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REGULATION OF GREENHOUSE GASES UNDER THE CLEAN AIR ACT

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

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COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

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C O N T E N T S

REGULATION OF GREENHOUSE GASES UNDER THE CLEAN AIR ACT

TUESDAY, SEPTEMBER 23, 2008

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 10 a.m. in room SD–406, Dirksen Senate Office Building, Hon. Barbara Boxer (chairman of the committee) presiding.

Present. Senators Boxer, Cardin, Klobuchar, Whitehouse, Inhofe, Voinovich, Craig, and Bond.

OPENING STATEMENT OF HON. BARBARA BOXER U.S. SENATOR FROM THE STATE OF CALIFORNIA

The Chairman. On April 2, 2007, nearly a year and a half ago, the Supreme Court of the U.S. confirmed in no uncertain terms that EPA has authority to regulate greenhouse gas pollution under the Clean Air Act. The Court ended years of litigation by ruling against the Bush administration and it made clear that EPA must move forward. The language was very clear.

At first, EPA moved ahead on greenhouse gas regulations, as the Supreme Court directed. EPA reviewed the science, as we know from Jason Burnett's previous testimony, and the proposed endangerment finding that the White House refused to release. EPA Administrator Johnson reached the conclusion that, yes, greenhouse gases do endanger public welfare. He deferred the issue of endangerment of public health, which is equally clear, but the proposed endangerment finding drafted by EPA was all that was needed to issue regulations.

Administrator Johnson told us in July of last year that EPA was planning to issue final rules on regulating greenhouse gases by the end of 1908. We also know from prior hearings that the endangerment findings and EPA's proposal for regulation had been given the green light by Mr. Johnson and other cabinet officials.

Unfortunately, after a long delay, the Bush administration stopped progress on this rulemaking in its tracks. The White House and Administrator Johnson discarded the key aspects of the work on this rule. Instead, they took the weakest step possible in order to further delay action. This was EPA's "Advanced Notice to Proposed Rulemaking". The notice contained a series of letters from members of President Bush's cabinet, and other executive officers, making arguments against Clean Air Act regulation. Even Administrator Johnson wrote an introduction to the notice, undercutting the work of his own EPA staff.

We know this routine all too well. This disregard for the law, misleading the public, and stonewalling, which we find unacceptable. Many of us do. The stakes could not be higher. The Intergovernmental Panel on Climate Change (IPCC) has warned of the dangers that global warming poses for all of us, such as droughts, extreme weather events, threats to water resources, more frequent and intense wildfires, threats to public health, and the extinction of up to 40 percent of the species on the planet. The Bush administration's own departments have found similar facts.

Time is not our friend. We have a window of opportunity which we must take advantage of. And every moment that we wait to address global warming makes it harder to do what is necessary to avert the consequences that would be devastating for our Nation and the world.

We need to consider all of the tools available to us to avert the dangers of unchecked global warming. And I continue to believe we need a comprehensive law to reduce global warming emissions but, in the meantime, there is much that can and should be considered under the Clear Air Act. This law has a proven track record over the last 40 years. It has been very effective in reducing pollution and in saving lives.

Our witnesses today will set the record straight on the value of the Clean Air Act and addressing greenhouse gas emissions. They will describe opportunities available now under the Act to move forward. This hearing will provide a road map for the next administration to finally take effective action on reducing global warming emissions. After this hearing, this committee will prepare a report to the next President on the Clean Air Act's potential role in combating global warming, so that President will have the facts in front of him.

I want to make one last point in the time I have remaining. We will hear a lot about how this would be a disaster for the economy. I want you to know that, in my home State, we are suffering from a horrific economic situation because we have the most mortgage foreclosures of any State. We have more than 25 percent of all of the foreclosures. And I will say this, our republican Governor, working with our democratic legislature, passed the toughest global warming legislation in the country. And I am told unequivocally, by both sides of the aisle in my State, that were it not for this law, and the fact that 400 new companies have been set up—solar, wind, geothermal—and I visited many of these new startups, that without this, we would be in far worse shape that we are in. Many of the workers that have been laid off from the construction industry are working putting roofs on, they are working in new enterprises all across my State.

So, when you hear that this is devastating to the economy, I think it is important to note that we have tried it, we are doing it and, but for that, we would be in far worse shape than we are in at this point.

Senator Inhofe.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Madam Chairman. Let me say first that the Senate Armed Services Committee has Secretary Gates there and I will have to be going back and forth——

The Chairman. I understand.

Senator INHOFE [continuing]. in this same building here. I am hopeful that today's meeting will focus less on political theatrics and more on the substantive matter before us today, which has very urgent and troubling indications for our already fragile economy. This matter has a very real possibility of regulating greenhouse gases under the Clean Air Act.

Now, rather than trying to uncover who knew what and when during the deliberative process at the EPA, this hearing should begin our substantive look into the Clean Air Act and just exactly how it will work in relation to the regulation of greenhouse gases.

Now, despite my disagreement with the Supreme Court in the Massachusetts versus the EPA case, I recognize that this committee has the responsibility to evaluate the implications of that decision which, in my view, have failed to focus until now. Therefore, I am grateful, Madam Chairman, for your decision to have this hearing today and hope that you will commit to work with us through this issue and take a hard look at all of the potential impacts, as the climate debate moves forward next year.

As more and more analysis is done about the potential implications of regulating greenhouse gases under the Clean Air Act, the more alarming the consequences become. While some may seek to dismiss these analyses as scare tactics or exaggeration, let me offer up the recent D.C. Circuit Court decision vacating the current rule as a reminder of how strictly the courts interpret the provisions of the Clean Air Act.

So, while some of the environmental community or the Agency may see an inherent flexibility in the act to soften some of the prescriptive permitting requirements that could be triggered if greenhouse gases are regulated, I am not so certain they should rush into these early decisions. My concern with the potential disastrous effect of this issue are not just mine alone, several other members on both sides of the Capitol and on a bipartisan basis, have already expressed concern publicly with the Massachusetts case.

And, with the potential regulation of greenhouse gases into the Act, John Dingell, the Chairman of the House Energy and Commerce Committee, in a recent hearing, even called the situation a "glorious mess, in that this has the rich potential for causing a fine economic mess and a splendid manufacturing industrial shutdown." Pretty strong words from John Dingell, and I agree with that.

We will also hear today from the United States Chamber of Commerce, who will voice a very strong opposition to any proposed rules into the Act and they will discuss the new analysis that finds over one million mid-sized to large commercial sector source could become exposed to PSD permitting requirements, including 92,000 health care facilities and 100,000 schools and other educational facilities. In addition, almost 200,000 industrial manufacturing sources emit enough CO_2 per year to become exposed to the PSD

permitting requirements, as well as over 17,000 large agriculture sector sources.

Keep in mind that, as part of the PSD process, regulated sources are often forced to install best available control technology (BACT) which, in the case of CO_2 , has not been determined. This additional requirement would lead to even more bureaucratic delay and legal challenges, in a time of record high energy prices, economic uncertainly, and dire financial news. And, with Treasury Secretary Paulson testifying at this hour, as we speak, on the largest government bailout in history, the only positive economic data I can gather under those scenarios is for the legal profession, as they will have a feeding-frenzy of new rules to challenge.

Madam Chairman, this is only one example of the consequences of potential regulation under the Clean Air Act. There is also the State implementation plans, the New York Source Review Provisions, which can be applied in two different ways, and I could go on.

It is my hope that this hearing will lead to a broader understanding of the dire implications of regulating CO_2 , doing it through the courts, something that those proponents of this have failed to be able to do through the legislative process. So, I agree that it is a disaster for the economy and hopefully we can minimize some of the effects that will be coming from this.

The Chairman. Senator, thank you. I think what you have laid out and what I have laid out shows why this is such an interesting committee. I mean, you know, one of us sees this as an opportunity to make life better for our people and to stimulate the economy and the other sees it as a major disaster. And that is why, in my opening statement, I talked about our experience in California——

Senator INHOFE. Mm-hmm.

The Chairman.—in acting in a bipartisan way. I don't know that I could convince you of this, I doubt that I can, or you can convince me of your position, but I think the respect we have for one another is very important——

Senator INHOFE. Yes.

The Chairman.—and I appreciate that respect——

Senator INHOFE. And that's why we have witnesses here.

The Chairman.—in your testimony.

Senator INHOFE. Mm-hmm.

The Chairman. And I think what is important is, the one thing in your opening statement I would like to take issue with is something about political theatrics. I don't know what you are talking about, political theatrics. What I am trying to do as the Chairman, and with your help as ranking member, is get to the facts. Get to the science, get to the facts. We may come out differently, but I don't think there needs to be any theater about it at all. It is, it is really—I found that a little disturbing and I would hope that maybe you would reconsider in your future statements that you don't imply that is what this is about, because I don't really see it.

Senator INHOFE. Well, Madam Chairman, I would have to check with staff—we have had 25, 26 hearings on these subjects and we have brought in people from all over. It is—there is a philosophic difference, we all know that.

The Chairman. Yes.

Senator INHOFE. But I think this hearing today—one of the things that I am concerned about, of course, is the cost of this thing. Right now, we have some extremely dangerous economic signs and this could make that even more severe.

The Chairman. I understand——

Senator INHOFE. Yes.

The Chairman.—and that is totally legit. And that is where we depart. As I say, some of us see this as an economic opportunity and some as a disaster. That's fair, but I hope that if you do see any political theatrics coming from this committee, at the moment they happen, just call it that.

Senator INHOFE. Mm-hmm.

The Chairman. But that is not what my purpose is.

Senator INHOFE. That's a good idea.

The Chairman. And I thank you very much. And I know you have to go in and out and I respect that as well. Senator Klobuchar.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Madame Chairman, I am hopeful that today's hearing will focus less on political theatrics and more on the substantive matter before us today, which has very urgent and troubling implications for our already fragile economy. This matter is the very real possibility of regulating greenhouse gases under the Clean Air Act.

Rather than trying to uncover who knew what and when during the deliberative process at the EPA, this hearing should begin our substantive look into the Clean Air Act, and just exactly how it will work in relation to the regulation of greenhouse gases. Despite my disagreement with the Supreme Court in the Massachusetts v. EPA case, I recognize that this Committee has a responsibility to evaluate the implications of that decision, which in my view we have failed to focus on until now. Therefore, I am grateful, Madame Chairman, for your decision to have this hearing today, and hope you will commit to work with me through this issue and take a hard look at all of the potential impacts as the climate debate moves forward next year.

As more and more analysis is done about the potential implications of regulating greenhouse gases under the Clean Air Act, the more alarming the consequences become. While some may seek to dismiss these analyses as scare tactics or exaggeration, I only offer up the recent D.C. Circuit Court decision vacating the CAIR rule as a reminder of how strictly the Courts interpret the provisions of the Clean Air Act. So while some in the environmental community or the Agency may see an inherent flexibility in the Act to soften some of the prescriptive permitting requirements that could be triggered if greenhouse gases are regulated, I am not so certain they should rush to those early conclusions.

My concern with the potential disastrous effects of this issue are not just mine alone. Several other Members, on both sides of the Capitol and on a bipartisan basis, have already expressed concern publicly with the Massachusetts case, and with the potential regulation of greenhouse gases under the Act. John Dingell, the Chairman of the House Energy and Commerce Committee, in a recent hearing even called the situation a "glorious mess" and that this has the "rich potential for causing a fine economic mess and a splendid manufacturing and industrial shutdown."

We will also hear today from the United States Chamber of Commerce, who will voice their strong opposition over any proposed rules under the Act. They will discuss their new analysis that finds over one million mid-sized to large commercial-sector sources could become exposed to PSD permitting requirements, including 92,000 health care facilities and 100,000 schools and other educational facilities. In addition, almost 200,000 industrial manufacturing sector sources emit enough CO_2 per year to become exposed to PSD permitting requirements, as well as over 17,000 large agricultural sector sources. Keep in mind that as part of the PSD process, regulated sources are often forced to install Best Available Control Technologies, or BACT, which in the case of CO_2 has not been determined. This additional requirement would lead to even more bureaucratic delay and legal challenges.

In a time of record high energy prices, economic uncertainty, and dire financial news, and with Treasury Secretary Paulson testifying at this hour on the largest government bailout in history, the only positive economic data I can gather under those scenarios is for the legal profession as they will have a feeding frenzy of new Rules to challenge. Madame Chairman, this is only one example of the consequences of potential regulation under the Clean Air Act. There are also the State Implementation Plans, the New Source Review provisions, which can be applied in two different ways, and I could go on. It is my hope that this hearing will lead to broader understanding of the dire implications of regulating CO_2 under the Clean Air Act, which it was never intended to do, and that as we move forward into next year, this Committee will exercise its jurisdiction to prevent any of these harmful and unnecessary regulatory impacts from happening.

OPENING STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM THE STATE OF MINNESOTA

Senator KLOBUCHAR. Madam Chair, thank you for holding this meeting. And I have to say I am disappointed we are having the hearing, but for very different reasons than Senator Inhofe.

We were here almost 17 months ago to the day and listened to EPA Administrator Johnson outline his plans to reach a decision about whether greenhouse gases constitute an endangerment to public health or welfare as defined by the Clean Air Act. Seventeen months have gone by and still no decision. It is astounding that we are still waiting for a finding that the EPA's own staff that should take no longer than three or 4 months.

Of course, the EPA has announced their endangerment plans under protest, as the Chair so well pointed out. The Supreme Court effectively ordered the Agency to go back and determine whether greenhouse gases may be reasonably anticipated to endanger public health or welfare. The Court shifted the debate from whether the EPA should regulate greenhouse gases to how they should regulate them. The EPA apparently didn't get the memo, because we are still talking about whether to regulate them at all.

The EPA decided not to act as it had been instructed to by the Supreme Court. Administrator Johnson chose to issue an Advance Notice of Proposed Rulemaking, effectively leaving it to the next administration to respond to the decision.

The cavalier attitude taken by this administration when it comes to climate change is offensive. When you contrast it to the hard work that is going on in the states all across this country, and municipalities, that understand we have to do something.

In my State, fighting climate change has not been a partisan issue. We have a republican Governor and we have a democratic legislature and we work together on this issue to get one of the most aggressive renewable portfolio standards in the country. That is why it has been so disappointing that it has taken court battle after court battle and congressional hearing after congressional hearing to simply get the political leadership at the EPA to do their job.

The Supreme Court has ruled carbon dioxide falls under the Clean Air Act. We shouldn't have to debate it here, we shouldn't have to push the EPA as hard as we do. We shouldn't need to have oversight hearings like this one to ensure that our EPA is actually protecting the environment. We shouldn't have to sit in a back room and look at this proposed endangerment finding with three senators where we can't copy it and give it out publicly like it is

some kind of special national security secret document when it is, in fact, findings from the U.S. Government. We shouldn't have an EPA that fails to act and blocks states from choosing to enact stricter environmental standards than the Federal Government.

It angers me to think that political forces in this government believe that politics is more important than public health, more important than allowing the American people to receive the evidence and make judgments on their own.

So, it sure comes to no surprise to the people in this room to learn that this administration plans to leave office without taking any regulatory action to address climate change. In the absence of Presidential leadership on this issue, many of my colleagues in Congress have tried to fill that leadership role. If properly constructed, these regulations could address the opportunities for low—cost emissions reduction. In the end, we are going to have to do the hard work next year of writing the comprehensive climate change legislation. The Lieberman-Warner-Boxer bill last summer was a start. Next year, we will begin again.

Meanwhile, the Clean Air Act offers us the potential to get us moving, even before we complete the legislative package, and I urge the next President to get these regulations out as quickly as possible. We need to get started now.

Thank you, Madam Chair, and I look forward to hearing from our witness.

The Chairman. Thank you, Senator. Senator Voinovich.

OPENING STATEMENT OF HON. GEORGE VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH. Thank you, Madam Chairwoman. I thank you for holding today's hearing and I thank the witnesses for being here today. I look forward to your testimony.

As I have listened to the conversation between Senator Inhofe and our Chairman, and now those from Senator Klobuchar—I have been on this committee for 10 years and our problem has always been that we have not been able to harmonize the environment with our energy needs, with our economy, and more recently, with the debate of oil, our national security needs. And hopefully, maybe next year, we will see a lot more of that happening because, if we don't, we will just continue to be stymied as we have been for the last decade.

Today we examine the Environmental Protection Agency's use of the Clean Air Act to address the issue of climate change. As we all now, the Supreme Court in the Massachusetts case confirmed the EPA's authority to regulate greenhouse gas emissions from motor vehicles under the Clean Air Act. The Agency has now issued an Advance Notice of Proposed Rulemaking (ANPR) that takes comment on the use of that authority and the various regulatory mechanisms that would come into play under the Act's provisions. As the ANPR makes clear, however, allowing the Agency to proceed along this course would provide for an unprecedented expansion of the Agency's power, with the potential of bringing the economy to a grinding halt.

Let me be clear, I am for reasonable actions to address climate change. Actions that balance our country's energy and economic

needs, but the CAA was not set-up to address climate change, a problem whose solution is both economy wide in its breadth and international in its scope. By allowing the Agency to address carbon dioxide as it were a traditional pollutant, we will be committing ourselves to inflexible and bureaucratic regulatory regime, which will surely harm the economy and will have little effect on global temperatures. And the economy, folks, is in real bad shape. Just ask the people in Ohio.

Before the EPA can set vehicle emission standards, it must find that the greenhouse gases may reasonably anticipated to endanger public health and welfare. As in the ANPR, once an endangerment finding is made, the Agency is either compelled or authorized to regulate greenhouse gases under various other Clean Air Act provisions including the requirement to promote national ambient air quality standards, the new source performance standards (NSPS), and other requirements such as a new source review and title V operating permits. The ANPR contemplates regulating sources throughout the economy from mobile sources to refineries to office buildings. Many of us voted against the legislation that was brought before the Senate this summer, the Lieberman-Warner Climate Change Act, because of the enormous toll it would have on the economy, a $6.7 trillion tax increase, and the bureaucratic nightmare it would have created. But surely this pales in comparison to what the Agency now contemplates. The Chamber of Commerce estimates that proceeding with GHG regulation under the Clean Air Act would include over one million sources that previously have gone unregulated including large-scale single family homes, churches and schools. And, because established legal precedent does not allow the Agency to take cost into consideration when considering the Act, the economy would be driven to a halt. In fact, if the entire U.S. became—In fact, if the entire U.S. became a non-attainment area for greenhouse gases, as many believe would be required, the emission increases from business expansion and development would effectively be capped. That is, limited to what could be offset by other businesses, either shutting down or limiting their emissions.

So, some have argued that the Agency has large discretion over how it implements CA requirements, whether it establishes the max, for example, or in defining what constitutes a major source for permitting purposes, but we will know that our regulatory landscape is largely decided through litigation and many previous attempts to build flexibility into the Clean Air Act measures that I have supported.

The Court's recent decision in relating to care of rule underscores this. We should not subject our economy to inflexible laws and regulations that were written at a different time to solve completely different problems, nor should we grasp at novel legal theories and claims of flexibility because we feel compelled to do something to address the issue. EPA's plans to move forward with CAA regulation and greenhouse gases should be immediately halted and Congress should get back to the business of setting reasonable policies to address our country's economic, environmental, energy, and national security interest.

The Chairman. Thank you, Senator. Senator Cardin.

OPENING STATEMENT OF HON. BENJAMIN L. CARDIN, U.S. SENATOR FROM THE STATE OF MARYLAND

Senator CARDIN. Thank you, Madam Chair. I would ask unanimous consent that my opening statement be included in the record.

The Chairman. Without objection.

[The prepared statement of Senator Cardin follows:]

STATEMENT OF HON. BENJAMIN L. CARDIN, U.S. SENATOR FROM THE STATE OF MARYLAND

Madam Chairman, Thank you for calling this hearing.

Congress passed the Clean Air Act after recognizing that air pollutants were affecting the health of people and our environment. The Act was meant to provide authority for the EPA to protect our country from air pollutants. The question today is whether or not we have provided the tools necessary for the EPA to address the effects of greenhouse gases.

The Supreme Court ruled that the law covers these gases, that the EPA was not living up to the standards of the Clean Air Act by neglecting to regulate them.

The EPA itself has wavered in the past decade on whether these gases are a threat to public health and whether the Clean Air Act should be used to regulate them, adding to the uncertainty.

Greenhouse gas emissions contribute significantly to climate change, and manmade greenhouse gases are believed to be largely responsible for the increase in average temperatures around the world. The industry and technology that we are proud of as Americans are contributing to this threat, and to protect the pride of those traditions, we need to address those effects.

The energy we use and the cars we drive release greenhouse gases, and without regulation the effects on our climate are growing. Of the problems faced in the world today, the effects of greenhouse gases are among the most universal because of their tendency to redistribute beyond the site of emissions.

This international impact is part of what makes it so important for America to emerge as a leader on issues of climate change. I have said repeatedly that strict climate change legislation is necessary for our national security, vital to our economic well-being, and critical to our environment. We have the opportunity to set an example that will prompt other nations to minimize the damage done by greenhouse gases.

In order for us to show this kind of leadership, we need to address this problem in the most comprehensive way possible. Whether the existing

Clean Air Act can sufficiently address this problem without overreaching its authority is the first question.

The real focus of today is to clarify this issue, and to put the Congress, government agencies, and the American people all on the same page on climate change. We need to determine the most effective way to combat the effects of greenhouse gas emissions. In all likelihood, this will involve both new applications of existing legislation and new legislation to increase our efforts.

Using our existing legislation is going to require a proactive emphasis on what we can do, rather than allowing ourselves to be distracted or absolved based on what we can't do.

We do not have time to wait to begin this fight, nor do we have the luxury of relying only on existing programs not specifically intended for it. Today our witnesses will help us to understand how to both fully utilize the tools we currently have, and to better equip ourselves for the future.

Senator CARDIN. Let me agree with Senator Voinovich that our economy is in deep trouble, but it is not because we have too much regulation. Our financial institutions are really challenging us today, but I think that should teach us that we should be actively involved in trying to deal with public safety. Since 1963, the Clean Air Act has been critically important to the health of our country and our communities, dealing with airborne pollutants that endanger our health.

