as you term them.

Actually, they are natural elements necessary for receiving the life, and even the Earth's life. But the most caustic, the most depleting, the most agonizing is a civilization bent on high technology and kept in check through greed and power, the power working all the way to the utilization of fossil fuels.

The greatest war that nature has to fight

and change in its physical embodiment, at the present time, has to do primarily with fossil fuels. It sounds simple, yet it is something that has been created as a power and bartering tool, an absolute necessity in your country and the world. It cannot be easily given up, because if it were those who are headed for absolute control no longer would have the cat o' nine tails in their hands.

The Earth, a living organism, has allowed and allowed and allowed. The Earth is having something very dramatic happen. All things in nature are crying out. They are in pain. Nature is alive. It is the breath of life in all things. Just because a tree doesn't talk to you doesn't mean that it is not alive. A plant is alive, the Earth is alive, a great rock is alive, for all things manifested in the kingdom of God are alive. I could go on into this a little more specifically, but just say they are crying out in pain or they are choking or they are being gased to death will perhaps give you a better understanding of an intelligence that can't speak to you directly, but it is just like your body with sores. Showering in acid, smelling poison and having a continuous bellyache.

This is what your wonderful Earth is going

through at the present time. And it is not without its own resources to change, and it will. It is already in the process of occurring. The Earth and all of nature, those grand dolphins, your brothers who fling themselves onto the beach and died, were making a statement. The little animals from whom pearls of wisdom come are making a statement, too, that they are dying. The fish that once used to find proper breeding areas --

MS. KRUGER: If you can begin to wrap it up, please.

MS. SPOKANE: -- which no longer exists are endeavoring to make a statement. Every time a great whale comes upon your shore it is trying to talk to you, tell you something. All of this does not go unheard or unheeded.

MS. KRUGER: Ms. Spokane, you're quite over time. Can you conclude, please.

MS. SPOKANE: The Earth is in the throes of great change, more profound than has been since the convulsions of its birthing. It has to make changes in order for it to continue to live.

MS. KRUGER: Thank you very much for your comments. The next speaker, please.

MS. VAYDA: Hello. My name is Genevieve

Vayda, and I live here in Seattle, and have for the past 25 or 30 years. I'm from Washington D.C., which is where you all may be living right now. And I moved out West because it's a little cooler out here in the summertime. I was born in Cuba and have lived sometime there, short bits of time, and also Indonesia, and Managua, Nicaragua. I'm pretty familiar with hot and humid and little animals and mosquitos flying all over the place. If you all ever wanted a nice summer you would move out here. It's incredible.

You may not know that we have extreme drought here in the summer, and it has become ever more so with each passing year since I have arrived. We're well known for our rain, but hardly anyone knows that we've become a desert in the summer as extreme. That's kind of an aside.

The point that I saw overlooked from a day of hearing these little testimonials, none had really mentioned a pretty big one. The EPA, and in this case especially, is looking at air quality issues, and I wonder where does the military fit into this picture, and why should we limit our discussions to small trucks and personal vehicles.

I think it would be a good opportunity to

look at some major impacts of equipment and operations that take place by virtue of decisions made in Washington. And I would like to be sure that the EPA does address issues related to the occasion and disposition of pollutants in and out of the military industrial complex.

And in our own little world here, I wonder why fireworks are still allowed in all of our hamlets, towns and cities across the nation. Each year I look at the displays and I just look at the pollution that's very direct and apparent, and it appalls me. I think there should be a lid on that.

I would also, you know, reflect on the explosion of these fireworks, you know, back at the war machine and look at the destruction that occurs to the environment from the use of incendiary devices of a larger scale. You are the Environmental Protection Agency, and I just thought it is a point that should be brought up today. Thank you very much.

MS. KRUGER: Thank you for your comments.

MR. FOLSOM: I'm Tyler Folsom. I'm the president of Cogneta, Incorporated. I want to assure you that America's engineers are ready to stop global warming. Give us the funding and we'll get that done.

I've been looking at urban transportation,

and I'm thinking that 100 miles per gallon is a rather wimpy target. I think that we can do a thousand miles per gallon, I want to tell you how to do that as much as I can within three minutes.