This hearing is to deal with the regulation of greenhouse gases. The Supreme Court has said that it is appropriate for the EPA to make a finding in regard to greenhouse gases. This administration

has done everything it can to prevent that from happening, from not living up to its responsibility as it relates to protecting our environment by using the tools they have at its disposal, including the Clean Air Act. Greenhouse gases clearly impose a risk to our public health.

We have had hearings on that, Madam Chairman, and we know—we've documented the impact of greenhouse gases and global climate change. We know the impact it is having throughout our country and throughout the world. In my own State of Maryland, I know what has happened with the sea level rises and what's happened with the impact it has had on the environment of the people of my own State. We know that. We know the risks that are involved. And we also know, and it is well-documented by the scientific information, that what we do is affecting the greenhouse gas emissions. That we are partially responsible for the acceleration of global climate change and we can do something about it.

So, I want to just thank the Chairman for holding this hearing. I think we have to look at the current laws to see how we can use the current laws, including the Clean Air Act, in order to deal with this public health risk. I think that is our responsibility and it is certainly the responsibility of the Environmental Protection Agency to use current tools. But, I do believe we need to give the agencies new tools to deal with this challenge and that is why the Lieberman-Warner bill was an important step by this committee to say look, we can find ways that we can provide help to deal with the right type of environmental activities.

And I agree with the Senator from Ohio, it would not only help as far as our environment, but would help our economy and would help our national security.

So, we need to look at whether we need to pass new laws or modify existing laws in order that our agencies have the tools that they need in order to protect the public health. By the way, also for America to be an international leader to deal with the environmental issues, because Americans are effected by what happens in other countries. So, this truly is an international issue, but our laws should be ones which demonstrate the leadership of our country and the commitment of our country to protect the health of our people.

Thank you, Madam Chair.

The Chairman. Thank you very much, Senator. Senator Craig.

OPENING STATEMENT OF HON. LARRY CRAIG, U.S. SENATOR FROM THE STATE OF IDAHO

Senator CRAIG. Thank you, Madam Chairman.

Mr. Meyers, welcome to the committee. It is a significant hearing and I, like Senator Inhofe, am going to have to run, Madam Chair. I apologize. But I am going to do something else that is interesting, in the fact of this hearing and that hearing and the contradiction that these two hearings set up for the American public. And let me explain myself.

Without question today, here in this committee, we are suggesting that EPA follow a certain procedure that will ultimately, ultimately create a dramatic increase in certain transportation fuels for this Nation. That is the reality of the low sulphur stand-

ard in diesel fuels that has driven up the cost of movement of goods and services across our country, potentially substantially. Now, I am going over to the Energy Committee to examine why diesel fuel prices have gone up. Is it any reason the American public has decided that Congress' performance rating is now at its lowest ever? If they watch this hearing and that hearing this morning, I doubt that the American consumer could possibly grasp what Congress has in mind, because they are in direct contradiction of each other, Madam Chair. There is no question in my mind that is a reality.

I understand the economics of your State and your frustration about home mortgages. I also understand that, in June of this year, you had $5.00 gas prices, the highest gas prices of any State in the Nation, high fuel prices. Is it possible that those prices hurt the pocketbook of the average consumer that was paying the mortgage that finally defaulted? Oh, yes. It is possible. In fact, it is reality.

The American economy today is going through shocks that it has never experienced before. Partly because of housing defaults, certainly because of energy costs—and part of the energy costs today, especially in the freight and transportation sector, is the high cost of diesel which is, in part, in part, a direct result of the new low sulphur standards.

Well, those are the hearings that I am going to attend then today. I find them unique and I find them in full contradiction. It is not to suggest that we don't play a role in climate change, and we must. And I think that the Chairman and I, and the members of this committee, have the same appreciation, frustration, and concern about how we deal with it. But when we rather, in a cavalier way, suggest that we can put another $6 trillion hit on the consumers of this country and keep this economy afloat, I suggest that we deserve the rating we are getting as a nonperforming, nonproductive Congress that can't determine which direction to head for the sake of the American economy and, in this way, for the sake of the American consumer.

If the financial shock that we are experiencing today does not bring a little reality to common sense and working together to solve problems, Madam Chair, then I am not sure that we've got much of a future left. I grow very frustrated.

When truckers go out of business because they can't afford to fill their trucks to haul the goods and services that keep the American consumer going, and part of that is a direct result of new standards that drive up the cost as demand goes with it, then we need a new context to the whole debate and an understanding about regulation and an understanding about balance.

Over the years, as I've traveled the world on the climate change issue, and I deal with my colleagues around the world, and they say please pass, please bring into reality Kyoto and all of those protocols. I say wait a moment, there is one very real difference between what we do in this country and what you do in your countries. We have a Clean Air Act. We have law and, if we pass that and if we bring that—we will enforce it. You can play the political games in your countries but we will enforce it in our country because we operate under these standards, Madam Chair.

There is no question we ought to pursue what EPA is doing and you are doing the right thing to do so based on the court actions.

That is not in criticism here. What is in criticism is reasonable and responsible balance that this Congress is failing on, and the American consumer now gets it—in the pocketbook. Boy, do they get it.

Thank you for the hearing.

The Chairman. You know, you are so right on the point. That's why I'm so glad that today we are going to be passing, in a bipartisan way, at least that is what I hear, tax breaks for alternative energy that we have been stymied from doing.

And, the fact is, we need competition with big oil. We don't have enough oil in our country, 2 percent of all of the reserves are here and we use 25 percent of the world's energy. So, we need competition for the old energy. We need competition.

The second point I would make is, passing climate change, putting a price on carbon, would give a tremendous impetus to these new industries. The business people in my State think we have missed the boat, and you'll hear more about this in the next panel, because they've told me—the republican and democratic business leaders, the venture capitalists, that we have blown it because we did not pass climate change legislation. And they tell me, unequivocally, that the investments that will flow from the venture capitalists to the new alternative energy is going to dwarf all of the investment that came into the communications revolution.

So, again, what I love about this committee is you see the different ways we view these issues.

And the last point I would make, which I think is critical, every time that this committee has passed a landmark law, and I have gone back, we have heard the voices of doom and gloom. "Oh, my God. Don't pass the Clean Air Act, it is going to be a disaster." "Oh, my goodness, safe drinking water? Don't pass that. Don't pass clean water" even though there were, in fact, rivers on fire in certain of our Midwest states from the pollution.

So, I think what's very important and what is coming through here, and I agree with my colleague, we are in some dire straits and Congress is not looked at in the way it ought to be looked at. And, there are reasons. Of course, he thinks there are different reasons from the reasons I think. I think it is failure to act with an eye toward the future and sticking to the old ways. That's where I think we need change, but we will see what the people feel when they go to the polls.

So, now I am going to go to Senator Bond.

OPENING STATEMENT OF HON. CHRISTOPHER BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Senator BOND. Thank you very much, Madam Chair. I was just on the floor talking about the most immediate crisis facing us in the financial crisis and I am pleased to hear that we had come to an agreement on these extenders.

I will talk with you later about some of the energy comments you made, but I thank you for holding this hearing on the regulation of carbon under the Clear Air Act.

Today, we are going to hear from people who thought it was OK to spend $6.7 trillion dollars, and raise the price of gas $1.40 a gallon, to regulate carbon dioxide. They failed to get their $6.7 trillion legislation passed into law, so now they want to use government

regulation to achieve the same end. It is hard to believe, but regulating carbon dioxide under the Clean Air Act would impose even more hardship on the American people than a $6.7 trillion Carbon Bill. That's because using Clean Air Act regulations to cap carbon will subject one million commercial buildings to regulation, 200,000 manufacturing operations to regulation, and 20,000 large farms to regulation. These figures come from a study done called Regulatory—these regulations have alphabet soup names like PSD, NSPS, HAP, and NSR. Permit applications for these regulations are tracked, not by numbers of pages, but by inches of thickness. Don't even think about trying to get these permits and comply with these new regulations yourself, you are going to have to hire consultants to help you fill out all the forms. Then, you'll have to hire lawyers to help you defend the lawsuits by environmental advocates like those testifying later today. Many of the firms now covered by these massive government regulations now suffer through this process already. Most say that it is OK because we are talking about big refineries, or chemical plants, or large industrial operations. That is who the Clean Air Act was intended to cover, the biggest polluters releasing traditional air pollution. But no one who voted for the Clean Air Act at the time thought it would apply to carbon dioxide or the massive amounts of carbon emissions. I happen to play a role in that.

Some may remember the Byrd-Bond amendment. I prefer to call it the Bond-Byrd amendment, to permit acid rain credit trading. That worked because there were strategies and techniques available for capturing acid rain and reducing the acid emissions. But Congressman John Dingell, who practically wrote large sections of the Clean Air Act himself and its amendments, said that he certainly never intended for it to cover carbon emissions. We all know his quote about what a "glorious mess" regulating carbon dioxide would be. I agree it would be a mess, although hardly glorious. I personally think it would be a disaster. One million schools, hospitals, grocery stores, office buildings and churches would suffer, 200,000 electrical, plastics, paper, chemical, metal fabrication, assembly and food processing operations would suffer. 20,000 greenhouses, nurseries, poultry, egg, vegetable, pig, and dairy operations would suffer.

Clearly, people willing to impose a $6.7 trillion program and raise the price of gas $1.40 don't care about that kind of suffering or what it would do to our country, but I do and I will continue to care about the needs about our families, farmers, and workers as we reduce carbon dioxide emissions.

I believe we need to, and we must, and we will, continue to reduce the amount of carbon emissions. We need to do that by increased use of nuclear power, which has no emissions. We need to get more electric cars and we are working to get the batteries made in Missouri because electric cars are a very important means of reducing our dependence upon fossil fuels.

But we are not going to get rid of it all. Any responsible study I've seen said 20 to 30 years from now we will still be having to depend upon fossil fuels for 70 percent to 80 percent of our energy. But we need to develop the clean coal technology that can get us there. That is going to be one other source. But we cannot afford

to reduce carbon emissions by regulation that would destroy our economy.

I had the opportunity to visit East Germany right after the wall fell and I saw what a crippled socialist economy does to the environment, pollution in the streams, foul area, burning the worst kinds—because they couldn't afford to clean it up. We can't put ourselves in the position where we can't afford to continue to clean our air. I thank the Chair.

The Chairman. OK. Thank you. Senator, I love working with you, when we can agree, but we see things so differently.

I am so glad my California people are here today because they always say, "Senator, why couldn't you get 60 votes for the Lieberman-Warner bill?" and I say, "Well, it's hard to explain"——

[Laughter.]

Senator BOND. I hope I can help them understand now——

The Chairman. You did, and I think that's important. There's friendship, there's collegiality, there's major disagreement.

I would ask you to read 42 U.S. Code 7602, where expressly written in the Clean Air Act it says that we can—we have to regulate any pollutant related to climate change in weather. So, it's in there and that's why the Court chastised, and this is a republican Supreme Court, chastised us for not moving forward.

So, anyway, I love your comments. I disagree with them, but it is what makes America who we are, the ability to have these disagreements.

Well, now Mr. Meyers, I am sure that you are thrilled and delighted that you are now going to present your case for not doing this, so go right ahead.

[Laughter.]

STATEMENT OF ROBERT MEYERS, PRINCIPAL DEPUTY ASSISTANT ADMINSTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. MEYERS. Madam Chairman and members of the subcommittee, thank you for the opportunity to appear today regarding the potential for regulation of greenhouse gases under the Clean Air Act.

Ten weeks ago, Administrator Stephen L. Johnson signed an Advance Notice of Proposed Rulemaking as the next step in the Agency's efforts to develop an effective response to the Supreme Court's decision in Massachusetts v. EPA. The Notice now remains open for public comment until November 28th. Currently, we have received over 200 comments, but we would realistically expect more.

The NPR gives the EPA and the public a critically important opportunity to understand and address the implications of regulating GHGs under the Clean Air Act and responding to the Supreme Court's decision. As detailed in this document, regulation of GHGs under one provision of the Clean Air Act could lead to regulation of GHG emissions under other provisions of the Act, potentially affecting large numbers of stationary mobile sources including sources not previously regulated under the Act. In a broader context, the NPR adds to substantial work already undertaken on climate change.

Since 2001, the Bush administration has devoted almost $45 billion in resources to addressing climate change, science, and technology. The administration is also implementing mandatory programs under the Energy, Independence, and Security Act that would prevent billions of metric tons of GHG emissions through 2030. Overall, the Bush administration is implementing over 60 Federal programs that are directed at developing and deploying cleaner and more efficient energy technologies, conservation, biological sequestration, geological sequestration and adaptation.

To help lay the groundwork for my testimony in the NPR, which was signed on July 11th, I ask that a copy of the original petitions seeking GHG standards under the Clean Air Act and the EPA's denial of that petition, be entered into the record for this hearing.

The Chairman. Without objection.

Mr. MEYERS. As members of this committee well know, individual provisions of the Clean Air Act can be exceedingly complex. In addition to statutory language spanning several hundred pages, there are several decades' worth of Clean Air Act interpretations embodied in regulatory activity in various court decisions. Views on the proper interpretation of the Act can vary widely. During an interagency review of the NPR, other Federal agencies offered numerous critical comments and very serious questions. For the July 11th NPR, the Administrator decided to publish these views and seek comment on the full range of issues raised in the comments.

The NPR, in general, addresses a broad range of greenhouse gas and climate change issues before the Agency. It contains the Administrator's preface, comments of other agencies, and each separate section details the nature of climate change and greenhouse gases, Clean Air Act authorities and programs, endangerment analysis under the Act, and mobile source petitions contained in Title Two of the Act. It also contains a lengthy discussion on stationary source authorities, including the discussion of permitting programs and the discussion of Title Six of the Act related to stratospheric ozone. Five technical support documents are provided and the document contains voluminous additional technical information.

Within the NPR, EPA addresses and poses questions related to the Supreme Court's decision in Mass v. EPA, additional mobile source petitions received by the Agency and related to ships, aircraft, and non-road equipment and several stationary source rulemaking efforts. The NPR also makes clear that the Clean Air Act was not specifically designed to address GHGs, which helps to illustrate the challenges and opportunity for new legislation.

To sum up, I would offer the following points of observation. At 500-plus pages, it is obvious that the Clean Air Act is an exceedingly complex law with many separate statutory interconnections. Having initially been enacted in its modern form in 1970 and subjected to numerous amendments, the Act has a far-reaching and wide—sweeping effect on power plants, industrial sources, literally anything that moves by powered propulsion, hazardous air pollutants, ozone-depleting substances, and many other separate matters, including the formulation of consumer products. The NPR reflects this basic statutory character, asking literally hundreds of detailed questions. Many outside of the Agency have commented on

the length of the NPR. I can tell you that it was indeed a challenge to keep the document as succinct as it is.

A variety of Clean Act authorities will likely come into play if steps are taken to address GHG emissions from many types of mobile and stationary sources. Since these are detailed in the NPR, I will not repeat information on the various Clear Air Act stationary pathways of the NAC section 111, section 112 regulation, but would note that some authorities may trigger or preclude the use of other authorities, while other authorities would not have such an effect. As presented in the NPR, some Clean Air Act authorities are prescriptive, either by their terms or by their historical interpretation, by the EPA and the courts. Some provisions could provide more flexibility to tailor requirements and encourage technological development.

Thus, it is difficult, as an initial matter, to project the ultimate outcomes of regulation pursuant to the Act. It is our hope and expectation that the NPR will assist the Agency's understanding of the various issues presented. Controlling the GHG emissions under most provisions of the Clean Air Act could substantially expand the number of sources required to obtain preconstruction and operating improvements. The NPR provides information on these provisions. Others have taken note of their perspective sweep. But it is important, when addressing Clean Air Act programs, to conserve both the content of the regulations and the associated issues with regard to an implementation.

Again, thank you for the opportunity to appear before you today and I am pleased to answer any questions.

[The prepared statement of Mr. Meyers follows:]

TESTIMONY OF
ROBERT J. MEYERS
PRINCIPAL DEPUTY ASSISTANT ADMINISTRATOR
OFFICE OF AIR AND RADIATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE

September 23, 2008

Madam Chair and Members of the Committee, thank you for the opportunity to discuss with you today EPA's Advance Notice of Proposed Rulemaking concerning the potential for regulation of greenhouse gases (GHGs) under the Clean Air Act.

In considering how best to respond to the Supreme Court's decision in *Massachusetts v. EPA,* EPA Administrator Stephen L. Johnson in March decided to issue an Advance Notice of Proposed Rulemaking (ANPR) that includes examining the ways in which regulation of GHG emissions under one provision of the Clean Air Act interacts with, and could lead to, regulation of GHG emissions under other provisions of the Act. The Administrator believes that the ANPR approach will enable EPA to give appropriate care and attention to the complexities involved, and that it will be critically important to understanding and addressing the implications of regulating GHGs under the Act in deciding how to proceed, in the event the Administrator makes an endangerment finding.

The ANPR was signed by the Administrator on July 11 and published in the Federal Register on July 30. The ANPR is accompanied by five technical support

documents and other supporting materials placed in the docket. Because of the breadth of the issues covered, the public comment period is 120 days long, until November 28. Among other things, the ANPR:

- Reviews and summarizes climate change science as relevant to determining whether GHG emissions from motor vehicles meet the endangerment test of Clean Air Act section 202, the provision at issue in *Massachusetts v. EPA*.
- Examines the implications of issuing an endangerment finding and regulation under one section of the Clean Air Act for the regulation of mobile and stationary sources under other sections of the Clean Air Act, in light of the interconnections among various provisions of the Act.
- Examines Clean Air Act authorities and the various policy, legal and technical issues involved with their potential application to GHGs, as well as possible emission reduction technologies and strategies.
- Seeks public comment on the issues raised, and solicits technical information and data to provide a better basis for assessing the potential application of the Clean Air Act to GHGs.

The ANPR begins with a preface by the Administrator and statements by the heads of a number of other federal departments and agencies raising serious concerns about the suitability of the Clean Air Act for addressing climate change. The ANPR does not propose an endangerment finding under Clean Air Act section 202 or any similar statutory provisions contained in the Clean Air Act. It does not make judgments

or recommendations about whether or how to use various Clean Air Act authorities. Instead it explains and discusses the potential ways in which the Clean Air Act could -- or in certain defined circumstances, would -- apply to other types of mobile and stationary sources of GHGs, should the Agency ultimately make a positive endangerment finding for GHG under section 202 or other Clean Air Act provisions. For each CAA authority potentially applicable to GHGs, the ANPR requests public comment.

To put the ANPR in a broader context, President Bush has pointed out that climate change is a serious global challenge. Since 2001 the Administration has devoted almost $45 billion in resources to addressing climate related science, technology, observation, international assistance and tax incentives and has implemented mandatory programs in some of the most significant sectors that will potentially prevent 5 to 6 billion metric tons of GHG emissions through 2030. The Administration is implementing over 60 federal programs that are directed at developing and deploying cleaner, more efficient energy technologies, conservation, biological sequestration, geological sequestration, and adaptation. Internationally, the President launched the Major Economies Process, which brings together the world's largest users of energy and largest producers of GHG emissions, including both developed and developing nations, to develop a new approach that can slow, stop, and eventually reverse the growth of GHG emissions. He also launched the now successful Asia-Pacific Partnership on Clean Development and Climate Change, which is undertaking more than 100 actions to address GHG emissions and energy security opportunities in 8 key sectors and includes active participation by India and China.

Through his "Twenty in Ten" initiative, the President last year committed the United States to reducing gasoline demand and greenhouse gas emissions from motor vehicles and fuels as part of a national approach for addressing the nation's dependence on petroleum and global climate change. Congress answered the President's call to increase vehicle fuel economy standards and the use of renewable fuels through enactment of Titles I and II of the Energy Independence and Security Act (EISA). Work is now proceeding at EPA and other agencies to implement the new law.

In the *Massachusetts* case, the Supreme Court held that the Administrator of EPA must decide whether or not greenhouse gas emissions from motor vehicles cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare, or explain why "scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming[.]" If the Administrator ultimately finds that motor vehicle GHG emissions meet that two-part "endangerment" test, section 202(a) of the Clean Air Act requires him to set motor vehicle GHG emissions standards.

The ANPR summarizes the latest available science relevant to determining whether that endangerment test has been met and discusses the statutory terms and legislative history of the test itself. It should be noted that the Supreme Court did not evaluate on the merits the Agency's prior scientific record and analysis in deciding the *Massachusetts* case. The ANPR also addresses the broader ramifications of making an endangerment finding. Specifically, it addresses and seeks public comment and

information on a range of mobile and stationary source issues that could relate to and arise from a decision to regulate GHG emissions under the authority of the Clean Air Act.

In developing a response to the Supreme Court's decision, EPA has come to fully appreciate that Clean Air Act regulation of GHGs would not stop at vehicle standards issued under section 202(a) of the Act. Recognizing similarities in statutory language as well as regulatory "triggers" embedded in the Act, we evaluated the broader ramifications of the Court's decision for potential Clean Air Act regulation. The review made clear that regulation of mobile or other sources of GHGs under the Clean Air Act could potentially affect many stationary sources, going well beyond the typical power plant or factory to include large commercial facilities, apartment buildings and other entities.

The Clean Air Act, as enacted in 1970 and substantially amended in 1977 and 1990, provides broad authority to address air pollutants that are emitted by mobile and stationary sources. Cars, trucks, construction equipment, airplanes, ships as well as a broad range of electric generation, industrial, commercial and other facilities may be subject to various Clean Air Act programs.

As the ANPR describes in detail, there are several provisions in the Clean Air Act that contain endangerment language similar to that found in section 202(a). A finding of endangerment for GHGs under one provision of the Act could have ramifications for findings of endangerment under other provisions of the Act. In addition, promulgation of GHG emissions standards for vehicles or stationary sources under most Clean Air Act

provisions could significantly expand the scope and applicability of preconstruction permit requirements under the Prevention of Significant Deterioration program. Another interconnection, highlighted in the ANPR, is how defining a term such as "air pollutant" in one part of the Act could also affect other provisions using the same term.

Application of the Clean Air Act's integrated and interrelated authorities has resulted in our nation making substantial gains in the reduction of criteria pollutants, like smog and particulate matter, as well as air toxics. However, using existing Clean Air Act provisions to address GHGs, which have long atmospheric lifetimes and tend to be well-mixed in the global atmosphere, presents different challenges. Therefore, it is prudent to fully consider how existing Clean Air Act authorities would or could work together if an endangerment finding were made under any provision of the Act and any subsequent GHG controls were established under the authority of the Act.

Several pending CAA actions are also affected by the potential implications of the Court's decision. Over the past year, EPA has received seven petitions from states, localities, environmental groups and other nongovernmental organizations to set emission standards for other types of mobile sources, including non-road vehicles such as construction and farm equipment, ships and aircraft. The ANPR summarizes and seeks comments on these petitions. The ANPR also discusses issues concerning establishing new source performance standards (NSPS) for GHGs emitted by several source categories that have been the subject of recent EPA NSPS rulemakings. For example, in response to a remand by a federal court, EPA must decide whether the NSPS for utility,

commercial and industrial boilers should be expanded to cover GHGs. Stakeholders have challenged EPA's decision not to include GHG standards in recent revisions to the NSPS for petroleum refineries. Legal challenges have also been brought seeking controls for GHG emissions in preconstruction permits for several coal-fired power plants.

In light of the broad array of pending and potential Clean Air Act actions concerning GHGs, the Administrator decided to inform and consult with the public about the Agency's work in response to the Supreme Court's decision, including issues and questions related to endangerment and vehicle standards, and our examination of the potential effects of using various authorities under the Clean Air Act. Thus, the ANPR provides the public with a timely opportunity to help shape an approach for potentially addressing GHG emissions under the Clean Air Act.

In light of Congressional passage of numerous mandatory and incentive-based policies that will prevent billions of tons of GHG emissions, such as the new national renewable fuel and vehicle fuel economy mandates, as well as any future consideration of other legislation that might affect GHGs, the ANPR's description of Clean Air Act programs is relevant to evaluating potential overlap with existing, new and proposed programs being considered by Congress. In addition, the ANPR discusses issues and approaches for designing GHG control measures that may be useful in developing either regulations or legislation to reduce GHG emissions. The ANPR further notes that the Clean Air Act is not the only tool available for addressing GHG emissions at the Federal level and that actions taken through Clean Air Act regulations are part of broader

regulatory, policy, and programmatic actions to address GHG emissions taken by EPA, other Federal departments and agencies, state and local governments, the private sector, and the international community.

The ANPR explains the basic terms of the Clean Air Act provisions that could be applied to GHGs, but as it makes clear, individual provisions of the Act can be complex. There are also several decades' worth of Clean Air Act interpretations embodied in regulatory activity and various court decisions. A full explanation of these provisions and their historical interpretation could easily fill a text book. For today, I would like to provide you with a general overview of several Clean Air Act provisions that might be applied to GHG emissions and that are further discussed in the ANPR. For each of those provisions, I will briefly describe:

- the finding or action that could lead to regulation under the section,
- the types of sources potentially regulated,
- the factors EPA could consider in standard-setting, and
- the flexibility that EPA could provide sources (e.g., whether emissions trading would be permissible).

But I must first offer an important caveat: Just as the ANPR makes no recommendations regarding application of specific Clean Air Act authorities to GHGs, the following discussion of authorities should not be interpreted to mean that EPA has reached any conclusions regarding whether particular authorities would be mandatory or discretionary, or suitable or unsuitable, for use in reducing GHG emissions, or whether

EPA has fully evaluated the legal viability of any particular approach Further, this testimony does not present conclusions on issues raised in the ANPR, which is still out for public comment. Many stakeholders have raised significant issues and ideas with regard to the potential application of the Clean Air Act to GHG emissions. EPA will continue to evaluate the various Clean Air Act authorities in light of available information and public comments on the ANPR.

Stationary Source Authorities

The Clean Air Act includes a number of stationary source authorities that together have successfully reduced air pollution at the same time the nation's economy has grown. These authorities provide three main pathways for potentially regulating stationary sources of GHG emissions. They include, in their order of appearance in the Act, national ambient air quality standards (NAAQS) and state implementation plans (SIPs) for achieving those standards[1]; performance standards for new and existing stationary sources; and hazardous air pollutant standards for stationary sources. I will describe each of these Clean Air Act programs in turn, followed by a discussion of issues related to the Prevention of Significant Deterioration (PSD) and Title V permitting programs.

National ambient air quality standards: Section 108 of the Act requires EPA to list pollutants: 1) which, in the Administrator's judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare; 2) which result from numerous or diverse mobile or stationary sources; and 3) for which the Administrator plans to issue air quality criteria. For listed pollutants (so-called "criteria

[1] SIPs typically contain measures to reduce emissions from mobile sources as well as stationary sources.

pollutants"), section 109 of the Act requires that EPA set and periodically revise national primary and secondary ambient air quality standards. Primary standards are standards which, in the judgment of the Administrator, are requisite to protect public health with an adequate margin of safety. Secondary standards are standards judged by the Administrator to be requisite to protect the public welfare from any known or anticipated adverse effects. Under established Supreme Court precedent, both primary and secondary standards are set without consideration of costs or ease of implementation.

Once standards are established under section 109, section 110 of the Act sets forth detailed requirements for state plans to attain and maintain the primary and secondary standards. Costs and feasibility may be considered in the development of these state plans and the federal rules that aid in achieving air quality standards. Additional requirements for nonattainment areas are contained in Part D of Title I of the Act.

An important issue noted in the ANPR is whether making an endangerment finding under section 202 or other sections of the Act would compel the Agency to list GHGs under section 108 in view of the other listing criteria. The ANPR evaluates and seeks comment on the extent of the Agency's latitude in deciding whether or not to list a new pollutant under section 108 for the purpose of setting a NAAQS under section 109. In that discussion, the ANPR notes that one of the three criteria for listing NAAQS pollutants "could provide EPA discretion to decide whether to list those pollutants under section 108 for purposes of regulating them via the NAAQS."

Another issue to consider is the length of time it would take to develop a NAAQS and to implement controls on GHG emission sources through the SIP process. The Clean Air Act provides a statutory framework for the designation of areas (either attainment, nonattainment or unclassifiable) as well as statutory deadlines for the submission of state implementation plans and deadlines for attainment of various standards. Based on past experience, we might expect that it would take a decade or more to complete the NAAQS process: several years to list the pollutant(s) under section 108 and promulgate a NAAQS for the pollutant(s); two years to make attainment and nonattainment area designations; three additional years for states to submit to EPA state plans and rules to implement the standards; and typically additional time for regulated sources to comply. Litigation has at least once contributed to delaying implementation of a NAAQS.

It is also important to consider that all NAAQS are subject to a statutory review period. Every five years, the Administrator is required to review and determine, based on the latest scientific information, and with consultation and consideration of the recommendations of the Clean Air Act Scientific Advisory Committee, whether to revise existing NAAQS. Revision of a NAAQS results in another round of area designations and state plans.

More fundamental are the questions raised by the potential application of NAAQS and SIP requirements to global air pollutants like GHGs. Regardless of where in the world they are emitted, GHGs like CO2 are long-lived, and thus mix and distribute in the atmosphere in a way that results in relatively uniform concentrations around the globe.

Under a hypothetical NAAQS for the longer-lived GHGs, depending on the level of any standard based on concentration, the entire country would be either in attainment or in nonattainment with the standard. If a NAAQS for GHGs were employed, as there would be no basis for differentiation among the states based on atmospheric concentrations, EPA might have to consider some sort of burden-sharing allocation of responsibility among the states with respect to their relative contribution to attainment of a national standard. In either case, EPA's approach to addressing GHGs would necessarily require new methods of implementing existing CAA provisions.

If the country were in attainment, states would be required to submit enforceable state plans to maintain the standard and to apply the prevention of significant deterioration (PSD) program to the GHGs covered by the NAAQS. State plans could include limits on stationary sources and mobile source measures not preempted by the Act. As explained in more detail below, PSD requires new source permitting, best available control technology, and emission limits that avoid significant degradation of air quality.

If the country were in nonattainment, states would be required to submit plans that demonstrate attainment of the primary NAAQS within a 10-year maximum time frame. Because controls implemented by a single state, or even by the entire U.S., could not alone ensure stabilization or reductions in global GHG concentrations, this requirement would be problematic. This is true despite the fact that there may be some flexibility for some nonattainment requirements. Required elements of a nonattainment plan include a

reasonable further progress demonstration, reasonably available control measures, transportation conformity, and nonattainment new source review for new and modified major sources. Each of these elements can impose substantial duties on states and localities.

Under either an attainment or nonattainment scenario, state plans could also be required under section 110(a) (2) (D) to prohibit significant contribution to nonattainment or interference with maintenance of the NAAQS in other states. EPA has not determined whether or not such provisions would necessarily be "triggered" or applicable to a GHG NAAQS. However, these provisions have been part of past NAAQS implementation. EPA believes section 110 allows some form of emission trading to help achieve its objectives. However, the recent decision of the D.C. Circuit vacating the Clean Air Interstate Rule (CAIR), if allowed to stand, would restrict interstate emission trading in part or in whole under section 110. This same authority was used in promulgating the 1999 NOx SIP Call rule.

New source performance standards (NSPS): Section 111(b) of the Act requires EPA to establish emissions standards for any category of new and modified stationary sources that the Administrator, in his judgment, finds "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." EPA has previously made endangerment findings for more than 60 source categories that are now subject to more than 70 NSPS. An endangerment finding would be a prerequisite for listing additional source categories for NSPS.

NSPS for new and modified sources can be issued regardless of whether there is a NAAQS for the pollutant being regulated. NSPS emission limits are to reflect "the best system of emission reduction," taking into account cost and any non-air-quality health and environment impacts and energy requirements. EPA has significant discretion in selecting the categories and sizes of facilities to be covered and the level of the standards to be set. Emissions limits can be written for equipment within a facility or for an entire facility. EPA believes section 111 allows some form of emissions trading among facilities.

Section 111(d) calls for states to issue performance standards for existing sources in the same categories for which EPA regulates new sources, but only when the pollutant in question is neither listed as a criteria pollutant to be regulated through a NAAQS under section 109, nor regulated from the source category under section 112. Historically, EPA has issued model standards for existing sources by rule that could then be adopted by states. Altogether, section 111 provisions for new and modified and existing sources may allow significant flexibility in regulation beyond that available under other Clean Air Act provisions.

Section 111 also requires EPA to review and, if appropriate revise, existing NSPS every eight years unless the Administrator determines that "such review is not appropriate in light of readily available information on the efficacy of such standard." EPA has reviewed or is currently reviewing NSPS for a number of source categories, and

in the context of some of those reviews, commenters have urged the Agency to add GHG limits to the section 111 standards.

Standards for hazardous air pollutants: Section 112 provides for regulation of hazardous air pollutants from stationary sources. Congress initially listed more than 180 hazardous air pollutants in the statute, but provided a mechanism whereby EPA may add a pollutant which is "known to cause or may reasonably be anticipated to cause ... adverse effects to human health or adverse environmental effects." Generally, EPA may not add to the list of hazardous air pollutants under section 112 any air pollutant that has been listed as a NAAQS pollutant under section 108. If EPA lists a pollutant under section 112, the Agency must set technology-based "maximum achievable control technology" (MACT) standards for all categories of major sources of the listed pollutant. Eight years after a MACT standard is set, EPA is required to consider whether to set tighter MACT standards or, if needed to protect health and the environment, residual risk standards. Section 112 also authorizes EPA to address smaller sources of listed pollutants through potentially less stringent emissions limits.

Under section 112, major sources are defined as those that have the potential to emit 10 tons per year of any one hazardous air pollutant or 25 tons per year of multiple hazardous air pollutants. These low thresholds reflect the fact that these authorities were originally established by Congress for regulation of toxic air pollutants which are typically emitted and can contribute to adverse effects at relatively low volumes. Since CO2 is typically emitted in much higher volumes than currently listed hazardous air

pollutants (or even NAAQS pollutants), application of these thresholds to GHG emission sources could result in a massive increase in the number of sources subject to section 112 standards, and could extend the program to schools, hospitals, apartment buildings, universities or other similar institutions.

Unlike NSPS, section 112 establishes minimum stringency requirements for MACT standards based on levels of performance achieved by similar facilities, restricting EPA's ability to consider cost. EPA has interpreted section 112 to allow emissions averaging within a source, but not to allow emissions trading among different major sources. Pollutants that are regulated under section 112 are not subject to preconstruction review under the prevention of significant deterioration (PSD) program, but major sources of HAPs are subject to new source MACT requirements under section 112 .

Permitting: Once EPA controls a GHG under any section of the Clean Air Act -- except for sections 112 and 211(o) – new or modified major stationary sources of that pollutant would become subject to the requirements of the PSD program.

As a general matter, new major stationary sources and modifications at existing major stationary sources constructed in attainment areas must undergo the PSD permitting process and install best available control technology for each pollutant subject to regulation under Act. These requirements apply regardless of whether a NAAQS for the pollutant exists. For PSD purposes, major stationary sources are those with the potential to emit 100 tons per year of a regulated air pollutant in the case of certain

statutorily-listed source categories, and 250 tons per year in the case of all other source categories. New large schools, nursing homes, and hospitals, universities or other similar institutions could be considered a "major source" under this section of the Clean Air Act, although states could exempt nonprofit educational and health facilities. For modifications, only those that increase emissions above a tonnage threshold established by EPA for each regulated pollutant through rulemaking triggers PSD. Until EPA establishes this so-called "significance" level, however, any increase in a regulated pollutant at a major stationary source undergoing a modification would trigger PSD permitting.

As noted previously, PSD sources are required to install best available control technology (BACT). BACT must be at least as stringent as any applicable NSPS, and is to reflect the maximum degree of emissions reduction achievable for such a facility, taking into account energy, environment and economic impacts and other costs.

Controlling GHG emissions under any section of the Clean Air Act could significantly increase the number of stationary sources subject to PSD permitting, unless actions can be taken to prevent that outcome (a question explored in the ANPR and explained more fully below). Because CO2 is typically emitted in larger quantities than criteria and other traditional air pollutants from combustion sources, facilities not previously subject to Clean Air Act permitting -- such as large commercial and residential buildings heated by natural gas boilers -- could qualify as major stationary sources for PSD purposes under the statutory thresholds. In addition, some small

industrial sources not now covered by PSD could be covered due to their GHG emissions.

Under existing major source thresholds, we estimate that if CO2 became a regulated pollutant, the number of PSD permits issued annually nationwide could rise by more than a factor of ten (i.e., more than 2000-3000 permits a year), unless action were taken to limit the scope of the PSD program as described below. Such estimates are subject to significant uncertainty. At present, we do not have comprehensive information on GHG emissions from the many categories of stationary sources of such emissions; instead we have relied on available information and general engineering estimates.

As discussed in the ANPR, such a broadening of the PSD programs could pose significant implementation issues for covered facilities (particularly newly covered facilities) and permitting agencies. In view of the very substantial increase in administrative burden that might otherwise occur, we are seeking comment on whether, for GHGs, the programs could be limited by rule to larger sources, permanently or temporarily, based on legal theories explained in the ANPR, or alternatively, whether legislation on GHG major source thresholds might be needed. In connection with the thresholds issue, the ANPR requests comments and information to support selection of appropriate levels. Also, the ANPR requests comment on other ways to limit the number of major sources through methods involving sources' "potential to emit." In addition, the ANPR requests comment on concepts for streamlining implementation of the PSD

program for smaller sources, such as guidance on general permits or source definitions for BACT determinations, and model permits for use by permitting agencies.

Similar issues arise for the Title V operating permits program, which requires covered stationary sources to have an operating permit that lists all of the source's applicable requirements under the Act, and report and certify its compliance status. Because Title V applies to existing as well as new and modified sources, and because it applies to sources that have the potential to emit more than 100 tons per year and other specified types of CAA-regulated sources, Title V requirements extend to more sources than PSD. The ANPR notes that most of the approaches for attempting to limit the numbers of sources subject to PSD, and for streamlining compliance, could also be used for Title V, and requests comment on using those approaches for Title V, as well as other approaches specific to Title V.

Mobile Source and Transportation Fuel Authorities

Title II of the Clean Air Act provides extensive authority for addressing emissions from the transportation sector in a comprehensive way, with substantial flexibility in considering cost, technological feasibility, and lead time. Under Title II, EPA has the authority to address all mobile sources to develop an approach to regulation that covers both engines and fuels, taking into account the unique aspects of each category, including passenger vehicles, trucks and nonroad vehicles. As a result, EPA has used Title II authorities to achieve deep emission reductions in such pollutants as lead, hydrocarbons, nitrogen oxides, particulate matter, and carbon monoxide from all categories of motor

vehicles. The Title II mobile source authorities work in tandem with the Act's stationary source authorities to provide national emissions reductions that states use in their plans to attain and maintain the NAAQS and otherwise to protect public health and the environment from air pollution. The ANPR discusses how Title II authorities and existing mobile source emission control programs might be utilized to address mobile source GHG emissions.

Section 202(a), the section at issue in the *Massachusetts* case, authorizes EPA to set emissions standards for new motor vehicles or new motor vehicle engines. This provision states that "the Administrator shall by regulation prescribe ... standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles ... which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." Section 202(a) covers all vehicles commonly described as on-highway or on-road vehicles, including passenger cars, light trucks, heavy-duty trucks, buses and motorcycles. Section 202(a) emissions standards only apply to new vehicles and engines, although EPA does have authority to set requirements for rebuilding practices of heavy-duty vehicles, including emission standards.

In setting standards under section 202(a), EPA may consider the need for emissions standards, technological feasibility and other factors such as cost, lead time, safety and other impacts on consumers, and energy impacts. Emission standards may be technology forcing where determined to be appropriate, so long as they take effect "after

such period as the Administrator finds necessary for the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." In addition, the ANPR notes that Title II does not restrict EPA to specific timeframes for action. As discussed in the ANPR, if circumstances warrant, EPA could set longer-term standards and promote technological advances by basing standards on the performance of technologies not yet available but which are projected to be available at the time the standard takes effect. EPA also has discretion to establish standards that allow the use of averaging, banking and trading of emission credits, which allows EPA to set standards that achieve greater emission reductions while providing flexibility to manufacturers in meeting the standards.

In this context, it is important to note that in EISA, Congress called on the Department of Transportation to tighten vehicle fuel economy standards, which will achieve significant GHG emission reductions. The Department of Transportation, in consultation with EPA, has authority to set Corporate Average Fuel Economy Standards under the Energy Policy and Conservation Act, as amended by EISA. In light of this, EPA specifically invited comment in the ANPR on how EPA could best implement its independent obligations under the Clean Air Act, in keeping with the Supreme Court's observation in the *Massachusetts* decision that "there is no reason to think the two agencies cannot both administer their obligations yet avoid inconsistencies."

Other Clean Air Act Title II provisions provide EPA with authority for emission standards for nonroad engines and vehicles (section 213), aircraft (section 231), and fuels

(section 211). Each of these provisions (with the exception of section 211(o)) contains a variation of the "endangerment" test found elsewhere in the Act. Between October 2007 and January 2008, EPA received seven petitions requesting the Agency to use its authority under these sections to regulate GHG emissions from these sources. As previously mentioned, the ANPR summarizes and seeks comments on these petitions.

Nonroad engines and vehicles cover a wide variety of engines and equipment that are typically mobile or transportable. They include lawn and garden equipment, off-road vehicles, portable generators, farm and construction equipment, ships and locomotives. EPA may set emissions standards for these engines and equipment if the appropriate endangerment determination is made. Like the standards for motor vehicles, the emission standards for these engines and equipment would only apply to new engines or equipment. In general, EPA may consider the same factors and provide the same kinds of flexibility compliance mechanisms (e.g., averaging, trading and banking) as apply to standard-setting for new motor vehicles.

For aircraft, EPA is required to set emissions standards if the appropriate endangerment determination is made under section 231. EPA's authority is not limited to setting standards for new aircraft. As with the other categories of mobile sources, EPA has significant discretion in the factors it considers in setting standards for aircraft and the ability to develop flexible compliance mechanisms.

In the case of fuels, under section 211(c), EPA may establish controls related to fuels or fuel additives where the emissions products of the fuel or fuel additive cause or contribute to air pollution that, in the judgment of the Administrator, may reasonably be anticipated to endanger public health or welfare. This authority extends to fuels or fuel additives for use in motor vehicle or nonroad engines; it does not extend to jet fuel or fuel used in stationary sources. In setting standards or requirements for fuels, EPA can consider all of the same factors discussed above for motor vehicles.

In the past, the Agency has used a systems approach for considering fuels and vehicles together. We have also allowed emissions averaging and flexible banking and trading with market incentives for early introduction of clean technologies and phase-ins to provide more time to address technical challenges. The ANPR notes that the broad regulatory coverage of Title II of the Clean Air Act offers the potential for comprehensive mobile source GHG emissions reductions using cost-effective approaches in the mobile source sector. The Clean Air Act has also been implemented to allow for staggered rulemakings for various subsectors and fuels, rather than regulating all mobile source entities at one time.

Section 211(o) establishes the renewable fuels standard and, as recently amended by EISA, requires significant quantities of renewable fuel, including renewable fuel meeting various GHG "lifecycle" emissions thresholds. As amended by EISA, section 211(o) requirements for GHG emission reductions do not trigger any further regulation of

GHGs under the Clean Air Act, nor is regulation under section 211(o) contingent on an endangerment finding.

In response to the passage of EISA, the Department of Transportation has proposed new standards for passenger cars and light trucks that would significantly increase the fuel economy, and decrease the GHG emissions, of the U.S. light-duty vehicle fleet. Analysis presented for comment in the ANPR describes significant GHG reductions that could be achieved for passenger cars and light-duty trucks under the Clean Air Act. A substantial amount of the volume of reductions contemplated in the ANPR will likely be realized by the new DOT standards in the model years covered.