I think that we can do that with vehicles that are currently available today, cost less than $8,000, and get the system in place within five years. I can't explain this all within three minutes. More detail is on my web site at Cogneta.com. That's the first four letters of "cognition" plus the Greek letter "eta."

You can get a thousand miles per gallon by putting everybody on electric bikes. That might work in Holland or China, but Americans have been slow to accept that. To gain acceptance, I propose putting a third wheel on the bicycles and putting them under computer control. You can construct paved pathways for them so you have them out of the weather, and out of the way of heavy vehicles. These lanes ought to be half as wide as standard freeway lanes but they have four times the capacity. Use personal rapid transit technology to keep the traffic moving at a constant 25 miles per hour with no stops. That's faster than light rail when you factor in the time that you spend waiting for the train or making stops. These services

would have no stops, and that is 25 miles an hour as fast than you can drive your car at rush hour.

If you give careful attention to the aerodynamics of the vehicles, they can be powered by a fraction of horsepower electric engine and a battery weighing under eight pounds. The vehicle is likely to be more energy efficient than a bicycle.

I would like to thank Obama's energy department. As part of the stimulus package they have made 150 million dollars available to companies that produce game-changing technology, that reduces global warming and creates American jobs. I intend to apply for some of that funding for my own company and if there's any investors or foundations out in the audience, I would love to talk with you.

I would like to wrap up by saying this is not a technical challenge. This is a social challenge. Look at the best science and do what is good for America's health, and let's do it.

MS. KRUGER: Thank you very much for your comments.

MR. FULMER: Hello. I am Robert Fulmer. I am the precinct committee officer for precinct 1947 in the 11th district here in Washington State. Considering what's been going on in the Arctic, that

in the '90s it was predicted that in the year 2020 the Arctic, the North Pole, would be free of ice, this occurred five or six years ago, that the science is well behind what is actually occurring. Global warming is occurring much faster than the science is actually saying that it would, or at least it has up to this point.

And considering the amount of damage that has already occurred in the Arctic and around the Arctic Ocean, where the ice has now melted so much that there is now a race between the major industrial nations in order to stake out claims for oil exploration even into the Arctic Ocean itself.

When one considers the amount of damage that has been done here in this state, in just the last few years by floods where the floods have been so severe they have virtually cut off the state's transportation on the roads. Interstate 5 has been cut off twice now on two different occasions for a period of almost a week each time. And this is our main transportation hub. I believe the cost estimate was $100,000 an hour that it was costing. There needs to be something done, obviously.

One of the things I would really like to see done is that there be an emphasis placed on ending

clear-cutting. The clear-cutting has been a major devastation as far as actually making the rains much worse and causing the floods that we have, and with the forests as a carbon sink, we can go ahead and actually do a positive thing.

You can use it as a cure rather than just simply slowing down the amount that we are putting into the environment. We can go ahead and help to maximize the growth of our forests as a means of taking out the carbon that is already there. And I would like to see the Interior Department become involved in this as well. Thank you very much.

MS. KRUGER: Thank you for your comments. Thank you to all of the members of this panel. Now, we're going take a break in just a minute for 15 minutes. I want to -- well, let me see, actually, here. I'm going to read the speakers that I have on this list, and if there's anyone else that is interested in speaking, what I would like to have happen is for you to see -- we'll do a little show of the hands at the end, if there's anybody that is not on my list right now, to speak, and then you can see the folks at the desk so that when we come back from the break we'll be able to see a series of panels and finish up.

So that the people that I have on the list right now are Doug Starfield, Robert Bleu, Jane Chu, Tim Hesterberg, Chris Leman, Patti Lowe, David Thompson and Duff Badgley.

Is there anybody else here that signed up? So we have one. Anyone else? Two. Okay. So let's take a short break. We're going to start back up promptly at 8:15, and if the folks that wanted to speak can just tell the desk your names and then we'll go from there. Thank you.

(Recess.)

MS. KRUGER: Let's see here. We have Doug Starfield, Robert Bleu, Jane Chu, Tim Hesterberg and Chris Leman. Ms. Chu, you can start.

(Discussion off the record.)

MS. CHU: My name is Jane Chu. I'm a concerned citizen. I'm a vegan, and first of all, I would like to thank you and remain for you to be so patient with all of us, and listening very cheerfully still.

I want to begin by reading a quote from Dr. Henning Steinfeld, and he is the chief of United Nations Food and Agricultural Organization, Livestock Information and Policy Branch. And he says: Livestock are one of the most significant contributors

of today's most serious environmental problems. Urgent action is required to remedy this problem. And this is in the livestock's long shadow.

So as some other people have mentioned, that one of the very important greenhouse gases that livestock produce is methane. And methane emission, because of its short life span, 20 years remaining in the atmosphere, to measure by -- to spread it out by 20 years is 100 years, which is the way it was calculated in the UN report, its real impact on the warming effect is actually 72 percent instead of 23 percent of CO_2. So we have to take that into account.

And so also because of this calculation, methane emission causes nearly half of human-induced warming, and therefore methane reduction must be the priority. And so to focus only on CO_2 or entirely on CO_2 and to neglect what is the major contributor, the major field that contributes to the greenhouse gases, is unfair and also unconscionable. And the greatest contributor of methane, of course, is the animal agriculture.

Animal agriculture produces 100 million tons of methane per year, an amount which 85 percent is produced by the digestion process of the livestock, and 15 percent is produced by the massive lagoons

that's used to contain the untreated farm animal waste.

To give you just a very small example of the devastation of the animal waste it produces, Smithfield food, which is the largest pork processor in the world, produce 27 million pigs last year made into pork. And one single Smithfield subsidiary in Utah, which produce 500,000 pigs a year --

MS. KRUGER: Ms. Chu, I'm sorry, I'm going to ask you to wrap it up for those of us, given the late hour, and especially for those of us who are on East Coast time. You can submit your full remarks in writing into the record so we will have everything that you wanted to tell us.

MS. CHU: So I will just conclude by also quoting the IPCC chief, Dr. Pachauri's comment. Last year's press conference he advised people that, don't eat meat. He says: Don't eat meat. Ride a bike and be a frugal shopper. It is something the IPCC was afraid to say earlier but now we have said it. He also says, please eat less meat. Meat is very carbon-intensive commodity. Thank you.

MS. KRUGER: Thank you for your comments. Mr. Bleu.

MR. BLEU: Thank you. My name is Robert

Bleu. I'm the president of Shining Ocean. We are a seafood processor. We hire 125 people in Sumner, Washington. I believe we're representative of thousands of small manufacturing firms around the country. We're a recognized leader in our industry. To protect our customers we pasteurize our products. We do this with steam, which is generated by burning natural gas, and we are also a large user of electricity.

Business conditions are difficult in our industry. Estimates are that, industry-wide, volume is down about 20 percent. Thankfully, our business is down less. Over the last year every employee in Shining Ocean has taken a pay cut. I took the biggest one myself. Our hourly production workers continue to receive raises if they get a good review, and we haven't let everybody go because of the slow business, but they've had their hours cut.

Several key workers that I just researched, one was down 22 percent, his pay, from last year. The other one was down 28 percent because of lost overtime and shortened hours. In the last five weeks, four of those weeks our production schedule has been cut to 30 hours from 40 hours for our employees. So they lost a quarter of their pay. I continue to consider layoffs

to secure the future the company.

We have a dedicated skilled work force. The average time of employment of our employees is eight and a half years. I love these people, and I want to keep them. We are fighting for our lives keeping our head above water. Expensive regulation would be like throwing us an anvil. We can be confident that emissions are down this year because manufacturing of almost every type is imploding.

I strongly oppose expensive, burdensome regulations of carbon dioxide now. It's horrible timing. Its passage will make me significantly more likely to terminate people. We are far from hitting the bottom in this economy. We still have the unwinding of Chrysler and GM, the commercial real estate losses that haven't been realized by the banks, and the treasury bond/government debt bubble is going to have to be navigated.

I've considered the grim possibility that if it becomes too expensive to manufacture here I could fire about 105 of our 125 employees and have our products manufactured under license in Thailand, at much greater pollution, by the way. Creating much more pollution there. This is something I don't like to consider, but it's a possible future. If you add a

carbon tax to incoming manufactured goods from developing nations to counteract that, I don't see how they would not consider that a protectionist act, and protectionism bringing down world trade was one of the major drivers of the Great Depression.