The ANPR also discusses a wide range of technologies available to reduce GHG emissions from heavy-duty trucks and nonroad engines and vehicles. The opportunity for GHG reductions from the nonroad sector closely parallels the highway sector, especially for the heavy-duty highway and nonroad engines that share many design characteristics.

Stratospheric Ozone Protection Authorities

The ANPR also discusses section 615 which contains endangerment language related to effects on the stratosphere, and provides EPA with substantial discretion regarding regulatory approaches. This section is mentioned in the interest of providing a comprehensive indication of possible Clean Air Act authorities; this section could only be used for GHGs if the Administrator made the requisite scientific finding concerning GHG's effect on the stratosphere and any resulting effect on public health or welfare.

In summation, the ANPR presents information relevant to, and solicits public comment on, how to respond to the Supreme Court's decision in *Massachusetts v. EPA*. The notice reviews the various Clean Air Act provisions that may be applicable to GHGs, examines the issues that regulating GHGs under those provisions may raise, and provides information regarding potential regulatory approaches and technologies for reducing GHG emissions. The preface of the notice also conveys the Administrator's views at this point in our examination of the Clean Air Act authorities potentially applicable to GHGs:

"The potential regulation of greenhouse gases under any portion of the Clean Air Act could result in an unprecedented expansion of EPA authority that would have a profound effect on virtually every sector of the economy and touch every household in the land. . . .

"I believe the ANPR demonstrates the Clean Air Act, an outdated law originally enacted to control regional pollutants that cause direct health effects, is ill-suited for the task of regulating global greenhouse gases. Based on the analysis to date, pursuing this course of action would inevitably result in a very complicated, time-consuming, and likely, convoluted set of regulations. These rules would largely pre-empt or overlay existing programs that help control greenhouse gas emissions and would be relatively ineffective at reducing greenhouse gas concentrations given the potentially damaging effect on jobs and the U.S. economy."

We look forward to exploring these important issues further with Congress and the public. Thank you again for the opportunity to testify.

The Chairman. Thank you. Mr. Meyers, as we know now, Mr. Johnson, and we saw the document, Mr. Johnson had signed a draft document where he proposed that there be an endangerment finding and, as you know, that endangerment finding was enough to begin the process for EPA to regulate these greenhouse gas emissions.

What was the level of effort expended by EPA in working on the endangerment finding and proposed greenhouse gas rules between April and December 2007 in terms of the number of people involved and the allocation of budget resources?

Mr. MEYERS. The Chairman. Look, I can't hear you. Can you just give me an answer? I know you may have provided it. I want the people to hear you say what was the level——

Mr. MEYERS. Sure, I apologize. In the letter to Senator Feinstein, we detailed within the Office of Air and Radiation, I think, our estimate was approximately 55 personnel devoted to the effort. Expenditures, direct and contract—and this is detailed in the letter, so I am going on memory, you know, about——

The Chairman. What about dollars?

Mr. MEYERS. About——

The Chairman. Sorry?

Mr. MEYERS. About 55 people and around $6 million. I can provide the letter for the record.

[The information referred to was not received at time of print.]

The Chairman. Yes, I would appreciate if you would do that. So, all this went into it and then why is it that the thing was stopped in its tracks and we had to sit in the back and read, as Senator Klobuchar has eloquently pointed out, sit in that room with people looking over our shoulder? What happened from there? You spent this money——

Mr. MEYERS. Right.

The Chairman.—you have to respond to the Court. The Court said clearly that carbon is covered by the Clean Air Act. What happened? Why was this all stymied?

Mr. MEYERS. Well, the NPR is our response to the Court's decision in Mass v. EPA. So, the Administrator decided that, given the complexity of the issues raised——

The Chairman. Well, I know about the NPR. What happened to this? You spent all this money, 55 people, we saw the document and it gets shot down. What happened? Why? What happened?

Mr. MEYERS. Well, Madam——

The Chairman. Did the scientist change their minds on this? What happened?

Mr. MEYERS. Well, Madam Chairman, in actuality, some of the resources that were reflected in the expenditures in 2007 are reflected in the NPR and the technical support documents, but——

The Chairman. But the endangerment finding didn't go forward, is that correct?

Mr. MEYERS. The document that you reviewed in chamber was not made public.

The Chairman. Right.

Mr. MEYERS. That's correct.

The Chairman. What's the rationale behind keeping it secret?

Mr. MEYERS. I'm afraid you're getting into issues that have been discussed between the committee and the administration regarding certain matters of privilege on these documents, so I don't feel I am in the position to address these specific matters at this hearing. But, I know you have been in communication with the administration concerning the access and the reasons——

The Chairman. Well, we have a lot of reasons to worry. We have secret documents—thank God we had some whistle-blowers who made sure we saw it. We have to sit in a room over there—you admit we spent $6 million and had 55 people on the case and, at the end of the day, we are doing nothing. Just like with prochlorate, we doing nothing.

Look, I am not mad at you but I have to say, for 6 months I have been trying to get Stephen Johnson here and he has ducked this. And you can't answer certain questions.

What about this one, we have learned that EPA's process of developing greenhouse gas rules included a cabinet level meeting in November 2007 where an agreement was reached that greenhouse gases did endanger the public and therefore required regulation. Which cabinet level officials were you aware of that had been involved by that time?

Mr. MEYERS. By what time?

The Chairman. By this meeting, November 1907.

Mr. MEYERS. I was not at the meeting.

The Chairman. You don't know about this meeting, then. November of——

Mr. MEYERS. I can't testify to a meeting that I did not attend.

The Chairman. All right. Well, we have someone here who knows about the meeting and, would you please ask to Mr. Johnson to provide to this committee who was at that meeting in November of 1907?

Mr. Meyers, EPA has proposed a New Source Review Rule. In July, you prepared an analysis showing that it would increase power plant CO_2 emissions by more than 73 million tons per year. Did you request public comment on this huge increase in CO_2 emissions from the NSR rule?

Mr. MEYERS. The NS——

The Chairman. New Source Review is NSR.

Mr. MEYERS. I realize. Which proposal?

The Chairman. I'll read it again. EPA has proposed a New Source Rule. In July, you prepared an analysis showing that it would increase power plant CO_2 emissions by more than 73 million tons per year. Did you request public comment on this huge increase in CO_2 emissions from this change, this rules change?

Mr. MEYERS. I would have to provide a response for the record on any rulemaking in which analysis is presented in the public record. Of course, public comment can be received.

The Chairman. OK. How can you square keeping these impacts from the public with EPA statement in the NPR that public comment is very important on all issues relating to regulations of GHG emissions?

Mr. MEYERS. Well, I think the NPR literally asks hundreds of questions to get that public comment on a full range of issues under the Clean Air Act, so I think——

The Chairman. You didn't on this one. You didn't on this one. Look, it's one thing to disobey the court, to deep-six an endangerment finding. That's horrible. And I hope the American people get it.

It's another thing when you are involved with this new rule, and you know that it would increase CO_2 emissions by 73 million, and you don't even ask for public comment. That's unbelievable to me. Senator Inhofe?

Senator INHOFE. Well, thank you, Madam Chairman.

Now, I understand that one of the points the Chairman is making here is that, perhaps since the electric utilities currently have to report carbon dioxide emissions, in your view does that mean that it is currently regulated under the Clean Air Act?

Mr. MEYERS. Senator, that is a matter currently in litigation before the Agency and we have filed certain comments with respect to the EABs review of that issue on Section 821. I can't detail the legal arguments, but generally speaking, we have contested the view that, on 821, as constituting regulation under the Act.

Senator INHOFE. OK. There's been a lot of talk about flexibility and the lack of flexibility. How do you believe that the CARE and the Clean Air Mercury Rule decisions have altered the Agency's ability to find flexibility within the Act?

Mr. MEYERS. Well, sir, on both issues we are currently—both on CARE and CAMR, we are concerned, currently concerned with the Justice Department interactions moving forward on the legal front. With respect to the CAMR decision, it was a narrow decision with respect to delisting under 112 C–9. With respect to the CARE decision, however, I think a fair reading of the decision does imply that the court, the three judge panel that ruled in this case, has certain concerns with our interpretation of cap and trade authority with respect to Section 110.

Senator INHOFE. All right, Mr. Meyers. This is something I kind of wanted to get around to. I would like to have you explain what kind of effect setting CO_2 emission limits for both new and existing power plants through the NSPS process and approving California's Vehicle Greenhouse Gas Emission Standards, would have on global, global concentrations of CO_2 . Would there be any guarantees that global concentration would decrease if this were to happen?

Now, I would say that, during the discussion, the debate on the floor, the two reasons why only 38 members of the U.S. Senate would have voted for Lieberman——

Warner is two arguments. One, the economy, which we can get to. We know how devastating that would be. But the other one, whatever we do in this country could have the effect of getting industries to go to other countries where they don't have these restrictions and where they don't have emission requirement permits. And we saw studies that showed if we unilaterally did something in the United States of America, it would have the effect of increasing, and not decreasing, CO_2 on a global basis. What guarantees would—that there would be any kind of global concentration reduction with this regulation, in your opinion?

Mr. MEYERS. Well, I think California has detailed the effects following from its California program initiatives. I think that on the general matter of U.S. initiatives standing alone, we have analyzed

that in connection with the Warner-Lieberman legislation. What we showed was, without concerted international effort over the time period of roughly 100 years, global concentrations would rise to over 700 parts per million. Implementation of Warner——

Lieberman, without a concerted international effort would, on the order of 20 parts per million, decrease from that.

So, clearly U.S. unilateral action alone is not sufficient or would be overwhelmed by international emissions.

Senator INHOFE. Yes. State again the study that this, the genesis of this conclusion. You said——

Mr. MEYERS. Excuse me?

Senator INHOFE. The study that you quoted.

Mr. MEYERS. Oh, the study I quoted was our analysis that we provided the Congress with regard to Lieberman——

Warner.

Senator INHOFE. Yes. That was very, very significant. I have people ask me—yesterday I was in Shady Point, Oklahoma. Madam Chairman, I doubt if you have ever been to Shady Point, Oklahoma. It's a coal producing——

The Chairman. Have you been to Shady Lane in my state?

[Laughter.]

Senator INHOFE. No, I haven't.

The Chairman. You're right, I haven't been there.

Senator INHOFE. And that question comes up. You know, I go back every weekend and I get the logical questions. They say, wait a minute. Let's just say that we do everything that we can possibly do here, and it is enforceable and people respond, how is that going to reduce anything on a global basis? And, you know, it doesn't.

Now, we have another witness on the next panel I am going to ask some questions to. I understand the Small Business Administration's Office of Advocacy raised serious concerns about this proposal. Are there any safeguards in the Clean Air Act that would guarantee that the impacts on small businesses would be considered, just be considered, for example being subject to SBAR panel under the Small Business Regulation Enforcement Act?

Mr. MEYERS. Well, the provision you cited is actually not in the Clean Air Act, but the Agency would certainly obviously examine its affect of any regulations on small businesses as it is required to do under other statutes and to the extent that we would have a substantial impact on small businesses, certain actions would be required under SUBREFA, including possible SBAR. It depends upon the action and if the review is done with respect to the particular action.

Senator INHOFE. Well, under Section 111, to what extent would the EPA be able to consider energy impacts? Now, I'm thinking about fuel switching and these things. Is that going to be a consideration?

Mr. MEYERS. Well, in general, section 111 has standards for both new and existing source provisions. It is, I think we detail in the NPR, a more flexible provision of the Clean Air Act which couldn't allow for consideration of energy impacts. But that, again, is in the context of how we've applied the law previously. Obviously, GHGs raise broad issues in terms of how they fit into the Act to which Senator Voinovich was referring.

Senator INHOFE. Yes, and I think Senator Craig talked about that, too. Thank you, Madam Chairman.

The Chairman. Thank you. Senator Klobuchar.

Senator KLOBUCHAR. Thank you very much, Chair Boxer. As Senator Inhofe knows, I was in Oklahoma a month ago, at Fort Sill——

Senator INHOFE. MM-hmm.

Senator KLOBUCHAR [continuing]. to bid farewell to some of our National Guard troops and it was 109 degrees, so I wish I was at Shady Point because we needed a little shade there.

Senator INHOFE. It was about 100 degrees at Shady Point.

Senator KLOBUCHAR. Very good.

OK, Deputy Assistant Meyers, I had some questions. First of all, the timing of this. I talked about, in my opening, that it was 17 months ago that the Supreme Court and, from my perspective, the EPA has slow-walked this process and unnecessarily delayed these regulations. How much longer will the American public have to wait before we get these regulations?

Mr. MEYERS. Well, Senator, I mentioned in my opening statement that the comment period for the NPR closes on November 28th. Once that closes, it would be incumbent upon the administration to start to review the public comments received and decisions would flow from that.

Senator KLOBUCHAR. So, that is what date? November?

Mr. MEYERS. November 28th.

Senator KLOBUCHAR. November 28th. And you guys get out of office——

Mr. MEYERS. Well, it is noon on the 20th or the 21st.

Senator KLOBUCHAR. OK, so do you think you would have it all done by then?

Mr. MEYERS. I would be hesitant to project, since the public comment period is still open.

Senator KLOBUCHAR. Now, California, as you know, Minnesota, and a number of other states are waiting for the EPA to grant a waiver so that they can go forward with their greenhouse gas standards. If asked by your successor administration, since that is where we are ending up and I suppose you would have discussions with the next administration about what to do on this issue of the waiver, what would you advise them?

Mr. MEYERS. Well, we have addressed the waiver petition that we have and the Administrator decided and detailed his reasons for not accepting the waiver. So, that is the Agency's position right now with regard to the waiver.

Senator KLOBUCHAR. What would you suggest they do on the endangerment finding?

Mr. MEYERS. Endangerment——

Senator KLOBUCHAR. About what we are talking about here today.

Mr. MEYERS. I think the NPR contains a fairly robust section with regard to endangerment and we also contain, in the endangerment TSD, roughly 100-plus pages of technical scientific information. So, I think the next administration will benefit from all of this activity and all the information that is provided——

Mr. MEYERS. Do you think the public would benefit if we would make it public? That endangerment finding that we read in the back room?

Mr. MEYERS. Well, the endangerment—again, the particular document was associated with the—it was not a stand-alone document. It was a draft proposal that was contemplated with respect to regulatory effort on Vogel, so it was not, it was not ever intended as a stand-alone document.

Senator KLOBUCHAR. It looked like it stood alone to me. I mean, you know, it was—I don't know how many pages? 30 or 50 pages.

Now, your testimony asserts the potential complications from trying to regulate greenhouse gas emissions under the Clean Air Act, but as two members of the second panel have pointed out in their testimony, Mr. Burnett and Ms. Nichols, you don't have to begin the process with the most difficult regulatory approaches. Would you agree, as they pointed out, that you could start with what they call the low-hanging regulatory fruit, with some of the easier things that would be done with low cost emissions, or no cost emissions, changes before building the more complicated regulatory process that we would need?

Mr. MEYERS. Well, I think my opening statement, and I referenced the fact that it is very unpredictable to know exactly where you will end up under the Clean Air Act. Certainly in the NPR, we addressed, and especially the supplementary information in the TSD on stationary sources, different options for stationary source cost control. But, if the overall question is it a legally controllable process, can the EPA stage or roll-out different rule—making in the time-frame, that is one of the main things, one of the main questions we were asking because of the interconnectedness of the Clean Air Act. One action has some other activity in the other section of the Act, that is something to be very concerned about. And I don't think we provided a definitive statement with the NPR——

Senator KLOBUCHAR. So, you don't think we could triage this and do some of the easier things first?

Mr. MEYERS. I think that is a question we are looking at and soliciting public comment on. I think, I think people can have opinions on that issue, but that broad of an issue with respect to GHGs has not been promulgated by the Agency or litigated in courts.

Senator KLOBUCHAR. Mr. Meyers, Jason Burnett's testimony in the past has indicated that President Bush and the administration initially agreed with the plan to regulate greenhouse gas emissions and later change, the administration later changed their mind or he changed his mind. Why do you think the President decided not to regulate greenhouse gas emissions?

Mr. MEYERS. I don't have a—I'm not sure exactly what you are referring to.

Senator KLOBUCHAR. Well, if you look at Mr. Burnett's testimony, he talks about how there was some movement to do this, that is why the endangerment finding came about, and then there was a meeting and supposedly there was a change in direction.

Mr. MEYERS. I have briefly read, you know, are there particular sentences in his testimony which, I mean——

Senator KLOBUCHAR. So, you don't know anything about this?

Mr. MEYERS. Mr.—I know Jason has submitted testimony, I mean——

Senator KLOBUCHAR. OK, well let's go back to what President Bush said because he said that climate change is a serious global challenge. He said this. And, given the seriousness of this issue, why hasn't the administration done anything?

Mr. MEYERS. Well, I think, as I detailed in my opening statement, the administration is moving forward with about 60 Federal programs, has invested $45 billion in climate change technology science, and the Administrator committed, in March of this year and delivered in July, a voluminous, very detailed NPR which describes all of the issues of the Clean Air Act and greenhouse gas emissions, so I would submit that is a very considerable record.

Senator KLOBUCHAR. It is a record, but it hasn't had any effect.

I know I am out of time here and I will do in writing my question about what you would know about President Bush—what Jason Burnett's testimony. If you don't know about Jason Burnett's testimony, as least you can tell me what you know about why the administration changed direction. Thank you.

The Chairman. Well, Senator, that is a very appropriate question. And if Mr. Johnson were here, it would be a lot easier to get the answer, but he has been in hiding since March. He has not come to any of our meetings. And I know it is not the most pleasant thing for him to do, but it is his job, and you would have had an answer. You might not have liked it, but at least you would have someone who could speak to it. Mr. Meyers doesn't feel comfortable or doesn't remember or something.

Senator Voinovich?

Senator VOINOVICH. Mr. Meyers, this may be the last opportunity that I can publicly thank you for your great service to the Environmental Protection Agency. I recall working with you on our efforts to get Clear Skies passed in the late hours, and working with Senator Carper and I to try to work something out. And I just wanted you to know how much I appreciate your service and the fact that you have agreed to stick around and not fly the coop before this administration ends. And I would like you to pass on to your family how much I appreciate, and all of us appreciate, the sacrifice that they have made so that you can serve our country.

Mr. MEYERS. Thank you very much, Senator.

Senator VOINOVICH. Senator Craig, in his comments, talked about a reasonable balance and I would like to get back to my problems over the years in this committee. That is, we haven't harmonized the environment, our energy, our economy and our national security. What we do here in this committee has a large impact on the quality of life who live in our respective states.

For example, my wife and I are trying to figure out which gas company we are going to sign up with for heating our home. It is around $12 an MCF. Back in 1971, it was around $2.50 an MCF. We can afford it, but there are millions of people in the United States that these high natural gas bills are impacting on their standard of living. In addition to that, decisions that have been made in terms of the availability of natural gas now, in terms of oil—today, the cost of oil is dramatic and, again, having a large impact on the quality of life and standard of living of our people.

So, I think that anyone looking in on this hearing today has to understand that this committee has had a large impact on this country during this period of time. And one of the things that logic dictates is that if we had intended for the Clean Air Act to include greenhouse gases, CO_2 emissions, why in the world did we spend hours and hours and hours trying to put together a piece of legislation to deal with greenhouse gases? And why in the world are many of us, who weren't happy with that piece of legislation, working to try to come up with a compromise bill that would be less intrusive on our economy, take recognition of the State of technology in terms of capturing and sequestering carbon, and also understanding that we need to have an international dimension to this for, if we don't, we could do everything, shut down all greenhouse gases, and not really make any kind of real impact in terms of the global issue, global warming, that we are confronted with? And many of us are very concerned about it because we know the Chinese are putting on two coal-fired plants each week. And so we have to put what we are doing here in that context.

So, one of the things that I would like to ask you is does the Clean Air Act provide any flexibility, consider how its regulations could put U.S. firms at a competitive disadvantage by raising their impact costs compared to foreign competitors? Especially outside of an international agreement with the world's major emitters. And I want to say this publicly that any greenhouse gas legislation that we pass has got to have an international dimension so that we can bring in the other emitters as our partners and put money into finding the best technology that is available.

Mr. MEYERS. Well, Senator, the Clean Air Act does provide, in some provisions, to account for emissions under Section 179 of the Act. But, if the question was referred to whether there is a specific provision to allow international competitive disadvantage or international actions by other firms, I am not aware of a specific statutory provision in the Act on that point.

Senator VOINOVICH. So, what you are saying to me is that you can't take into consideration the impact that this might have on our competitive position in the global marketplace?

Mr. MEYERS. Well, what we can and can't consider on various provisions of the Act varies, according to the statutory language. In some provisions of the Act like NACs, we can't consider cost at all. In other provisions of the Act, we can consider costs.

I think, in trying to address your question, I would say that I don't know of any reference to international cost or international, you know, competition as a specific term within the Act that the EPA could rely on if it were to make that interpretation.

Senator VOINOVICH. And Mr. Meyers, if EPA were to establish NACs for CO_2 2, how long would it take before the emission reductions would actually be required?

Mr. MEYERS. Well, the NACs process, it requires several steps. It would first require the listing of the pollutant and the production of a criteria document following the 108, 109 process. The Administrator then would need to consult with CSAC, determine the level, propose and go final. Once a final regulation is produced under the Act, that triggers the implementation provisions which require states to file implementation plans, those are triggered from the

final regulations. So, within a few years from initiation, you might be to a final rule and then you would have many years after that for the SIPs and for the final attainment dates.

Senator VOINOVICH. Two to 3 years?

Mr. MEYERS. No, in general, under SUBPAR one, there is 5 years, with the possibility of extension for another 5 years, or a total of 10 years for attaining NACs. The plans are to designate—we have an interim step of designations from 1 year from the point in time in which the final rule goes and then we have the SIPs due in 1 year, with the possibility of extension of 1 year. Not to get too into the weeds, but you are correct. It is a multi-year process that requires many different steps under the NACs, both in setting the NACs and then in getting the State plans in and then establishing appropriate attainment dates.

The Chairman. Thank you, Senator. Let me say again, on this quality of life issue, which is very key, I noticed that Senator Voinovich was focusing on the economics of it, which is very appropriate. That is why we need a middle class tax cut. That is why we need to make sure that people have alternatives to the old ways of energy so that we have some competition.