You folks may not consider things like this, but I believe over the next few years all of us are going to be desperate to create one U.S. job. Don't drive them away through oppressive regulation. Thank you.

MS. KRUGER: Thank you for offering your comments. Mr. Starfield.

MR. STARFIELD: Hello. I'm with the national fuel cell education program, and we are a nonprofit 501(C)(3) educational outreach promoting a hydrogen economy and fossil-free future energy-wise. I have brought some posters to point out, first of all, the problems and then how we tend to -- how we propose to solve it. This is a snapshot, a daily snapshot. It's on a web site that shows the different global warming-induced catastrophes in the world. There are hurricanes and tornadoes, and basically weird weather.

And I have a photograph. This is Greenland melting down. This is apparently not a big press-

promoted photo. I had to dig to get this on a web site, but it is a real photo, untouched, unphoto-shopped. It's much worse now than it was when this photo was taken. I would use this, then, to promote the hydrogen economy. That's the problem.

I just wanted to say that we live in an ocean of air, as Carl Sagan might say, and basically we have liquid ocean as well, which you know, a glass of water is two thirds hydrogen and one third oxygen. We have all the fuel in the water that we're ever going to need to do whatever we have. Manufacturing, transportation, electricity for lights, and power in your homes.

I am proposing that we have a transition from fossil fuels through natural gas and biomethane towards a hydrogen economy. And that basically is all I came here to say today, but I did give you some posters and some educational material.

And I also would say that some practical things that you could enact as law is to add to, for instance, that when a car goes to get its smog certificate that there should be a CO_2 limitation on it. And bigger cars are going -- bigger engines, excuse me, are going to have probably more CO_2 output than a smaller engine. So I would say that they

should be taxed right there or they'd have to basically pay the registration on their tags for their licenses on a bigger vehicle because it's going to be doing more damage to the environment than a smaller vehicle, a smaller engine.

So I think that the EPA could add requirements, national requirements, to smog certificates that require vehicles to be within a range of CO_2 emission range. And also to add cost to their registration that would go towards promoting a hydrogen economy in the country. Thank you.

MS. KRUGER: Thank you for your comments.

MR. HESTERBERG: Thank you for coming. I'm Tim Hesterberg from Seattle. I'm a scientist and a parent, and the combination scares me because what I read in the scientific literature scares me. We could be facing really bad situations and it's my kids that are going to have to deal with that. I'm a statistician and so my remarks will focus on statistics and uncertainty. We're used to dealing with uncertainty and variability.

So, question one, is global warming real or is it just natural variability? Well, this reminds me of the situation of smoking and later secondhand smoke. Does it cause deaths. And there were hired

guns and the tobacco companies that tried to obfuscate the situation, but eventually the combination of statistical evidence beyond any reasonable doubt, with causal mechanisms, carried the day.

Similarly here, we have statistical evidence beyond any reasonable doubt, causal evidence and climate models that agree with observation -- observations that agree with the climate model. Science Magazine did a review of the scientific literature. 948 papers peer-reviewed. Zero of them disagreed with the scientific consensus.

So there is global warming, but there's still uncertainty about how bad it will be. So what do we do about it? Do we assume the best and not take real serious action. Well, if we do that, but then it turns out worse, then in plain scientific language we're screwed. What we should do is plan for the range of possibilities, not just the best possible outcome, but the middle and the worst outcome. It's a very asymmetrical situation. If it turns out worse than the average that's much -- that's really bad.

We should -- and if we act now, it may be that relatively cost-effective measures, the cheaper things, the low hanging fruit may be enough, but if we delay action, then we're facing much more costly

measures and much more harm. I disagree that we should postpone action. There is no better time to act than now.

Third point. If you do present value calculations, you should not use -- you should not discount the future. There's sort of the usual assumption that incomes are always going to rise. That it's always going to be easy to deal with things later. That may not be the case. Incomes may not continue to rise forever. And also using that same logic would say that I shouldn't save any money for my kids because their incomes are going to be higher than mine. And I reject that.

So take action. Don't leave a desert world for my children. Thank you.

MS. KRUGER: Thank you for your comments. Mr. Leman.

MR. LEMAN: My name is Chris Leman. I'm a social scientist who has followed environmental and transportation issues for many years, previously at the University of Washington. I also was in the office of the Secretary of Interior Cecil Andrus. I support EPA's finding that greenhouse gases endanger public health and welfare and cause or contribute to climate change.

I want to make two points. One of my other activities is that I've organized The Quiet Coalition to try to protect Seattle's strong noise ordinance. I think I'm qualified to say that you mustn't be spooked by claims by people in the Office of Management and Budget that this finding somehow would bring EPA, both feet, into regulating local noise. Local noise is definitely a threat to public health and welfare. But in no sense does it accumulate on a national or an international basis in a way that threatens every American and every inhabitant of the Earth in common in the same way that climate change does. So I just don't think that those two things are the same at all.

The other major point is that, you know, transportation decisions is our region's largest contributor to greenhouse gases and growing. A growing portion of that problem is from our region. And there's nothing more important than this finding to empower the EPA to insist that this be looked at.

I served on the Puget Sound Regional Council's transportation air quality advisory committee until the PSRC declared mission accomplished and disbanded the group. Of course the mission wasn't accomplished, but what had happened was the way that the National Ambient Air Quality Standards worked is

that if pollution dissipates and is diluted, then it tends to get ignored, and we always manage to keep just short of getting sanctions from EPA. The result was that we have vastly expanded highway capacity by adding lanes to I-5, and with all the carbon monoxide and additional particulates and greenhouse gases that that brings along.

In recent years we have also expanded -- agreed to expand lanes on the I-90 bridge and Interstate 405, and we are now in a process, unfortunately, of agreeing to add lanes to the State Route 520 bridge. All of these decisions are the single largest contributor of this region to greenhouse gases and climate change, and yet any effort to raise this issue has been unsuccessful because of this finding not being available, and because the existing criteria pollutants don't really get at climate change.

And I'll give you -- have to end here, but I'll give you an example that the State Route 520 environmental impact statement that is currently led by the Washington State Department of Transportation, Sound Transit, and the Federal Highway Administration is refusing to study a climate-friendly approach that would not expand lanes on the bridge. They are

currently looking at only alternatives that will expand lanes on the bridge, and I'm sorry to say that Governor Gregoire, Mayor Nickels and City Council President Conlin all are, unfortunately, agreeing to that approach.

These are all otherwise very enlightened people, but what it shows is the local political pressures are so strong, just as they were before the 1970 Clean Air Act was passed, and the reason why we have criteria pollutants and National Ambient Air Quality Standards is because we cannot -- we could never, and we cannot now, rely on local decision makers. We have to have EPA given this power, and with that insistence we in Seattle will contribute our part to keep the climate from being worsened by expanding freeways. Thank you.

MS. KRUGER: Thank you for your comments. Thank you to all of the members of this panel. And if you can give a copy of the remarks you made to our recorder that would be delightful.

And I believe that we are now at the last panel of the evening. Patti Lowe. David Thompson, Duff Badgley, Elizabeth Watson and Stacy Noland. Is there anyone else here who signed up to speak or are we -- is the list complete? All right. You can begin

whenever you're ready.

MR. BADGLEY: Hi. I'm Duff Badgley. I'm organizer for One Earth Climate Action Group. I'm car free, plane free, meat free. The EPA must impose emission caps now because carbon trading is a lethal subterfuge. James Hansen, director of NASA'S Goddard Space Institute, said in September 2008 and I quote: Carbon trading is a subterfuge designed to allow business as usual to continue. End of quote.

Carbon trading is and always will be a bribe to get industry to the climate crisis table. It is an unnecessary bribe if we can muster the vision and courage to implement effective climate programs without caving to our worst polluters as carbon trading does.

President Barack Obama, Washington Governor Chris Gregoire and many of our federal and state legislators, and thousands of misguided climate activists are engaged in lethal denial now by pushing carbon trading legislation. But the recent EPA endangerment ruling gives us a chance to impose emission caps with no escape. The EPA must do that now.