We could agree or disagree at the end of the day, that's why I'm excited to hear from our next panel on what are the effects on the economy of moving forward.

But, you know something, I have to say Senator, you've got to think about the quality of life on the individual, which is what this is about. If people can't breathe, they can't work. If people's kids are missing school, they may not be ready for the work force. So, in environmental laws, we have to weigh it all. And we may, at the end, disagree but I hope we would look at—I'm very willing to look at the economics, what it does to jobs, what it does to home heating fuel because, the truth is we do have a heat program and we have to help people get through this. We need to get alternatives. We also have to look at what it means to clean up the environment and look at the cost if we don't, to their health, to their lungs. We have to look at what happens with unfettered global warming.

I just read, and I am going to give this to my friend, Senator Voinovich, a report done by the American Pediatrics Organization. It is all these doctors that take care of kids. I was stunned that they said that the impacts of global warming, if it is unchecked—and we know the whole world has to do it, we are all aware of this—the fact is, if we don't do it, the kids pay the heaviest price. And they list what happens, what diseases, what conditions, what happens from the higher temperatures, what happens from the new vectors.

So, quality of life is very key and I would ask unanimous consent to place in the record "The Change in the Incidence of Adverse Health Effects Associated with Various Pollutants" since the Clean Air Act was put into place because what we are going to find is, lives have been saved.

And where I agree with my colleague 100 percent, you've got to look at everything. Don't forget the basics of what this committee is about, and that is protecting the health and safety of the people.

I would call on Senator Whitehouse.

Senator WHITEHOUSE. Thank you, Chairman. Mr. Meyers, how involved were you with the California Waiver Application evaluation within EPA?

Mr. MEYERS. I was certainly involved in the analysis on that decision. Many of the—it was a joint effort between OAR and our Office of General Counsel.

Senator WHITEHOUSE. So, you were very closely involved?

Mr. MEYERS. Yes, I would say I was closely involved. Yes.

Senator WHITEHOUSE. Is it true that the advice and recommendation of the advisers within EPA to the Administrator was for Administrator Johnson to grant the waiver or at least grant the first few years of the waiver?

Mr. MEYERS. I wouldn't be aware of all of the advice and recommendations that the Administrator would have received, so I couldn't State categorically that was the case——

Senator WHITEHOUSE. Can you tell us of anyone who gave him advice or any entity within EPA that gave him advice not to grant or partially grant the waiver? Can you name an entity or an individual within EPA who gave advice other than to grant the waiver, or at least grant the first few years of the waiver?

Mr. MEYERS. As an individual, no. The options that the Administrator reviewed——

Senator WHITEHOUSE. No, no. I am not asking about the options, I am asking about the ultimate recommendation by the staff. Was there anybody affiliated with the EPA who gave advice, other than to grant the waiver or at least grant the first few years of the waiver?

Mr. MEYERS. Within what time period would that question pertain to?

Senator WHITEHOUSE. Within the decisionmaking process, as it came to——

Mr. MEYERS. Well, the——

Senator WHITEHOUSE [continuing]. you tell me what time-frame you are talking about.

The Chairman. Can you answer the question, please, if you can?

Mr. MEYERS. I am trying to answer the question, but——

The Chairman. Well, just divide it up into a time—frame then.

Mr. MEYERS. I mean, the——

Senator WHITEHOUSE. Let's start with ever, OK?

[Laughter.]

Senator WHITEHOUSE. With respect to the California Waiver Application——

Mr. MEYERS. Right.

Senator WHITEHOUSE. Can you name any entity or individual within the EPA who ever gave Administrator Johnson the advice not to grant the waiver or at least the first few years of the waiver?

Mr. MEYERS. I cannot identify an issue, or such a person at this hearing within my memory.

Senator WHITEHOUSE. OK. So, why was the time-frame relevant if it never happened?

Mr. MEYERS. Because, because the waiver was received for some time at the Agency, actually it may have even been received, or requested, predating my tenure, and then we went through Mass v.

EPA and there were various, various—I'm sorry, I'm confusing the issue.

The waiver was before the Agency for some time, many months and more, so——

Senator WHITEHOUSE. And during that time, to your knowledge, no member of the EPA and no entity of the EPA ever recommended that Administrator Johnson not grant the waiver or at least not grant the first few years of the waiver, correct?

Mr. MEYERS. If you are asking me with respect to remembering if an individual said that in my presence, in front of the Administrator, I would say I don't have any memory of that.

Senator WHITEHOUSE. Is that the only way you got information? Would you also read memos?

Mr. MEYERS. Well, I——

Senator WHITEHOUSE. Did you have other ways of gathering information as the Director?

Mr. MEYERS. Well, the question goes to the Administrator's decisionmaking and who told——

Senator WHITEHOUSE. No, the question goes to what you knew, thought, read. I am just asking for information that you know.

Mr. MEYERS. OK.

Senator WHITEHOUSE. And you just tried to divide it off to only stuff that was said orally, in front of you, but you don't limit yourself in your role to information that you gather orally in front of the Administrator, do you? You presumably read documents and you get staff briefings?

Mr. MEYERS. Sure.

Senator WHITEHOUSE. And, in light of that, did anyone within EPA ever recommend to the Administrator that he not grant the waiver, or at least not grant the first few years of the waiver?

Mr. MEYERS. My response is—the question asked is that did anyone at the EPA—we have 17,000 people at EPA. I don't know at every meeting who——

Senator WHITEHOUSE. To your knowledge.

Mr. MEYERS. To my knowledge, no.

Senator WHITEHOUSE. And it became the EPA's plan to have a partial grant of the waiver, correct?

Mr. MEYERS. EPA doesn't, it isn't a person. I don't know that the EPA would have a plan. The EPA is an organization.

Senator WHITEHOUSE. You know, I'd be prepared to agree with you on that in a lot of subjects. Was there not an internal decision made by Administrator Johnson to take a plan, to have a partial grant of the waiver, to the White House?

Mr. MEYERS. That's—I'm sorry. That was your question? Was there a plan to, for a partial waiver——

Senator WHITEHOUSE. Was there not an internal decision made at EPA to take a plan to grant a partial waiver, a partial grant of the waiver, to the White House and inform them of that plan by EPA?

Mr. MEYERS. There—I think the Administrator has testified there were numerous meetings with respect to the waiver.

Senator WHITEHOUSE. Yes, but as to the question that I just asked you. Would you like it read back? I would just like you to answer that question, not other questions.

Mr. MEYERS. Well, the question is very broad as to whether there was any plan.

Senator WHITEHOUSE. Should we break it into smaller parts?

Mr. MEYERS. No, Senator. I am just trying to answer the question. I am trying to be fully responsive to your concerns and your questions.

Senator WHITEHOUSE. I am trying to understand the question.

The Chairman. Can you repeat the question——

Senator WHITEHOUSE. The question is whether EPA made an internal decision to grant the waiver and the Administrator took that plan to the White House to give them advance notice of it? Did that happen?

Mr. MEYERS. I believe the Administrator has testified that he had discussions with interagency colleagues concerning his plans on the waiver. With reference to your question, it omits, and I don't mean to parse it too much, but you're saying whether EPA as an organization made a decision. So, that is why I'm having difficulty, as EPA——

Senator WHITEHOUSE. Let's back up a little.

Mr. MEYERS. Sorry.

Senator WHITEHOUSE. Did the Administrator go to talk to the White House about the California waiver situation?

Mr. MEYERS. I believe he has testified that he had discussions with his interagency——

Senator WHITEHOUSE. To your knowledge, did he go to the White House and talk about this?

Mr. MEYERS. I believe that he had discussions with regard to the waiver with members of the executive branch.

Senator WHITEHOUSE. And did the—at the White House specifically. I mean, he is a member of the executive branch, that's not very useful. I am asking you about the White House.

Mr. MEYERS. Oh. I don't know exactly where all of his meetings may have taken place.

Senator WHITEHOUSE. Did one take—did any take place at the White House about this?

Mr. MEYERS. I, I——

Senator WHITEHOUSE. You keep asking questions that I haven't asked. You keep answering questions that I haven't asked. If you could pay attention to the question, this might be a lot easier.

Mr. MEYERS. Yes, sir. OK.

Senator WHITEHOUSE. Did the Administrator go to the White House to give them notice that it was EPA's plan, his agency's plan at that point, to approve a partial grant of the waiver?

Mr. MEYERS. I believe that is a question best directed to the Administrator.

Senator WHITEHOUSE. He's not here. We have you. You said you were closely involved. I am asking you of your personal knowledge.

Mr. MEYERS. And, to my personal knowledge, I know the administrator had discussions at the White House——

Senator WHITEHOUSE. Regarding the California waiver?

Mr. MEYERS. Right. But I was not present at those discussions with the Administrator so it is very difficult, if not impossible, to testify to exactly what was said at those meetings——

Senator WHITEHOUSE. Were you present at meetings that prepared him for that——

Mr. MEYERS. I was present at numerous meetings in preparation for the consideration of the waiver, yes. I was at many meetings.

Senator WHITEHOUSE. And, during those meetings, did it ever become clear that the EPA's position, subject to the notification of the White House, was going to be a recommendation for a partial grant of the waiver?

Mr. MEYERS. A partial grant for a waiver was certainly an option we spent a lot of time discussing, the Administrator spent a lot of time discussing.

Senator WHITEHOUSE. And it was one that no one disagreed with, you already testified.

Mr. MEYERS. I testified that I did not know or——

Senator WHITEHOUSE. Correct.

Mr. MEYERS. I could not remember——

Senator WHITEHOUSE. You didn't know of anybody who disagreed with it.

Mr. MEYERS. Right.

Senator WHITEHOUSE. And you were closely involved with the process.

Mr. MEYERS. That is correct.

Senator WHITEHOUSE. And he discussed it with the White House?

Mr. MEYERS. I believe he has testified that he discussed the waiver——

Senator WHITEHOUSE. In fact, in December, he made his plan known to the White House, correct?

Mr. MEYERS. I do not know a precise time-frame when he may have had discussions.

Senator WHITEHOUSE. You don't remember the time—frame?

Mr. MEYERS. Well, I mean—obviously discussions occurred prior to December 19th, which was the date that the Administrator signed the letter to Governor Schwarzenegger but, if you—I don't—I can't. The Administrator has a lot of meetings and I don't know of all the meetings that he has, so it is very difficult for me to respond to the issue of a particular meeting at a particular time that I did not attend.

The Chairman. Senator Whitehouse, what I would like you to do——

Senator WHITEHOUSE. I think my time has expired——

The Chairman. I know, but I think it is so key. We need to get to the bottom of this. I would allow you to do one additional question and then if you could sum up what you think you've learned.

[Laughter.]

Senator WHITEHOUSE. To your knowledge, did the White House offer any opinion about the plan that the Administrator went there to give them notice of? And, if so, what was that opinion?

[Pause.]

The Chairman. Senator, would you repeat the question?

Senator WHITEHOUSE. I think the——

The Chairman. Please repeat the question.

Senator WHITEHOUSE. I'm actually comfortable with the question as I posed it.

The Chairman. I know, but I would like you to repeat it, for me, if you would.

Senator WHITEHOUSE. May we have the clerk read it back?

The Chairman. Yes.

Senator WHITEHOUSE. I don't want there to be any lack of clarity about the question so we can get to this answer. Could the clerk read back the question?

The Chairman. Can the clerk read back the question, please?

I'm sorry, are we waiting for the clerk, is that——

Sir, you are conferring with someone. Could you tell us who that is that you are conferring with?

Mr. MEYERS. I'm sorry, I was talking to a representative from our Office of General Counsel.

The Chairman. OK.

Senator WHITEHOUSE. May I inquire as to the name, Chairman? May I inquire as to the name of the person?

The Chairman. Could we have the name of your representative?

Mr. MEYERS. Sure, sure. I was talking to Allison Starmann, who is with our Office of General Counsel.

The Chairman. OK.

Senator WHITEHOUSE. Thank you.

The Chairman. Please read back. It was the last thing that was actually spoken. There was a very long pause. It would just go to right before the long pause.

The Clerk. "The Chairman. Good, wonderful. Thank you so much. We are sorry to throw this curve at you."

The Chairman. It's all right. I mean, we have a pause of 2 minutes. I need to have—I forgot what the question was, the pause was so long. It's my fault and I need to hear it again.

Senator WHITEHOUSE. I am too used to court reporters who read back the question, I'm sorry.

The Chairman. Right, right.

Senator WHITEHOUSE. A different routine here, I apologize, but thank you for your help.

The Clerk. "To your knowledge, do you have any opinion about the plan that the Administrator went there to give them notice of and, if so, what was his opinion?"

The Chairman. Mr. Meyers.

Mr. MEYERS. Oh, the—I believe the Administrator did consult with officials in the executive branch——

Senator WHITEHOUSE. The question was about the White House.

Mr. MEYERS. The White House, I believe he consulted with officials at the White house.

Senator WHITEHOUSE. Yes.

Mr. MEYERS. I believe that he informed them of his consideration of the California waiver. I believe——

Senator WHITEHOUSE. And specifically that he was planning to grant or partially grant it?

Mr. MEYERS. I was not—earlier I testified that I was not at the meeting so I cannot testify as to what the Administrator may have said at a meeting that I——

Senator WHITEHOUSE. That's fair enough. Did you help prepare him for that meeting?

Mr. MEYERS. I was part of the general effort and multiple meetings that prepared him on the California waiver.

Senator WHITEHOUSE. And when he left for the meeting, was it everybody's understanding that——

Mr. MEYERS. I——

Senator WHITEHOUSE [continuing]. that is what he was going up to do. Whether he did it or not is something you obviously cannot testify to——

Mr. MEYERS. I cannot remember to a specific day. I have literally—I run an office with 1200 people and probably have a dozen meetings every day, so I cannot testify clearly as to remembering a specific meeting prior to a meeting——

Senator WHITEHOUSE. Even though this is your Administrator going to the White House to discuss a matter that will effect about half of the country?

Mr. MEYERS. I am testifying, I think I am testifying as to, I believe that he did go to the White House and did talk to people concerning the California waiver. You're specific——

Senator WHITEHOUSE. Did the White House offer any opinion about the plan?

Mr. MEYERS. I believe they may have offered various comments, depending on who was at the meeting.

Senator WHITEHOUSE. And what were you told about what comments were made? What was brought back to you? What did you hear? What was reported to you, about that, about the opinions that the White House offered on that matter?

Mr. MEYERS. I am trying to recollect my memory of events and am having trouble because it is asking me to recall specific meeting, a specific time, and a specific report back, perhaps from the Administrator, and I am not sure that I can remember events with that much detail, but I am trying to fully cooperate with your question and your committee and trying to give this a serious response. So, it would be my——

Senator WHITEHOUSE. Well, let me ask you it this way. The storyline that has developed on this is that, in a nutshell, the EPA staff agreed in to that a partial grant was appropriate, that you and others briefed the Administrator for his meeting with the White House, that he went up to the White House and that everybody's intention was that he would disclose to the White House that you were planning to grant the partial waiver, that this was a matter of enormous consequence to California and a variety of other states, comprising nearly half of the population of the United States. That he went to the White House and, when he came back, there was a completely different plan.

That sounds like something that would be memorable no matter how many meetings you had scheduled in your day.

Mr. MEYERS. To my—I mean, the Administrator made his decision on the Waiver when he signed the document on the Waiver denying California's request. That's when——

Senator WHITEHOUSE. You mean, the moment before he signed it he hadn't made up his mind? He waited until he had the paper in his hand and then suddenly something came over him?

Mr. MEYERS. No, no, I'm just saying the decision document—the decision document——

Senator WHITEHOUSE. We know that; that's true as a matter of law. We're trying to get into the process that happened behind it.

Mr. MEYERS. The process behind it was that we had numerous meetings with the Administrator, we presented many options during the course of this time. He consulted with us. He consulted with his inter-agency colleagues, and—and then he ultimately reached a decision.

Senator WHITEHOUSE. But your testimony—your testimony is that you can't remember what opinion or position the White House offered—what you heard about the opinion the White House offered after this meeting between the Administrator and the White House on the California Waiver. That is what you've testified to today and that's what I want to make sure I'm clear on.

Mr. MEYERS. Sir, sir,——

Senator WHITEHOUSE. You don't remember——

Mr. MEYERS [continuing]. I'm testifying in the context in which I'm testifying, which is—is trying to recall a——

the inference here is that there was a specific meeting, that he came back and he told me something specifically, as I'm—as I'm interpreting your question. There were numerous meetings. There were numerous consultations, so the difficulty I'm having in responding to your question, sir, is—is trying to remember——

Senator WHITEHOUSE. I hear the gavel.

Mr. MEYERS [continuing]. to remember a specific event which—for which the date is not being provided me.

Senator WHITEHOUSE. I hear the gavel, and I understand that I have gone considerably over my time. I appreciate very much——

The Chairman. It's very important what——

Senator WHITEHOUSE. I appreciate the Chairman's indulgence. I think that—the Q and A that I had planned could easily have fallen within the 5-minutes that I was allotted, and obviously it did not.

The Chairman. No, that—that's why I gave you the time. Listen——

Senator WHITEHOUSE. I appreciate the——

The Chairman. Listen——

Senator WHITEHOUSE [continuing]. Chairman's courtesy.

The Chairman. Senator Whitehouse, I just want you to know that what I think you've done with this series of questions is you've shown that what Mr. Johnson told us was not the truth, and we had asked the Justice Department to look at his statements regarding the Waiver.

Now, Mr. Johnson, I don't know if you remember, said, Oh, he didn't remember any meetings. They were routine meetings. And, he said he had lots of views offered to him. We heard from this witness he remembers going to the White House—that they went to the White House, and that, in fact, he couldn't remember anyone, at least, not in his time there, who said anything other than grant the Waiver, a partial Waiver.

So, we're going to send this to the A.G. to take a look at this. But I think that this—the reason I was glad to allow you to continue is because this decision on the Waiver was monumental. So many states in the teens, maybe even over 20 now, are hanging on this, because if George Bush doesn't want to regulate global warming, other states do. So, that's very, very key.

And—and by the way, we had Mary Peters come here and say she—to the Commerce Committee, on which I serve—admitted that she was lobbying against the Waiver. So, this was a monumental moment where the Administration against the rules were even having Mary Peters call Members of Congress. We had the whole auto industry.

So, to say we had routine meetings about the Waiver? I think today we took a giant step forward in showing that wasn't the case. And that's why I thank you, and I would ask now that the next panel come up. Thank you, Mr. Meyers, for your help in this regard in getting to the truth.

And I have asked that we do this quickly, because time is not our friend, and we have a lot of witnesses here, and we look forward to hearing from all of them. We have one, two, three, four, five witnesses. Each one has five. OK, we need to move quickly.

I appreciate the patience of the panel. We're going to start with Hon. Mary Nichols, who's Chairman of the California Air Resources Board. Chairman Nichols, we so appreciate your coming. Then we'll move down Jason, David, Bill, and Marlo. OK.

Would you put on your——

STATEMENT OF HON. MARY NICHOLS, CHAIRMAN, CALIFORNIA AIR RESOURCES BOARD

Ms. NICHOLS. There we are. Good morning, Madame Chairman.

The Chairman. We're asking you each to stay to 5 minutes because we have questions. Go ahead.

Ms. NICHOLS. Yes. I have submitted my written testimony for the record, and I will not repeat it here. I have to admit, I am suffering from whatever that syndrome is where you have flashbacks, having listened to the previous testimony.

As you know, Senator, I—I served as an appointee in the Clinton administration as the head of the office of Air and Radiation at EPA, and had many opportunities to testify before this panel and others. I never experienced anything quite like that, and I hope I never would have to be in such a position in my life.

The Chairman. Well, welcome back.

Ms. NICHOLS. But I think, frankly, the reason why that interchange took place is because of the fact that there has never been in my knowledge anything like the process or the result that occurred with that advance notice of proposed rulemaking.

I was involved in—in—developing the new standards for ozone and fine particles that ultimately were upheld by the U.S. Supreme Court and the American Trucking Association vs. Brown, our case. Very, very highly contested set of standards, they were opposed by many organizations including the U.S. Chamber, the auto industry, and others.

Many other agencies in the government had concerns and questions about whether EPA should be adopting those standards. There were vigorous and contested meetings held under the auspices of the Office of Management and Budget, but when a decision was finally made and was announced by the EPA, and there were hearings held, the Administration completely and totally backed EPA in its decisionmaking process.

And I believe that there is a—there simply has not ever been a situation where all of the other agencies turned on the Environmental Protection Agency in the way that they did publicly during this process. It's not a good—it's not a good sign, frankly, for the ability of the Administration to pull together, and I'm hoping that a result of this hearing will be some direction coming from this Committee to the next Administration as to how to approach interpretation of their legal authority.

The term, Aslow walking was used, I believe, by Senator Klobuchar about how EPA approached their decisionmaking under the Clean Air Act here. I think of it as being a situation where we're facing a crisis. We've all acknowledged that global warming is a crisis of global proportions, and the question is, what are we going to do about it?

Clearly, Congress should act. Governor Schwarzenegger has supported your efforts, Senator Boxer, enthusiastically, to try to pull together an economy-wide program for the United States, something that we could take to the international community and—and use as part of the basis of a—of a truly global solution to this problem.

But in the meantime, we don't think it's excusable to fail to act. That's why California passed the 2006 Global Warming Solutions Act, which we're now in the process of implementing, and why we believe EPA should use the authority that it has under the Clean Air Act.

In my testimony, I outlined what I believe some of those abilities that it has to act are, and why we think EPA should be moving forward even without additional authorization, and I also would be happy to answer questions about why even though our State and many others frequently don't see eye to eye about various matters of implementation with EPA, we still support the notion that EPA should exercise the legal authority that it has to help move the ball forward. Thank you.