Carbon trading hasn't worked to reduce greenhouse gas emissions. It won't work, it can't

work. Overwhelming evidence available for years from Europe confirms this. The leading European fuels analyst for Citigroup said in 2008: The European Union's Emission Trading System had, quote, done nothing to curb emissions, and acted as a highly regressive tax falling mostly on poor people. End of quote.

Waxman-Markey is the American federal climate bill receiving the most attention now in its carbon trading legislation, and like all carbon trading schemes it creates huge escape ways for the most polluting corporations to avoid reducing their GHG emissions. And these loopholes gut the program. So GHG emissions will continue to rise under carbon trading, as they have been doing and do now in the EU.

Failure to reject carbon trading and impose direct government emission caps will devastate our earth. Global ruin will likely follow. Average temperatures rising by 4 to 7 degrees centigrade, the collapse of global agriculture, and most of the earth rendered uninhabitable. Emergency climate crisis action is needed now.

One, the EPA must impose severe GHG emission caps on all sectors. No escape. Two, impose stiff carbon taxes to raise the cash for restructuring

our economy. Three, recycle carbon tax funds to poor to offset high costs. Four, recycle massive carbon tax funds to the global south, chiefly to preserve rain forests. Five, withdraw all occupying troops from Iraq, Afghanistan and pre-1948 Palestine. Route this war dividend to climate programs. Six, leave fossil fuels in the ground. Seven, invest in safe, clean and community-led renewable energy. No crop-based biofuels.

All crop-based biofuels, the overwhelming science shows, trigger global food shortages, hunger and starvation. All crop-based biofuels trigger rain forest disruption, massively worsening our climate crisis by emitting plumes of CO_2.

I have here, and will leave with you, a stack of fliers signed by the public saying Obama commits biofuels crimes against humanity by forming the biofuels inter-agency working group of which the EPA is a member. Constitutes a crime against humanity as defined by the United Nations in 2007. Thank you.

MS. KRUGER: Thank you for your comments.

MS. LOWE: Hi. I'm Patti Lowe and I'm Vice President of Matrix Northwest. We're an energy conservation company based in Seattle. Back in 1989, I cofounded Greenhouse Action, a citizen's

organization which had an advisory panel of scientists. And in the early '90s we worked with local governments, including Seattle, to have local cities adopt global warming policies. And back then the science was very strong.

The scientists on our advisory board were saying, you know, we may not be 100 percent certain, but it makes a lot of sense to act now to prevent diseases from increasing due to warming temperatures, and to prevent wildlife from becoming extinct, from their habitat changing and hurricanes from occurring more rapidly. Back then it was a lot harder to get people's attention, and nevertheless it was clear as an insurance policy we should be taking action now.

Well, now I'm asking you to take action now. The organization I cofounded is no longer in existence, but several years ago I cofounded a business because I wanted to do something that would be profitable for businesses as well as reducing greenhouse gas emissions. And so we have a permanent steam-trapping system. We work with manufacturing plants that use steam, such as food processing plants, oil companies, lumber mills. And the return on investment is typically two years or less.

And what it has really opened my eyes to is

there's a whole lot of potential in manufacturing plants to reduce greenhouse gas emissions permanently, while saving companies money. And I think if we put our creativity to it there's a lot we can do to reduce greenhouse gas emissions, have it be cost-effective for businesses and people, and but we also have to look at what are the costs of inaction, and that's not mentioned as frequently as what are the costs of doing something about greenhouse gas emissions.

So thank you for being here and listening to us and the various ideas. I'm in agreement, we don't want to make regulations too burdensome for small businesses, and we want to focus on what are the biggest sources of greenhouse gas emissions, such as the emissions from coal plants that need to be either not put out or offset. Cars. And the largest industrial emitters of greenhouse gas emissions. Thank you.

MS. KRUGER: Thank you very much for your comments, Ms. Lowe. Pass the microphone along.

MR. THOMPSON: My name is David Thompson, and I've been involved in a lot of government stuff most of my life because I used to donate money from a gold mine up in Skagway. Hired Sarah Palin's folks to be the schoolteachers there back in the '70s. She

knows all about the gold mine that's been stole from me by her and her government people now. And it's still got a lot of gold in it.

I started the EPA with donation money, by the way. Government didn't pay for that. I put up the money and convinced the President that we needed some kind of control back in the '70s. What I want to get at is, I had laboratories all over the country from my patent money and my mother's gold mine funds, which I did all the years for nonprofit purposes. I paid for the EXXON VALDEZ cleanup in its entirety, and made settlements with all the Alaska people and so forth.

In my laboratories I was trying to develop magnetic force for years. And we did in '77. And these triangular vehicles you see in area 53, or people are reporting all the time, are real and they're flying saucers that belong to us. And I wanted to do away with cars by 2005, and the government has done with away with me almost completely.

Police in Tacoma tried to kill me one time when they had me in jail, and they had me in Western State seven times for being delusional until they got a Supreme Court ruling they can't take you there

without due cause any more in 2001. And they never bothered me since, naturally.

I also had my laboratory develop a system of cold fission, not fusion, where you feed a -- have a solution that eats the atom itself like an acid. Only it eats the atom up instead of the molecule. And it slowly releases electronic energy inside of the solution. In one pound of steel -- a lot of different materials produce this electronic or electric energy at a very high voltage. One pound of steel produces 5,000 kilowatts for 30 days, 24 hours a day. And the government knows about that. All the scientists from different countries in the world came and looked at it when we got it working and we used that in flying saucer stuff to power them.

And it don't take hardly any power at all, naturally. It's just burning one pound of steel for 5,000 kilowatts for 30 days. Pretty amazing. An old junk car produces a lot of power. But you also have to consider the fact that if we had free electricity -- the electricity goes somewhere when you use it. If everybody wasted electricity it's all going in the earth. The earth is the ground. So if you talk about global warming, you might end up melting the earth when everybody is using as much electricity as they

can get their hands on.

I could tell you a whole lot of things about -- I've got a list of the National Geographics here that I put my scientific stuff in that I can give anybody that wants to look up some of the copies.

We also created solid state fusion in -- Sandia Laboratories were my laboratories. President Bush senior came and took it over with the army. But he told me he was going to do that the day before on the phone. So I had this guy work with my scientist that build it and I had him destroy the --

MS. KRUGER: Mr. Thompson, if you could, given the late hour, if you could conclude.

MR. THOMPSON: Pardon?

MS. KRUGER: If you could wrap up.

MR. THOMPSON: If anybody wants to get this list of National Geographics and look up pictures of these things I'm talking about, I funded the National Geographic for years and they did all our scientific stuff, programmed in the Geographics. I've got a list of a few you can look up and see pictures of this stuff.

MS. KRUGER: Thank you very much for your comments, sir.

MS. WATSON: My name is Elizabeth Watson,

and I'm a student working on my master's in environmental management at Duke University. I'm not here to speak on behalf of any group or institution. I'm actually just in town visiting my brother, so I'm with you guys on East Coast time. I'm here because I wanted to talk to you all as part of the generation that's going to be directly affected by the decisions that you make in the next couple of years.

I've been really inspired and encouraged by a lot of the comments that we've heard so far today and the overwhelming support for the EPA's finding. I also support this finding, and not just based on the science but on my personal experience. I grew up in Florida, and I cannot remember the last time that there was not a drought, but I can remember a time that hurricanes only threatened the coast instead of crossing over the state three times in a year.

Then I moved to Los Angeles, and just the view from my office window taught me that you can, in fact, hide an entire mountain range behind smog, and unfortunately, on more days than I was actually able to see that mountain range, I could see the hills that were a lot closer covered in flames or gray smoke because of the wild fires.

And finally, when I moved to North Carolina

this year, my professors couldn't resist showing everyone in the class this picture of them that was taken just last year standing in a huge dry pit, and then explaining that that pit was actually one of the main reservoirs that supplies water to the state of North Carolina. These things have really been enough to prove to me that we're polluting the air. We're changing the climate, and we're endangering the current and future generations.

A few weeks ago I began my summer internship lobbying for renewable energy at the state legislature. And it only takes a few weeks of sitting in on committee meetings to realize that the environment rarely wins out over the dollar and the status quo.