[The prepared statement of Ms. Nichols follows:]

Testimony of the Honorable Mary D. Nichols
Chairman
California Air Resources Board

Before the Senate Committee on
Environment and Public Works

Hearing on Regulation of Greenhouse Gases under the Clean Air Act
September 23, 2008

Chairman Boxer, Ranking Member Inhofe, and distinguished Members of the Committee, thank you for the opportunity to testify before you today on the regulation of greenhouse gases under the Clean Air Act. My name is Mary Nichols, and I serve as Chair of the California Air Resources Board. In addition to my two separate terms leading the Air Resources Board, I have also served as Assistant Administrator for Air and Radiation in the Environmental Protection Agency under President Clinton, Secretary of the California Resources Agency, and Director of the University of California, Los Angeles Institute of the Environment. In short, I have studied, implemented, or been subject to the Clean Air Act in many roles for well over thirty years.

Based on this experience, I believe that over its history the Clean Air Act has been proven to be an extraordinarily effective and flexible tool to protect the health and prosperity of our nation, and I have every expectation that it can continue to play a vital role in addressing the urgent challenge of global climate change.

Let me be clear. Governor Schwarzenegger, and the overwhelming majority of Californians, support Congress in its efforts to craft strong, economy-wide federal climate legislation. We were supportive of the effort made in the Boxer-Lieberman-Warner Climate Security Act and we have particularly appreciated, Madame Chairman, your leadership in bringing that legislation to the floor of the Senate for its successful debate. We look forward to doing everything we can to see successful legislation passed and signed by the next President in the 111th Congress.

However, I must begin by emphasizing the need for urgent action. Climate change is a real and urgent threat to our communities, our state, and our nation. In California, as in many of your states, we are already experiencing the effect of climate change. Over the past 100 years we have experienced a seven-inch rise in sea level, eroding our coastal communities and threatening critical infrastructure. In the winter, more of our precipitation is falling as rain than snow, leading to less water availability in the critical spring and summer – an impact that threatens one of the most productive agricultural regions in the world and a pillar of the nation's export economy. Climate change is also a major factor in our longer and more severe wildfire season – an impact already dramatically illustrated this year with over 1 million acres burned. And these effects are merely a preview. It is predicted that without major efforts to reduce greenhouse gases, in

this century California will see a one to two foot sea level rise, a seventy-five percent loss in snow pack, twice the frequency of drought years, and fifty-five percent more large forest fires. I emphasize this threat in order to preface my contention that we must act urgently, and further that there is unlikely to be one, comprehensive solution to this challenge.

I believe, and many state officials join me in the belief, that the Clean Air Act can be a valuable component of the United States' response to climate change. Opponents of action on climate change are using a false bogeyman of regulatory nightmares under the Clean Air Act to delay any action at all. In fact, the Clean Air Act has been one of the most successful federal programs ever precisely because it is flexible and cost-effective, and there is every reason to believe it will continue to be useful in addressing greenhouse gases (GHGs) in at least two ways:

- **The Clean Air Act can act as bridge to a comprehensive federal policy**. The Act offers the only measures available in the near-term to begin to reduce emissions now. The most well-developed and deployable of these measures – affecting vehicles, fuels, and power plants – are also some of the most powerful and important to have in place as soon as possible. Implementing these aspects of the Act will also build regulatory infrastructure and begin to create the conducive investment environment for low-carbon technologies that is so necessary.

- **In the future, the Clean Air Act will act as valuable complement to an economy-wide market-based emission reduction program** that, we hope, will be enacted by Congress soon. As we have learned in California, an economy-wide cap on greenhouse gases, while necessary, is not sufficient to overcome entrenched market barriers to low-cost GHG reductions. Targeted regulatory programs in certain sectors can accelerate technology deployment and generate savings for consumers that a cap-and-trade alone would not affect.

In my testimony, I hope to support these arguments by: 1) discussing California and other states' experience with building climate policy from the ground up, 2) discussing the principles and strengths of the Clean Air Act that are important for federal climate policy, and 3) proposing a specific sequence of actions the next Administration can take to reap the immediate benefits of Clean Air Act-driven GHG reductions.

California's AB 32 experience – lessons for federal policy

California and other climate leadership states have not waited for the federal government to act. We have taken the initiative and pursued policies that will dramatically reduce our greenhouse gas emissions without negatively impacting our economy. We believe we have developed some valuable experience that can help inform the federal debate, and shed light on the potentially critical role of the Clean Air Act.

In 2006 the California legislature passed and Governor Schwarzenegger signed AB 32, the Global Warming Solutions Act, that established one of the country's most

comprehensive and ambitious greenhouse gas reduction programs. My agency, the California Air Resources Board, was charged with developing the policies necessary to accomplish the ambitious goals of AB 32. **California's experience to date in implementing AB 32 can help inform how Congress and the nation views greenhouse gas regulation under the Clean Air Act.**

Two months ago, my agency released a preliminary roadmap, the Draft Scoping Plan, for achieving the ambitious goals set out in AB 32[1]. Under the Draft Scoping Plan's recommendation, **California will institute a combination of an economy-wide cap-and-trade system and targeted sector-specific regulations**. Our cap-and-trade program will eventually cover 85% of our energy economy, will be linked to our partners in the Western Climate Initiative – currently including seven U.S. states and four Canadian provinces – and will create a reliable long-term carbon constraint signal for industry and business. Our sector-specific policies will include flexible performance standards, market-based measures, and voluntary incentives that are designed to break down market barriers to efficiency, to kick-start transformative low-carbon technologies and strategies, to harmonize related policies, and to provide significant co-benefits to California's economy and residents.

Our policies to address transportation-related GHG emissions are a great example of this integrated and sequenced strategy. At 40% of California's GHG emissions, mobile source emissions must be dramatically reduced if we are to meet our long-term goals, and because of fleet turnover, we must start now. At the same time, economic analysis of the effects of a cap-and-trade by itself – whether in California or nationally – shows that it would have small near-term effect on emissions from the transportation sector. In contrast, **market-based transportation-sector-specific measures such as those we are pursuing in California will generate much-needed innovation in vehicles and fuels, transforming these industries toward a low-carbon future – all while yielding net cost savings to consumers.**

Similarly, California's broad approach to stationary source emissions – including emissions standards and a Renewable Portfolio Standard for electricity, green building and appliance efficiency standards and utility-run energy efficiency programs, and measures to reduce methane releases from landfills and dairies, also look to gather the low-hanging fruit of low-cost emission reductions that might be otherwise be missed due to market imperfections and to create the long-term technological change that will make achieving our climate goals as inexpensive as possible.

Fundamentally, we are taking this approach because we recognize the magnitude of the challenge before us. Beyond 2020, all these mechanisms will be needed to meet California's long-term goal – and the global imperative, according to climate scientists – to cut developed nations' emissions 80 percent from today's levels to stabilize atmospheric greenhouse gases and prevent the most severe effects of climate change. Achieving these reductions will require innovations in technology across all sectors of the

[1] The entire Plan and supporting documents can be found at http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.pdf

economy, innovation that requires the combined action of economy-wide cap-and-trade, sector-specific technology-inducing regulatory programs, aligning and mobilizing action across all levels of government, and deep investment in research, development, and deployment.

Perhaps most importantly, California's integrated greenhouse gas reduction program will refute the criticism that greenhouse gas regulation will harm the economy. To the contrary, **our economic analysis of the draft AB 32 Scoping Plan indicates that reducing greenhouse gas emissions through efficiency and new technology will result in net positive benefits to California's economy.** While there are upfront costs to controlling carbon under a cap-and-trade program, targeting standards and programs to catalyze new technology and energy efficiency saves consumers money over the long term – money that is then spent and re-invested in our state's economy. Furthermore, diversifying our energy supply toward renewables will protect us from volatile energy prices and reduce our reliance on imported oil. And there will clearly be criteria pollutant co-benefits from applying clean technologies to both mobile and stationary sources, which will help states like California meet more stringent federal standards now phasing in for ozone and particulate matter – and more importantly, resulting in real reductions in premature death and illness, lost schooldays and lost productivity. These positive benefits in California would be likely to translate nationally under a similar integrated federal program, resulting in huge net social, economic, and environmental benefits for the country.

Principles of the Clean Air Act and California's approach to AB 32

In my agency's long history with the Clean Air Act and in our current experience with implementing greenhouse gas regulations, we believe that there are powerful principles contained in the Clean Air Act that should be embraced in federal climate policy. These include:

- **Science-based.** The Environmental Protection Agency in its implementation of the Clean Air Act (and not incidentally, the California Air Resources Board) have an exemplary record of using the most rigorous, accurate, and up-to-date research on which to base environmental standards. Despite challenges in the past eight years, the EPA and the Clean Air Act remain the world's gold standard in science-based regulation. The Office of Management and Budget has found the Clean Air Act to be one of the most cost-effective programs in all of the federal government, and Congress and the American people should be proud of the well-deserved respect in which agency scientists are held throughout the world.

- **Technological innovation.** One of the greatest successes of the Clean Air Act has been the ability to catalyze innovation that achieves emission reductions faster and more cheaply than were expected by industry. Rigorous performance-based standards with long lead times and phase-in periods allow industry to plan, prepare, and implement emissions controls in the most cost-effective manner, and unleash tremendous creativity and innovative solutions.

- **Flexibility**. Contrary to the contention of political appointees in the current Administration, the Clean Air Act is not a rigid hammer, ill-suited to regulating GHGs. One of the hallmarks of the Clean Air Act is its flexibility to address inherently complex air pollution issues, and the EPA's Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gases properly focuses on the flexibilities inherent in the Clean Air Act for regulating emissions under the Act. For instance, **although EPA should act quickly, it need not regulate every source all at once but rather can phase-in regulations over time**. There is good precedent for both quick action and long-term strategic planning under the Act. EPA has been regulating smog precursors for over 40 years. While some of the most dramatic percentage reductions in smog precursors occurred early on, as they should in attacking global warming emissions, the Act was applied flexibly, and amended over time as needed and as the state of the science and technology warranted. Such an evolutionary approach can work for greenhouse gases as well.

- **Multi-media and multi-pollutant integration**. The Clean Air Act is uniquely suited to considering the interaction between multiple pollutants, and the unintended consequences that actions to reduce one pollutant may have on emissions of other pollutants. Greenhouse gases and climate change have numerous interactions with traditional pollutants, and an integrated multi-media and multi-pollutant approach is necessary to ensure environmental protection and minimize the regulatory burden.

- **Comprehensive inventory, measuring and monitoring.** In order to institute any effective pollution control program, we must have a rigorous and comprehensive inventory of emissions and program for measurement and monitoring over time. The Clean Air Act provides an excellent foundation from which to build, with a mature technical and institutional infrastructure that could be utilized to implement climate policy. We should not recreate the wheel.

- **Cross-agency coordination and stakeholder participation**. EPA will not be acting alone or unbridled in addressing greenhouse gases. Historically, EPA has worked extensively with its sister agencies in implementing complex regulation, and shares or delegates authority to other agencies in dealing with the areas of those agencies expertise, such as energy production, agriculture, and transportation. Also, the extensive stakeholder process EPA engages under the Clean Air Act, including notice-and-comment, technology assessment, and an extensive docket, is a model of transparency and access unrivaled in federal programs.

- **"Cooperative federalism" and the state-federal partnership.** One of the most important lessons of the Clean Air Act is that in implementing any program as complex as air quality, enlisting agencies at all levels of government is critical. The Clean Air Act has historically been implemented with national goal-setting and state and local follow-through. This cooperative federalism ensures a national

floor of minimum standards, allows flexibility in how those standards are met, and creates room for state and local authorities to exceed those standards. Moreover, the structure leverages resources at every level, breaking an enormous task into manageable pieces and helping to harmonize the many policies, from utility regulation to local land use planning, that affect greenhouse gases yet are implemented by state and local governments. Finally, state and local governments are in an excellent position to mobilize the creativity and enthusiasm of their communities to realize the benefits of new industry and clean technologies. The federalist structure of the Clean Air Act is thus a valuable model for federal climate policy.

The CAA is a critical bridge to federal climate policy

Using the Clean Air Act to begin to address the urgent threat of climate change is clearly warranted, feasible, and critical. Climate change is an imminent and serious threat to the public health and welfare, and anthropogenic greenhouse gas emissions are clearly a major pollutant contributing to this problem. The Supreme Court found as much in their 2007 opinion in Massachusetts v. EPA, and despite the Bush Administration's foot-dragging, the eventual finding by EPA of "endangerment" under the law appears inevitable.

The EPA's ANPR lays out a compelling legal argument that EPA must make a finding of endangerment. The ANPR makes clear what American business, the average citizen, and the global community have known for years: we must regulate greenhouse gases. Regardless of whether and how EPA goes on to promulgate regulations, the endangerment finding is demanded by the clear dictates of the Supreme Court's decision in Massachusetts v. EPA and analysis of the facts allowed under that decision.

We believe the Clean Air Act can provide a bridge to comprehensive national policy. While we are optimistic that the next Congress will be able to act quickly to pass comprehensive climate legislation, it is likely that the Clean Air Act offers the most immediate action to begin to reduce greenhouse gas emissions and a crucial bulwark should swift action elude Congress. The most well-developed, effective, and common-sense Clean Air Act GHG regulations could be initiated within weeks of a new Administration taking office, and could begin to take effect as early as 2009. These regulations could address some of the largest sources of GHGs, and would send clear signals to industry eager for stable policy necessary to begin investing in new technology.

The Clean Air Act can be a flexible component of future federal climate policy, complementing economy-wide or sector-specific federal legislation. When Congress enacts new climate legislation, the Clean Air Act can continue to provide a valuable complement to national climate policy. For example, a national low carbon fuels standard policy that could be promulgated under the Clean Air Act would reduce greenhouse gases, accelerate new fuel technologies and the penetration of new advanced biofuel technologies, while also furthering our energy security goals, much more powerfully than economic analysis suggests a cap-and-trade program alone would do.

While much attention has been focused on the hope for one, single legislative solution that would cover and effectively reduce emissions from all sources, it is possible that Congress may act more iteratively. **If federal legislation instead takes a more step-wise approach, Congress may find that creating new programs in some areas and allowing effective Clean Air Act regulation for other areas provides the most cost-effective and politically viable solution.**

The Clean Air Act can help federal climate policy operate more efficiently, and can cost-effectively address some of the lowest-cost emission reductions. Many of the regulatory approaches discussed in the ANPR would effectively lead to wide market penetration of new energy efficient technologies that decrease greenhouse gas emissions while reducing costs to consumers and businesses. For instance, the kind of "best management practices" approach to "PSD permitting" discussed in the ANPR could function like building codes and appliance standards to result in more efficient new buildings that generate net savings to the economy but would not be built without clear policy incentives.

Timing for implementation of Climate Policies under the CAA

The key to successful Clean Air Act implementation is logical sequencing. Critics seek to scare the public with doomsday scenarios of intrusive regulations affecting all aspects of life, but the truth is this can be easily avoided by starting with the most effective regulations and taking time to work with stakeholders and Congress to develop solutions to any more problematic provisions. Due to both resources and discretion, Clean Air Act regulation will necessarily begin with those regulations that are most well-developed, easily implemented, and powerful.

The timeline for successful implementation of the Clean Air Act begins with the new Administration. The next President can signal a dramatic and positive shift in U.S. climate policy by judicious implementation of the Clean Air Act soon after taking office. The sequence that we believe would be most appropriate includes:

> **1. Rescind the hotly contested and flawed decision to deny California's waiver request and grant California and the sixteen states that have adopted its standard authority to go forward with vehicle greenhouse gas standards.** This action will have the most immediate and powerful near-term effect on emissions, and will send a powerful signal that the new administration takes greenhouse gas reductions seriously and that it intends to work in partnership with the states to harness the power of action at each level of government. These regulations are already developed and promulgated, the public supports the law and is eager for cleaner cars, and auto companies have readily available both the technology and in fact the model plans with which to comply. Allowing these standards to go forward would begin to yield climate benefits almost immediately.
>
> **2. EPA should, in accordance with their obligations under the science and the law, proceed with issuing the "endangerment" determination, finding that**

climate change poses a clear and present danger to human health and welfare, as elaborated in the ANPR. The endangerment finding has already been prepared based on thorough scientific review; it has been scrutinized by stakeholders across the country; and most importantly it is clearly warranted. It will start the process to begin regulating emissions from the largest contributors to global warming pollution – power plants, vehicles and fuels, and major industries.

3. The President should direct EPA to issue proposed federal standards within the first six months for the two largest sources of global warming pollution: power plants and transportation. The schedule for issuing proposed and final standards for these sources should be announced immediately, simultaneously with the endangerment and waiver decisions. Transportation accounts for about one-third of U.S. global warming pollution. Personal transportation (cars, SUVs, and other light trucks) accounts for more than half of transportation emissions, about one-fifth of total national global warming emissions. As we know in California, emissions standards for vehicles and fuels are two of the most powerful and cost-effective policies to reduce emissions.

4. EPA should propose national emissions standards equivalent to those approved under the California waiver, using its authority to set federal standards under Section 202 of the Clean Air Act. EPA should work with California to continue steady emission reductions and gas savings through 2020 and beyond to 2030. Nationalizing the California program would get the maximum feasible emissions-reducing and gas-saving technology into all vehicles nationwide. The Department of Transportation (DOT) should propose consistent fuel economy standards under the 2007 energy law. That law requires the maximum feasible standards with a floor of "at least 35 miles per gallon" by 2020. As the Supreme Court found in Massachusetts v. EPA, there is no inconsistency between DOT regulating fuel economy and EPA regulating greenhouse gas emissions. The Supreme Court encouraged EPA and DOT to coordinate, while emphasizing that EPA's Clean Air Act mandate is "wholly independent" of the fuel economy law. By instructing the two agencies to work together and with California, the new administration can harmonize all three vehicle standards to the maximum technically achievable and cost-effective level.

5. EPA should also promulgate a national low-carbon fuel standard under Section 211 of the Clean Air Act. This standard is compatible with and would build off of the Renewable Fuels Standard program authorized in the Energy Independence and Security Act of 2007. It would harmonize with and eventually supersede the renewable fuel standard, which applies to only a part of the fuel supply. A Low Carbon Fuels Standard encourages the use of the most advanced low-carbon fuels, of plug-in hybrids using electricity, natural gas vehicles, and hydrogen-powered fuel cell vehicles, while ensuring a steady reduction in overall greenhouse gases emitted for every gallon-equivalent of fuel energy.

6. EPA should set standards for new electricity generation that requires the lowest achievable emission rate for each fuel. This performance-based standard would not dictate specific technologies, but would encourage investment in the most efficient low-emission electricity sources, including providing a powerful driver for the introduction of new carbon control and storage (CCS) technologies. The percentage of CO_2 required to be captured and stored could ramp into full effect over a few years, allowing a period for perfecting the technology. With appropriate lead time, best-in-class GHG emissions should also be required of existing plants. California has followed a similar policy since 2006 because we believe it is critical not to "lock-in" high-pollution facilities now, and not to lock-in our consumers to paying the price of high emissions in the future. Preventing the lock-in of high emissions in America's electricity supply has been identified by scientists as one of the most critical near-term policies we should be taking.

The doomsday scenarios are wrong

Critics of GHG regulation under the CAA have spun doomsday scenarios from the Act's new source review (NSR) programs, national ambient air quality standards (NAAQS) program, and state implementation plans (SIPs). Yet decades of experience in implementing or being subject to EPA's implementation of the Clean Air Act have shown me that there is abundant flexibility to avoid any problems with these programs.

Regarding New Source Review, the specter of laborious individualized permit processes for facilities such as hospitals and schools is a red herring. We agree that requiring individual facilities to obtain individualized permits for emissions of 250 tons of carbon dioxide is a ridiculous result –and this is precisely why it is exceedingly unlikely to happen. **The *Alabama Power* and related case law clearly provide EPA with the flexibility to avoid individual permitting for whole classes of emission sources.** California believes that EPA's proposal of modified "potential-to-emit" tests, general permitting requirements for commercial and residential and other classes, phasing in PSD coverage and applying "presumptive BACT" are very promising alternatives. Together, we believe these flexible options will result in EPA "general permits" for small sources that look very much like the building and appliance efficiency standards with which we are all familiar and that have been a major success in both energy savings and consumer benefits.

Regarding National Ambient Air Quality Standards (NAAQS) and related State Implementation Plans, we do not believe NAAQS listing is necessary before, or required immediately after, regulating stationary or mobile sources under other provisions of the Act. First, there are compelling arguments, discussed in the ANPR, as to whether a GHG NAAQS listing is required at all. Second, EPA has considerable discretion over the timing of any such listing, and even under optimistic assumptions, promulgating NAAQS for GHGs could easily take a decade – more than enough time for Congress to develop a legislative solution to applying this particular part of the Act. Finally, even if a NAAQS were developed, EPA already has authority to modify the actions necessary to meet or maintain the NAAQS. EPA can adopt implementation rules that modify the traditional

rules of monitoring, reporting, and conformity, and could move toward a state Climate Action Plan approach to demonstrating maintenance. In short, we believe that the negative consequences of NAAQS and SIPS for greenhouse gases are eminently avoidable.

Although I am confident that the critics' nightmare scenarios are just smokescreens, I would like to stress that we strongly disagree with the statement that EPA should solve all possible challenges that could someday arise in fully implementing the Clean Air Act for greenhouse gases before it can take any action at all. The imperative to act now is overwhelming, and EPA has well-developed regulatory approaches for major sources to implement in the near term. Over the coming years, the Administration and Congress can work together productively to identify any specific provisions that could prove problematic and address them as necessary in an organized and thoughtful way. The baby should not be thrown out with the bathwater.

Conclusion

So in conclusion, the sky, while warming, is not falling. Critics' attempts to paint the Clean Air Act as unsuited to greenhouse gases is a gross distortion of the Act's history of success and a cynical attempt to delay meaningful action on climate change. California readily agrees that the Clean Air Act is not sufficient in itself to be the only federal policy to control greenhouse gases – we desperately need Congressional action to set firm and ambitious economy-wide cap on emissions. But in the meantime, the Clean Air Act offers powerful, common-sense, and cost-effective tools that we can begin applying right away to begin to bring the problem under control. And in the long-term, we believe Congress will find that sensible regulatory programs under the Clean Air Act will complement an economy-wide climate policy, making the combined effort more effective and efficient.