In response to this shortsightedness, I would ask the government to consider the future costs of doing business as usual. Consider the detrimental effects of climate change on human health and quality of life, consider the loss of biodiversity, and when we do consider the dollar, consider the competitive edge that would be gained by leaving the world in carbon regulation. Consider the jobs that would be created by building a new infrastructure based on clean energy.

And consider the testimony that we heard this morning about the billions of dollars that states pay out each year to the damage caused by climate change.

In light of all of this, I sincerely ask that the EPA move as quickly as possible to regulate greenhouse gases emission to the fullest extent in their authority. We cannot wait for Congress to pass effective legislation, and we cannot expect other nations to begin cleaning up our mess before we do.

We have all the resources we need to solve the climate crisis and revitalize the country, but we cannot wait any longer to get started.

MS. KRUGER: Thank you so much for your comments.

MR. NOLAND: Good evening. My name is Stacy Noland, and I am the founder and CEO of the Moontown Foundation. We're a nonprofit social venture that's dedicated to ending environmental, social and economic injustice, and we do this by working with and preparing low income disadvantaged youth for basic or entry-level careers in the emerging green economy.

We work to achieve our mission also by training folks how to become energy-efficiency auditors, solar panel installers, and building

retrofit technicians. Our efforts are meant to reduce the financial impact of the rising energy cost that low income households have to pay for water and electricity.

We're also working with the city of Seattle and the State of Washington to help it achieve its over-arching greenhouse gas reduction goals. I'm sure you heard about that from the mayor and the governor earlier today.

I sit before you today to urge you to take clear, decisive and immediate action to regulate the amount of greenhouse gas emissions our nation puts into the atmosphere. Now, I understand the cost of regulating carbon will be high, and that the options put forth, such as a carbon tax or a cap in investment system, are still being assessed. That notwithstanding, the price we pay today and tomorrow will pale in comparison to the day when the oceans rise and Manhattan, Miami and Mobile are under 20 feet of water. Or when countries like Bangladesh or Indonesia, with hundreds of millions of people living at or close to sea level, have to be evacuated and relocated.

Who should take on these eco-refugees, I ask? Well, in my opinion those countries responsible

for putting these folks in that predicament should. As they say in the china shop, you break it, you buy it.

Meanwhile, I'm sure you all know what the IPCC has to say about climate change so I won't go into that. But I will quote a quick statement, 50-word statement that they recently released that there is new and stronger evidence most of the warming observed over the last 50 years is attributable to human activity. When we investigate this issue historically we find that with the industrial age, greenhouse gas emissions spiked up. We find that when World War I and World War II happened, with all the planes and the trains, greenhouse gases spiked up, and when we created the inner city highway system, greenhouse gases spiked up.

My big fear is that there are two vehicles for every three people in this country. I worry that if China and India, with 3.5 billion people, replicate what we've done, we're in a whole world of hurt.

In closing, it is blatantly clear to me that drilling for oil and mining for coal and indiscriminately burning these fossil fuels is not the way out. Thus, it is imperative for us to invent new technologies and invest in innovative, forward-

thinking business models to make our way to creating a post-carbon economy.

We must also remember to involve every citizen in America in this transition, for it is all hands on deck. Thank you for your time and the opportunity to sit before you and express my thoughts about the situation regarding climate change. If you make this bold move to regulate greenhouse gas emissions, I'm confident that countries like China and India will follow our lead, and the leads of American citizens seven generations from now will thank you for saving their planet.

Again, I encourage you to do the right thing and regulate greenhouse gas emissions in the United States immediately. Thank you for your time and safe flight back to D. C.

MS. KRUGER: Thank you very much for your comments, Mr. Noland, and you have the pleasure of having the last word among all of the commenters here today.

It has been a really good day here in Seattle. We've heard from a lot of people. We've gotten a lot of very useful comments. I appreciate all of you who took the trouble to come here and speak to us, and it was well worth it. I love Seattle. I

went to school here. It's a great town. It was great to be able to come back here and hear from all of you. So thank you and have a good evening.

(Hearing concluded at 9:00 p.m.)

C E R T I F I C A T E

As Court Reporter, I hereby certify that the foregoing document is an accurate transcription of the facts, speakers, and proceedings of the hearing held on May 21, 2009.

Cheryl Macdonald
Court Reporter