The Chairman. Thank you, as usual, for getting right to the point. We appreciate it, Chairman Nichols. Jason Burnett, former Associate Deputy Administrator, U.S. EPA. Welcome, Jason.

STATEMENT OF JASON BURNETT, FORMER ASSOCIATE DEPUTY ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. BURNETT. Thank you. Madame Chairman, Senator Inhofe, Senator Whitehouse, thank you for the opportunity to testify about climate policy. The April 2d, 2007, Massachusetts versus EPA Supreme Court decision found that the Clean Air Act applies to greenhouse gases, and, therefore, shifted the debate from whether we address climate change to how we address climate change.

Either the EPA will, using the Clean Air Act, or Congress will by developing a new, better law. To help understand options for climate regulation, I will identify three principles that I hope most can agree should be part of any sensible climate policy.

First, act now. Common sense suggests that we act now to begin a smooth transition to a low carbon economy, rather than waiting longer and requiring a faster, more disruptive transition. If the U.S. does not act now, we risk becoming the importer, not the exporter, of the next generation of energy technologies.

Second, be careful. Climate policy should expect and promote technological change but needs to be careful, because we do not know when or how new technology breakthroughs will occur. Climate policy should also recognize that any action we take alone will not be enough to avoid the risk of catastrophic climate change. We need to carefully design a system that will work so well, that other countries will want to mimic our success.

And third, consider economics. Much discussion has focused on the cost of action, but inaction has its own costs. Inaction will lead to more resources spent adapting, and increased likelihood that large parts of our society will face serious harm if unable to adapt, and unavoidable damage to our natural systems and infrastructure.

Inaction will also lead to increased security risks for regions of the globe that do—that do not have the infrastructure or institutions to adapt quickly enough. My testimony today builds off of work done by a large team of scientists, lawyers, engineers, and economists at the EPA and across the Federal Government.

As Associate Deputy Administrator of EPA—former Associate Deputy Administrator of EPA, I had helped develop a plan for responding to the Supreme Court's decision. This plan basically consisted of one regulation that would have increased the fuel economy of our cars and trucks.

Another regulation that would have shifted our fuel supply away from a reliance on oil and toward more alternative and renewable fuels, and several regulations covering large stationary sources, such as power plants, oil refineries, and industrial boilers. These regulations would have been issued after a consideration of costs, benefits, energy implications, and technology, and would have included various market mechanisms, such as trading, to promote efficiency improvements in increased use of biomass, for example, farm waste, as an energy source.

By acting on this plan, we would ease the transition to a low-carbon economy. The plan also addressed the unique challenges of the Clean Air Act, such as making greenhouse gases fit better within the new Source Review program. These challenges stem from differences between greenhouse gases and most other types of air pollution.

The next Administration, after careful consideration of these challenges, can issue Clean Air Act regulations that will be a solid step forward. However, these regulations alone will not get us where we need to go. The structure of the Clean Air Act is such that greenhouse gas regulations will not be as cost effective as they could be under an entirely new law.

This will not be a major problem for the first few years because EPA can pursue inexpensive opportunities. Over time, however, EPA regulations will require greater investment and the unnecessary challenges of the Clean Air Act will become more apparent. This is why Congress must act.

Ideally, Congress will pass new economy-wide cap and trade legislation that uses auctions to reduce taxes and avoid giving windfall profits to industry. Regulations should be upstream at the point where carbon fuels enter the economy, not where greenhouse gases enter the atmosphere.

This law could seek aggressive reductions in emissions by depending more on new technologies, and could make sure this is a good, safe investment for our Nation by including a safety valve in case new technologies do not develop as quickly as predicted. In this way, new legislation can achieve more at lower risk, a result that's good for the environment and good for the economy. The next president should immediately work with Congress to pass such legislation. At the same time, EPA should re-engage——

The Chairman. We want to make sure we have enough time for questions.

Mr. BURNETT. Thank you.—re-engage on regulations under the Clean Air Act, with careful thought that Clean Air Act can become our Nation's first climate change law, as Congress debates the transition to a new, better law. Thank you, and I would be happy to answer any questions.

[The prepared statement of Mr. Burnett follows:]

Testimony of

Jason Burnett

Private Citizen

Former Associate Deputy Administrator,
Environmental Protection Agency

Before the

Committee on Environment and Public Works

U.S. Senate

Hearing:

"Regulation of Greenhouse Gases under the Clean Air Act"

September 23, 2008

Greenhouse Gas Regulation: Putting the Clean Air Act to Work

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Introduction

The April 2nd, 2007, *Massachusetts v. EPA* Supreme Court decision fundamentally, profoundly, and permanently changed the regulatory landscape by finding that the Clean Air Act applies to greenhouse gases. Since greenhouse gases clearly endanger the public, the law requires regulation of greenhouse gases from a wide variety of mobile and stationary sources. The Supreme Court decision has therefore shifted the debate from *whether* we regulate greenhouse gases to *how* we do so. Regulation is coming, either under the current Clean Air Act or under a new, better law.

I intend to offer a glimpse into what future Clean Air Act regulation may entail, including what some of the opportunities and challenges may be. Some of these challenges are fundamental to any system of greenhouse gas regulation, but other challenges are specific to the Clean Air Act and therefore unnecessary if Congress passes new legislation. I hope this testimony is helpful to Congress as it continues oversight of the response to the Supreme Court, but perhaps more importantly I hope it helps to establish the regulatory baseline against which Congress can evaluate new legislation. If Congress does not pass new legislation, the Clean Air Act will be the nation's climate change law, for better or worse.

In order to help understand the ramifications of regulation under the Clean Air Act, I will identify three principles that I hope most can agree should be part of any sensible climate policy. I will consider how various sections of the Clean Air Act would perform relative to these principles. I will then explore how targeted amendments to the Clean Air Act can greatly improve its application to greenhouse gases both for the environment and for the economy. Finally, I will explain how new legislation can perform better than the Clean Air Act.

Background and History

This testimony builds off of the work of the federal government since the time of the Supreme Court decision. As Associate Deputy Administrator at the Environmental Protection Agency (EPA) in charge of energy and climate policy for

the year following the Supreme Court decision, I oversaw and coordinated much of the effort to develop a plan for using the Clean Air Act to regulate greenhouse gases. The credit for the work goes to the large team of scientists, lawyers, engineers and economists at the EPA and across the government. The general approach that I will put forward represents the plan that had the support of many parts of the Administration and was presented to President Bush as the best way to move forward under existing law. It is my understanding that President Bush initially agreed with the plan but later reversed himself in favor of leaving the challenges to the next President. The White House asked the EPA to backtrack from its plan and instead to develop an Advanced Notice of Proposed Rulemaking that not only incorporated the plan we had developed but also a range of other options, even though most everyone agreed those other options were inferior. For example, the EPA plan was to focus on the largest sources of greenhouse gas emissions but the White House asked us to include the possibility of regulating much smaller sources. The White House's desire to have a focus on smaller sources did not come from any belief that regulating smaller sources would make good policy sense but rather from a desire to obscure the clear case for regulating the larger sources with a discussion of the complexity of the Clean Air Act. It was during this negotiation that I left my position at the EPA. In the end, the Advanced Notice of Proposed Rulemaking approach allowed this Administration to avoid making any regulatory decisions.

Assuming the next President puts the responsibility for governing above the desire to develop and maintain an anti-regulatory legacy, we likely will see a system similar to what the EPA had developed for President Bush's consideration. Even if the next President chooses not to move forward voluntarily, it is likely that court cases will force action. That is, unless Congress acts first.

Principles for Regulation

After the Supreme Court case last year, the EPA was faced with the question of how to regulate greenhouse gases. We asked three related questions: What is the best way to move forward with the Clean Air Act? What are the limitations of the Clean Air Act? What legislative changes could address these limitations? In order to

structure the consideration of various options for regulating greenhouse gases, the EPA was guided by a set of principles and "policy and economic considerations." I have taken a similar approach, building off of EPA's work, and include a similar set of principles that reflect my judgment of important characteristics of any greenhouse gas regulatory program. I will then evaluate how well various Clean Air Act options line up against these suggested principles.

Principle A: Act Now and Pick Up Momentum

Sensible climate policy requires we act now to begin a smooth transition to a low carbon economy rather than waiting longer and requiring a faster, more disruptive transition. By acting now we will deploy cost-effective, available technologies that just need a moderate market signal. We also need to ensure the research and development pipeline – from basic research and early-stage development all the way through to technologies almost ready for commercial deployment – is full. All of these stages in research and development will benefit from a credible, consistent expectation of a robust market for new technologies. Any new technologies invented or brought to market at scale can then be exported to other countries. If the U.S. does not act now, we risk becoming the importer, not the exporter, of the next generation technologies.

By beginning gradually and picking up momentum, climate policy will allow the market and our citizens to make small adjustments that, in aggregate, add up to big changes. Economists talk about the short-run as the time period when capital infrastructure is fixed and the long-run as a period when capital infrastructure is replaced. We need policies that address the short-run by preventing unnecessary disruptions and premature retirement of our infrastructure, and address the long-run by not encouraging antiquated infrastructure to remain beyond its useful life and not allowing new long-lived investments to lock in failure.

Principle B: Be Careful

Sensible climate policy that will likely last decades should not be overly confident or prescriptive. We can learn from previous environmental policies like

the acid rain program, but we need to be careful to also consider the differences. The acid rain program primarily deployed existing (scrubber) technology and used existing capital infrastructure (railroads) more efficiently. Climate policy should be partially designed to deploy existing technology and use existing capital infrastructure more efficiently but should also have an eye towards developing and deploying technologies that have not yet been invented. This difference means that a climate policy predicated only on the deployment of existing technologies would provide a smaller reduction in emissions than is desirable. Instead climate policy should expect and promote technological change but needs to recognize that we do not yet know how or when new technological breakthroughs will occur. The inherent uncertainty created by a reliance on new technologies means that a climate policy should have flexibilities that allow for larger emissions reductions if technology develops rapidly, and smaller emissions reductions if technology takes more time to develop.

Climate policy should also recognize that any conceivable level of emissions reduction of the U.S. acting alone will not be enough to avoid potentially catastrophic climate change. It makes no sense, therefore, to claim that any given level of emissions reduction is sufficient if more reductions can be achieved cost-effectively. The U.S. could eliminate its greenhouse gas emissions tomorrow and, if no other countries followed our lead, the world would still face an unacceptable risk of catastrophic climate change. Nevertheless, if the U.S. significantly reduces its emissions without harming our economy, other countries are more likely to follow our lead and we can collectively reduce the risk of climate change. Seen in this regard, the absolute quantity of emissions reductions is secondary to developing an aggressive system that others will want to mimic.

Even those who believe we should reduce emissions at all costs must recognize the political reality of the situation. Perhaps the worst outcome for sensible long-run climate policy is for the first serious national effort to be seen, correctly or incorrectly, as being overly costly or burdensome. The political backlash of such a scenario could set back climate policy for decades. This scenario is more

likely for the Clean Air Act than new legislation because of some of the unnecessary regulatory burden created by the structure of the Clean Air Act.

Principle C: Consider Economics

Sensible climate policy should consider the economics of action and inaction. Climate policy will affect our economy just as economic policy will affect our climate. Economic decisions should therefore be made with consideration of their climatic implications and climate policy decisions should be made with consideration of their economic implications.

Much of the discussion about the costs of climate policy has focused on the costs of taking action but inaction has its own costs. Inaction will lead to more resources spent to adapt to a changing climate, an increased likelihood that large parts of our society will not be able to adapt sufficiently to avoid serious harm, and unavoidable damage to our natural systems. Inaction will also lead to increased security risks for regions of the globe that do not have the infrastructure or institutions to adapt quickly. A sensible climate policy will balance the costs of action with the costs of inaction; focusing on one side of the equation will create a distorted response. Action will save us money by availing ourselves of less expensive opportunities; continued inaction will only increase the costs of emissions mitigation or, if we do not mitigate, of the costs to our society and the globe of inaction.

A balancing of the costs of action with the costs of inaction will require putting a positive price on carbon dioxide and other greenhouse gases, either explicitly and transparently or implicitly and opaquely. Since carbon is embedded in each and every product and service, a price on carbon dioxide will change our economy in fundamental ways.

Characteristics of Greenhouse Gases

Several ways that greenhouse gases differ from other types of air pollution regulated by the EPA explain some of the challenges of using the Clean Air Act to regulate greenhouse gases. Our nation's air pollution program has been one of the

most successful public health government interventions in recent memory. In the past several decades the most dangerous types of air pollution such as lead and fine particles have declined across most of the U.S., allowing Americans to live longer and healthier lives. Reducing air pollution has generally been a very good investment, often producing five to ten dollars in public health benefits for every dollar spent reducing air pollution.

The Clean Air Act has not been used specifically to reduce greenhouse gases and it will take a lot of work for greenhouse gas policy under the Clean Air Act to be nearly as successful as the policies to reduce other forms of air pollution. This is due to several differences between greenhouse gases and the other types of air pollution that the EPA already regulates.

- First, greenhouse gases are inherently long-lived in the atmosphere and therefore global in nature. Protections against pollution hotspots required by the Clean Air Act are unnecessary for greenhouse gases. This unnecessary regulation will lead to increased costs with little to no benefit. The Clean Air Act works for other pollutants in part because those communities who bear the costs usually also reap the benefits. However, the geographical and temporal connection between costs and benefits for greenhouse gases is not as straightforward; actions today in one community will benefit not only current and future generations of Americans but will also benefit other countries.
- Second, greenhouse gases are emitted in much higher volumes than other air pollutants. Small sources of other air pollutants such as large-scale retail stores and apartment buildings may emit enough greenhouse gases to now be classified as large sources. This will increase the number of sources subject to various permitting requirements.
- Third, the methods for reducing greenhouse gas emissions will be significantly different than the methods for reducing other air pollutants. Most other air pollutants can be controlled by devices attached to the

smokestack or tailpipe that work by removing the pollutants from the exhaust stream. These post-combustion controls do not yet work at a commercial scale for carbon dioxide, the most significant greenhouse gas. Instead, at least for the next decade or two, reductions in carbon dioxide emissions will largely depend on changing how we generate and use energy. Only later can we begin to expect post-combustion control technologies to be capable of removing carbon dioxide from the exhaust stream. The Clean Air Act was designed primarily to place regulations at the point of combustion to force post-combustion controls. Since much of the near-term greenhouse gas emissions reductions will not occur through post-combustion controls, the EPA should consider opportunities where the Clean Air Act permits regulation at other stages in the production and use of energy.

- Fourth, the Clean Air Act is designed as an environmental and human health law with somewhat limited attention to the country's financial and economic systems. Such an approach has worked for traditional pollutants because add-on controls have generally been available and affordable to the polluting industries, enabling significant reductions in air pollution without resulting in large-scale economic adjustments. Reductions in greenhouse gases will more fundamentally alter the organization of our economy and the design of our communities. We should work to find ways to align environmental and economic objectives when possible, and to balance the dual objectives when tradeoffs are necessary.

These four differences between greenhouse gases and other air pollutants explain the particular challenges of using the Clean Air Act for greenhouse gases, even though it has worked very well for other air pollutants.

The Clean Air Act: Basic Structure

Sections of the Clean Air Act can be divided into three categories; those designed to regulate mobile sources, those designed to regulate stationary sources, and those designed to regulate both. The interconnections between the stationary

source sections and the mobile source sections come in three forms. First, certain terms such as "air pollutant" need to be defined consistently across programs. This means that if the EPA decides, for purposes of mobile source regulation, to define all greenhouse gases collectively as the "air pollutant" rather than taking each individual gas separately, then it should use the same approach for stationary sources. Second, some choices for how to regulate mobile sources would create additional layers of stationary source regulation above and beyond what is required by the stationary source section alone. For example, some mobile source regulations such as a low-carbon fuel standard and the existing Renewable Fuel Standard are primarily mechanisms to indirectly reduce stationary source emissions. Such interconnections will become even more important as plug-in hybrid vehicles and other similar technologies blur the line between emissions attributable to stationary sources and those attributable to mobile sources. Third, certain policy precedents will be created by the first few federal greenhouse gas regulations. These precedents can be changed over time but will set the general direction for subsequent regulation. For example, the EPA will need to determine what timeframe to consider for Clean Air Act regulations, how the stringency changes over time, and whether to regulate greenhouse gases as they enter the economy or as they enter the atmosphere.

The Clean Air Act: Mobile Sources

Mobile source greenhouse gas regulation is fairly straightforward and will be addressed first. Mobile source regulations typically take the form of performance standards, meaning that the EPA would stipulate what emissions are allowed for particular applications, allowing for some flexibilities through averaging, banking, and trading. Mobile source programs can be designed to encourage the deployment of existing technologies and to allow flexibility in providing adequate lead-time for the development and deployment of new technologies. The Clean Air Act requires regulation of some mobile source sectors; for example, Section 202 covering cars, trucks, and other on-road vehicles specifies that the Administrator "shall" issue regulations. Clean Air Act greenhouse gas regulations for cars and trucks could

mirror in almost all respects the fuel economy standards being issued by the Department of Transportation. One notable exception is that the EPA will eventually grant the California vehicle waiver and should therefore take that vehicle greenhouse gas program into account in designing a similar national program. Although the EPA could mimic the Department of Transportation, it does not need to do so; the Clean Air Act could be used to provide a longer planning horizon for manufacturers and more flexibility in compliance than allowed by Department of Transportation regulations.

The Clean Air Act allows for but does not require regulation of certain other mobile source sectors; for example, Section 211(c) covering fuels specifies that the Administrator "may" issue regulations. The EPA could pursue a low-carbon fuel standard similar to the program being developed in California and use such a standard to rectify some of the limitations of the recently enacted Renewable Fuel Standard. For example, the EPA could provide for additional incentives for next generation biofuels and provide market signals to move industry towards those biofuels that are particularly beneficial from the standpoint of reduced greenhouse gas emissions.

- How would mobile source regulations line up against the three principles I laid out above?

Principle A: Act Now and Pick Up Momentum

Mobile source regulation could be issued in short order. The EPA could act very quickly under a new Administration to review, modify, and issue the regulations based on the work the EPA did last year. The existing draft regulations simply rely on an orderly deployment of existing technologies over the next decade. This approach could realistically be done within 18 months of a new Administration taking office.

Using the work that the EPA did last year, however, does not adequately capture the potential of new technology because our work did not account for the fact that manufactures certainly can and likely will comply by developing new

technologies. This limitation came directly from the computer model currently being used by the Department of Transportation and the EPA to develop the stringency of the regulations. By not accounting for technological change, the model only accounts for the reductions that can achieved in the early years by applying existing technologies, but largely ignores the additional reductions that will be possible in later years as new technologies are developed. The model therefore incorrectly estimates that the only significant improvements in fuel economy will be achieved in the first few years of a program followed by a long period of no additional progress. The Clean Air Act does not require the use of this model: The EPA should improve the model or use a different one. A more sophisticated model would consider the likelihood of new technologies, especially over a longer time period. Such an approach would have a similar phase-in for existing technologies and could require far greater improvements in fuel economy and reductions in greenhouse gases the long-run after allowing for the development of new technologies. The expectation of a robust market for new technologies to meet the more aggressive standards would cause more companies to invest in research and development.

Principle B: Be careful

Regulatory systems typically have three ways of dealing with unforeseen events. Well-designed systems can have sufficient flexibility to weather a storm without active involvement by the regulators. If that doesn't work, some systems allow for temporary interventions by the regulator. And if that doesn't work, systems break and need to be rebuilt or replaced. Clean Air Act mobile source programs have typically fallen into the second category by relying on waivers to address short-term unexpected events. While this system works after a fashion, it creates market uncertainty, encourages political rent-seeking, and allows for the EPA to meddle in the market by adjusting the stringency of a regulation on an ad hoc basis.

For greenhouse gases, any mobile source program should be able to provide sufficient temporal flexibility to obviate or reduce the need to rely on waivers for

short-term unexpected events just as the acid rain program has not typically relied on waivers. Instead it will be the long-run unexpected events that will require careful attention. For example, predicting the rate of technological change is inherently an uncertain business because it involves guessing when someone will have some clever idea about how to do things better. The EPA has tried to predict the rate of technological change by assuming that the future rate of change will reflect the past rate of change, with some adjustments. The EPA has also done engineering calculations to estimate when there has been enough time and money spent on a new technology to bring it to market. Neither approach is very accurate.

The challenge for the EPA will be to design a system with enough long-run flexibilities so that the system works well even though the forecasts for technological change later will be found to be less than perfect. Ideally this will be done without active involvement of the regulators after regulations have been developed and the initial market has been created. The simplest mechanism for accomplishing this is to allow the level of reductions required by the system to self-adjust with the actual development and performance of technologies. This is most easily done by relying on the market signals themselves: if the cost of reducing emissions gets high the market is signaling that technologies are not being developed as planned, and if the cost of reducing emissions gets low the market is signaling that more technologies than expected have been invented and are being deployed. More emissions reductions should be required when the cost of doing so is low, and fewer emissions reductions should be required when the cost is high. This system will create a more stable price and therefore more certain rewards to those developing new technologies. Reducing price volatility will make investing in new technologies less of a gamble and therefore more attractive to businesses. Such an automatic price adjustment mechanism may be possible under the Clean Air Act but it almost certainly will be subject to legal challenge.

Principle C: Consider Economics of Action and Inaction

The mobile source section allows for a consideration of a range of relevant factors such as costs and benefits in developing a regulatory program. The program

can and, in the case of greenhouse gases, should be designed to include various market flexibilities such as averaging, banking, and trading, at least within a sector and between sectors if possible.

The mobile source provisions of the Clean Air Act will work fairly well with no legislative change, although the EPA would benefit from rethinking how it uses the Clean Air Act mobile source authority given the unique challenges posed by greenhouse gas regulation. While I was at the EPA we were not permitted to do so because the EPA's target was predetermined by President Bush. The next President should not put the EPA in this regulatory straightjacket if he wants to achieve larger reductions in greenhouse gases and greater reductions in gasoline consumption at the lowest cost.

The Clean Air Act: Stationary Sources

Relative to mobile sources, stationary source regulation under the Clean Air Act is much more complicated and will take more creative thinking to work well. This added complexity comes from two differences between stationary sources and mobile sources. First, the EPA's mobile source authority applies primarily to new sources while its stationary source authority extends to both new and existing sources. Second, several of the features of the stationary source program are designed to address pollution hotspots, a concern that does not apply to a pollutant like greenhouse gases, yet the unnecessary hotspot protections will make greenhouse gas regulation more expensive.

The EPA has identified three basic options for regulating greenhouse gases from stationary sources under the Clean Air Act:

> **NAAQS Option:** The EPA could list greenhouse gases as a criteria pollutant, leading to National Ambient Air Quality Standards (NAAQS), attainment designations, state implementation plans, and transportation conformity.
>
> **Hazardous Air Pollutant Option:** The EPA could list greenhouse gases as a Hazardous Air Pollutant, leading to maximum achievable control technology standards and periodic risk reviews.

Section 111 Option: The EPA could find that greenhouse gases are not appropriately listed as either criteria or hazardous air pollutants and instead issue regulations under Section 111.

The NAAQS Option and the Section 111 Option would also need to be combined with the new source review program for greenhouse gases. Other sections of the Clean Air Act can be used in addition to choosing one of the three options above but for sake of simplicity I will focus on these three options and will then explain why the Section 111 option is preferable.

NAAQS for Greenhouse Gases

The NAAQS option would not work very well. The NAAQS system would take years to get up and running but then would set unrealistic deadlines. This "act later and start aggressively" approach is the opposite of the "act now and pick up momentum" principle. The NAAQS sets and locks the U.S. into a goal that can only possibly be met with international cooperation. This would likely be done before we know what level of cooperation we will have from other countries, failing the principle about being careful and not being overly confident. Setting of the NAAQS must be done without consideration of technology, costs or feasibility and so would fail the "economics" principle.

Given all of these downsides, it should not be a surprise that very few individuals or groups support a NAAQS for greenhouse gases. In fact, the only people who have expressed an interest in this option are those who place enormous value in the fact that the NAAQS system would take a long time to establish and therefore would delay action for some number of years and who have great confidence in Congress coming to the rescue before the greenhouse gas NAAQS becomes effective.

Greenhouse Gases as Hazardous Air Pollutants

The Hazardous Air Pollutant option scores a little better when measured against the three principles of sensible climate policy. Greenhouse gases could be listed as a Hazardous Air Pollutant fairly quickly and the standards required by the

program would likely work to deploy *existing* technologies since they are generally based on the best performing *existing* units. However the program would not do a very good job of creating ongoing incentives for the development of new technologies since facilities would not be rewarded for exceeding what existing technology already achieves.

The Hazardous Air Pollutant option, rather than beginning gradually and picking up momentum, would start all at once and then would not be adjusted for another eight years. This risks retiring capital prematurely by requiring all facilities to come up to the same level of greenhouse gas performance simultaneously without regard for individual circumstances. However, the facilities that do make the necessary upgrades would only have incentives to plan for periodic rounds of improvements rather than to remain flexible and continually improve over time. The Hazardous Air Pollutant program can be thought of as a technology stair-step, alternating between periods of rapid change and periods of no change; it would be far preferable to design a ramp or glide path to provide incentives for continuous improvement. By alternating between requiring large improvements and requiring no improvements, the Hazardous Air Pollutant system would waste resources by making some facilities obsolete immediately and causing others to make drastic changes in operations rather than making these same changes in a more organized way over time.

The first phase in the Hazardous Air Pollutant standard setting process is to set the Maximum Available Control Technology for larger emitters. Despite its name, such "technology" standards actually do not allow for consideration of technical feasibility or costs except in certain circumstances. The standards would almost certainly apply at the facility or unit level and not allow flexibilities and associated cost-savings afforded by averaging regulatory burden across facilities. The standards would likely vary substantially between industries based largely on current emission performance rather than future prospects for cost-effective emissions reductions. Finally, standards under this section of the Clean Air Act would apply to exceedingly small facilities. While there is no doubt that small and

large emitters alike can and should reduce their emissions, inflexible facility-by-facility standards would be even more costly if applied to small sources of emissions. For these reasons, the Hazardous Air Pollutant option fails the economics principle.

Some have advocated the Hazardous Air Pollutant option because it would preclude the application of new source review (NSR) to greenhouse gases. This may reduce the regulatory complexity and provide more certainty for large industrial sources because the Hazardous Air Pollutant program generally is only updated every eight years while the new source review program can potentially provide an ongoing set of regulatory requirements for relatively minor changes in operations. While larger sources may prefer the Hazardous Air Pollutant option to the new source review option, smaller sources likely would not because the Hazardous Air Pollutant option applies to sources one-tenth the size as would be subject to new source review.

Section 111 Regulation for Greenhouse Gases

The final option for stationary sources is to reject both a NAAQS and a Hazardous Air Pollutant listing for greenhouse gases and channel regulation into Section 111, the New Source Performance Standard. Despite "new source" being in its name, the Section 111 applies to both new sources and existing sources through a combination of EPA and state regulations. The primary advantage of Section 111 is its flexibility, allowing for a wide range of regulatory systems. Unlike the stair-step of the Hazardous Air Pollutant program, the program under Section 111 could create a phased glide path, creating ongoing incentives for technological improvements.

In order to design a program under Section 111, a set of initial questions would need to be answered:

- How would sources be categorized? Broad categories might include, for example, all combustion sources over a certain size. Since it is easier to allow for trading within a category, broad categories would

be more flexible and therefore probably most cost-effective. On the other hand, narrow categories would allow for a more targeted and tailored approach to accommodate particular circumstances.

- What types of sources should be included? Should the focus be only on the largest sources such as power plants, industrial boilers, cement kilns, and petroleum refineries or should the EPA set standards for smaller sources? The EPA has historically used a range of factors to determine what sources should be regulated under Section 111 for particular types of air pollution. The EPA could exercise similar discretion for greenhouse gases.
- How much emphasis should be placed on the new sources versus the existing sources? It is possible to create a program under Section 111 that places most of the emphasis on new sources being built cleaner and designed to be more efficient but doing so can retard the natural turnover of capital stock by increasing the cost of a new facility relative to continued operations of an existing facility. Alternatively, a Section 111 program can set a relatively modest new source standard and use the existing source standard to drive the emissions reductions.
- Finally, the existing source standards are developed jointly by EPA and state regulators. How much guidance would the EPA want to provide to states? The Clean Air Act does not allow the EPA to restrict states from designing their own systems but the EPA could attempt to design a system that many states would want to adopt outright. Alternatively, the EPA could leave much of that design to individual states working alone or in groups like the Regional Greenhouse Gas Initiative and Western Climate Initiative.

The flexibility of Section 111 allows a suitably designed system to align more favorably with the unique characteristics of greenhouse gases. Although Congress

did not specifically design the Clean Air Act for greenhouse gases, the EPA can use the Clean Air Act to design a Section 111 program to work fairly well.

Principle A: Act Now and Pick Up Momentum: Section 111 can be used immediately – likely within the first year or two of a new Administration – to issue regulations applicable to most of the stationary source emissions. During the policy debate in the fall of 2007, the EPA had developed a plan to draft and finalize regulations under Section 111 covering the largest sources and well over half of U.S. stationary source emissions by the end of 2008. This plan would have required moderate improvements in the greenhouse gas profile of four of the largest stationary source sectors. Because the improvements were modest and largely would be in the form of efficiency improvements which have the additional benefit of reducing fuel costs, the economic impact of the program would have been minimal. However, since the sectors were the largest in the country, even small improvements would have translated into large reductions in greenhouse gas emissions. While the White House did not allow EPA Administrator Johnson to move forward with this plan, it does demonstrate how quickly a new Administration could act.

Section 111 could be used to regulate over half of the stationary source emissions, but it would not be well-suited for comprehensive coverage because the number and diversity of sources emitting greenhouse gases is too large. The European Union Emissions Trading Scheme has encountered a similar problem of creating reasonably complete coverage of greenhouse gas emissions; the European Union Emissions Trading Scheme has more limited coverage because that system generally applies where greenhouse gases enter the atmosphere rather than where they enter the economy. The EPA might consider whether Section 111 can be used to regulate upstream from the emissions source (the smoke stack) and nearer to the entry point in the economy (the coal mine, gas head, or oil well). If it cannot, then using Section 111 as a bridge to new legislation could force that legislation to regulate downstream, therefore making the legislation less efficient and more complex than necessary.

Although Section 111 provides flexibility, it also comes with legal risk. The Department of Justice and the EPA have taken the view that Section 111 allows for a variety of mechanisms for reducing emissions – including cap-and-trade – but this particular legal position has not yet been the subject of a court ruling. The next Administration could move forward with a strategy under Section 111 but may find it difficult to provide the certainty, especially over the long run that the market needs to invest in developing and deploying new technologies. Even if courts agree with the EPA that Section 111 can be flexible, the EPA will likely find it difficult to provide the necessary long-term market signal because of the realistic expectation that either the regulations would be modified by subsequent Administrations or that Congress would eliminate or modify the program when it passes a new law.

Principle B: Be Careful: The traditional way in which the EPA has issued regulations under Section 111 has required the EPA to estimate when particular technologies will be commercially available and when they can be deployed at scale. As described above, such estimates are highly uncertain, leading to two possible errors. The first error is the problem that the European Union Emissions Trading Scheme and the Regional Greenhouse Gas Initiative faced: regulators are cautious about the quantity of emissions reductions to require and require less than the market could actually produce. This is also the same error that Congress made in developing the acid rain program. Initial estimates were that reducing sulfur dioxide would cost about $750 to $1000 per ton, a price that Congress thought the nation should be willing to pay. The actual price is currently less than $150 per ton. The federal government now estimates that the benefit of reducing a ton of sulfur dioxide is ten to a hundred times higher than the current cost of doing so. In other words, the acid rain program erred by not allowing for the possibility that emissions reductions would be less expensive and further reductions would have been affordable. This error harms the environment and human health by reducing emissions too slowly.

The second error is less common: Regulators overestimate what is possible and require more than the market can produce at reasonable cost. Many observers fear this has happened with the current Renewable Fuels Standard.

Both of these errors are inherent in a system that specifies a level of emissions reduction based on *projected* cost and technology without making adjustments depending on *actual* cost and technology. Environmental groups often argue that actual costs will be lower than the EPA projects so they should welcome a move towards using actual costs. Similarly industry groups often argue that actual costs will be higher so they too should favor a move towards using actual costs. Unfortunately the EPA may find it difficult to develop the legal theories to support regulations under Section 111 that self-adjust according to actual cost and technology.

Another adjustment that should be considered for greenhouse gases is that of increasing the stringency of the program as our major international trading partners take action. One of the concerns with taking aggressive action today before many of our trading partners do so is the risk of putting certain U.S. industries at a competitive disadvantage. If U.S. firms face the added costs of reducing greenhouse gases before their competitors abroad do, some firms may move some operations overseas. This phenomenon, called emissions leakage, is likely much smaller than most fear but it does increase if there is a large disparity between U.S. climate policies and the policies of our major trading partners. The U.S. could take moderate action without causing concern about emissions leakage and only take additional action when other countries also take action. By keeping the disparity between climate regimes at a low level, this system of acting now but adjusting our actions based on the actions of others avoids a significant leakage concern. This type of mechanism helps to address competitiveness concerns and rewards other countries for taking action. It is far from clear whether the EPA can consider such factors or develop such a system using Section 111.

Principle C: Consider economics of action and inaction: Regulations under Section 111 could be reasonably efficient within a sector by allowing trading,

but would not likely be efficient between sectors unless the EPA developed a novel legal approach to allow for trading across sectors. The efficiency of regulations under Section 111 would also depend on how states handled their role in the regulation of existing sources. For example, if the EPA developed a model-trading rule for states to consider, as it has done in the past, states could choose to auction or give away the rights to emit. Fortunately more and more states appear to now recognize the wisdom of such auctions; auctions avoid granting windfall profits to industry and help states raise money to reduce taxes or for other budget priorities. The EPA itself may have difficulty designing and implementing an auction because Congress has not authorized it to raise money in this circumstance. Since the EPA likely cannot get involved in state-run auctions, the EPA may be forced to allow states the option of giving windfall profits to industry.

New Source Review for Greenhouse Gases

Unless greenhouse gases are listed as a hazardous air pollutants, the EPA will need to develop a New Source Review program for greenhouse gases immediately so that the program can be operational by the time greenhouse gases become regulated pollutants. The Prevention of Significant Deterioration part of the New Source Review program will apply and require the application of what is called Best Available Control Technology for all new or modified sources over fixed size thresholds. Two basic problems could arise from this program. First, the maximum size thresholds for Prevention of Significant Deterioration program are the same regardless of whether the air pollutant is emitted in low volumes like fine particles and sulfur dioxide or high volumes like carbon dioxide. This means that many sources previously designated as small because they emitted a low volume of non-greenhouse gas air pollutants will now be classified as large due to their carbon dioxide emissions. This will increase the number of Prevention of Significant Deterioration permits required. In the recent Advanced Notice of Proposed Rulemaking the EPA has outlined several options for keeping this increase to a minimum at least in the next few years and for streamlining any additional permits that are required.

The second challenge with the Prevention of Significant Deterioration program is that it attempts to differentiate between existing sources and newly modified sources by looking at changes that increase emissions. Companies generally try to avoid making modifications that would be major enough to trigger the Prevention of Significant Deterioration program, while the EPA should be on the lookout for companies that have crossed the line. How and where this line is drawn has been the subject of multiple lawsuits in recent years. Counterintuitively and counterproductively, companies' efforts to avoid making major modifications that would trigger the Prevention of Significant Deterioration program has caused some very old industrial facilities and power plants to remain operational without undergoing regular upgrades. Adding carbon dioxide to the mix will only exacerbate an already bad situation. The EPA had been working on New Source Review reforms designed to reduce the scope of the program, but most of the reforms have been invalidated.

The Clean Air Act: Possible Amendments

Amending the Clean Air Act has never been easy given the complexity of the law and the issues and interests at stake. However there are two amendments that may be able to garner widespread support and could be done in a way that would not open up the Clean Air Act to amendments directed at other pollutants. For a Clean Air Act amendment to get enough support, industry needs to come to understand that the Clean Air Act inevitably will be used to regulate greenhouse gases. It does no good to continue denying this reality or to suggest that Congress would consider a whole-scale preemption of the Clean Air Act without replacing it with new legislation. Environmental groups need to recognize that long-term damage can be done to the public's appetite for climate change policy with only a few well-publicized examples of burdensome or unnecessarily costly regulations. The current Clean Air Act risks providing such an example if the following two amendments are not made.

Increase Thresholds for greenhouse gases

The first amendment would be to increase the Prevention of Significant Deterioration thresholds for greenhouse gases but not for other air pollutants. A reasonable starting point to determine a suitable increase would be to look at how other governments have defined large sources of greenhouse gases. Another approach would be to look at the greenhouse gas emissions of sources that meet the current thresholds for other air pollutants. This would likely lead to greenhouse gas thresholds being increased one-hundred fold although any increase from the current low levels would help the program function better.

Clarify that Greenhouse Gases Are Not Criteria Pollutants

Most observers recognize that a NAAQS for greenhouse gases would not work well. Assuming the next Administration agrees, the EPA can develop legal arguments for why it should not be forced to list greenhouse gases as criteria pollutants under the NAAQS program even if petitioned to do so. However these arguments would be subject to challenge, similar to a legal challenge involving air-borne lead that the EPA lost in the 1970s. Since there is no guarantee that the EPA would prevail in declining to list greenhouse gases at criteria pollutants, Congress could simply clarify that greenhouse gases are not to be listed.

The Clean Air Act: Summary

We are fortunate that the EPA can design a regulatory system that will function for greenhouse gases since the Clean Air Act will be used unless Congress acts first. EPA regulations, properly constructed, can be a solid step forward but they alone will not get us where we need to go. The structure of the Clean Air Act is such that greenhouse gas regulations will not be nearly as cost-effective as they could be under new legislation. This will not be a major problem for the first few years of the program because the EPA can pursue greenhouse gas reductions that are inherently very inexpensive or even free. If the use of the Clean Air Act conveys a price premium, realizing these inexpensive reductions will still be well-worth the cost. Any cheap or free greenhouse gas reductions achieved today will offset more expensive reductions in the future for the same cumulative reduction in emissions.

Using the Clean Air Act meets the first principle of acting now and benefiting from our ability to reduce emissions very cost effectively while also setting the market expectation for greater reductions later.

As EPA begins pursuing greenhouse gas reductions that require greater investment, the problems of the Clean Air Act will become more apparent. The EPA must be careful to avoid being overly prescriptive in its regulations, especially as the EPA increasingly relies on technologies that have not yet been commercially deployed or even developed. Clean Air Act regulations should not, and likely will not, rely solely on existing technologies but will also rely on new technologies coming to market. The EPA will need to balance having strong, credible regulations to create the expectation for a future market with the need to remain flexible if certain technologies do not become available in the timeframe originally predicted. The traditional approach to regulations focuses too much on achieving a specified quantity of emissions reductions and will therefore either be too modest or too aggressive. The EPA will likely err in the side of being too modest because the market will likely invent ways of reducing emissions that regulators can not foresee. The Clean Air Act will therefore produce fewer reductions in emissions than would be possible. This error can be addressed with a system of automatically updating the emissions reductions targets based on actual prices and technology development. In the simplest form, this would entail a very aggressive target coupled with a safety valve. Unfortunately it is not clear to what degree the EPA has authority to include such mechanisms in Clean Air Act regulations.

The U.S. currently places no national value on greenhouse gas reductions in most sectors and in almost all regulatory decisions. While we do not know with any precision the value to the globe or even to the U.S. of reducing greenhouse gases, we are virtually certain that it is worth a lot more than the zero dollar price we currently assign. Therefore, the cost of inaction is clearly greater than the cost of action; we are almost certainly doing too little. Moving forward with regulation under the Clean Air Act will reduce this error for many sectors but will likely introduce other deviations from optimal policy. The most obvious way of using the

Clean Air Act is to issue sector-by-sector regulations. Unless the EPA can provide trading or other ways of equilibrating the stringency across sectors, the resulting incentives will likely be greater for some sectors than others.

New Climate Legislation

New climate legislation can be better for the environment and for the economy that the Clean Air Act. This does not mean that the Clean Air Act should not be used; it should and it must be used until Congress acts. When Congress does pass new legislation, it needs, at a minimum, to amend the Clean Air Act in the ways described. More wholesale amendments are likely justified depending on the form of the comprehensive climate legislation. For example, the New Source Performance Standards may become a regulatory backstop and possibly superfluous if new legislation provides a reasonably aggressive national price signal for reducing greenhouse gases. Alternatively, New Source Performance Standards could be used more directly to create incentives for the developers and early adopters of new technologies. It may also be appropriate for Congress to leave in place parts of the mobile source program for similar reasons.

New legislation can achieve goals that will be difficult to provide under the Clean Air Act. New legislation can provide certainty over a much longer timeframe and therefore provide the market signals for technology development. It can also be more responsibly aggressive about promoting and relying on new technology because it can provide safeguards in case technology does not develop as rapidly as predicted. Such a system will create a useful political dynamic of aligning the interests of industry and environmental groups. Both will have an interest in promoting new technology: for industry, because doing so will reduce costs; and for environmental groups, because doing so will generate greater emissions reductions. A simple cap on emissions does not align these interests and is a recipe for ongoing battles over new technologies. New legislation can provide a more uniform price signal with less risk of creating the perception or reality of unnecessary regulatory burden. Legislation can be simpler because it can be economy-wide or at least cover multiple sectors with the same program. It can also be simpler by moving upstream

from the point where the greenhouse gases enter the atmosphere to the point where they enter the economy.

Conclusion

The next President should immediately work with Congress to pass new climate change legislation. At the same time he should authorize the EPA to reengage on regulations under the Clean Air Act. With careful thought, greenhouse gas regulations under Clean Air Act can be made to work. These regulations, properly designed, can build a bridge to new legislation.

Questions from Senator Barbara Boxer:

Question: Is it true that many of the options for regulating small sources that are set forth in the Advanced Notice of Proposed Rulemaking (ANPR) signed on July 11, 2008 (published in the Federal Register on July 30, 2008) are provisions that EPA did not intend to pursue when it completed its initial draft regulations in December 2007?

Answer: The EPA worked throughout the summer and fall of 2007 to develop a plan for regulating greenhouse gases under the Clean Air Act. We had already planned on moving forward with regulations under section 202 and 211(c) of the Clean Air Act to begin reducing greenhouse gases and improving energy security from the transportation sector. The question remained how best to regulate greenhouse gases from stationary sources. We eliminated both the hazardous air pollutant program (section 112) and the National Ambient Air Quality Standard (NAAQS) program (section 108 and 109) from consideration because these programs do not provide the flexibility in regulatory design that will be useful for regulation of greenhouse gases. We therefore developed a plan for channeling regulation into section 111 and away from the hazardous air pollutant and NAAQS programs. This was to be accomplished by issuing regulations under section 111 covering several of the largest sectors and then using those regulations to help justify not moving forward with the other sections. This plan was presented to all of the relevant cabinet-level officials and, in all of the meetings that I attended, was accepted as the most sensible path forward. I was not in the meeting when this plan was presented to President Bush, but I understand that he also agreed with the plan and offered to issue an executive order directing the EPA to proceed. We began drafting this executive order but this, like all work responding to the Supreme Court, was put on hold after the passage of the Energy Independence and Security Act of 2007. In January of 2008 we again tried to move forward, now with a pared-back version of the original plan, but were told by the White House that we were not permitted to do so. Instead we were told to develop the ANPR to include a range of options, rather than the options that we thought were most sensible. Following the White House's request, the EPA developed the ANPR to include the NAAQS and hazardous air pollutant program and to include a variety of smaller mobile sources that we had not previously considered for regulation.

Question: What are some of the options in the ANPR that in your view EPA would have not have intended to pursue?

Answer: As described above, in 2007 the EPA intended to pursue regulations of cars, trucks, transportation fuels, several regulations of the very largest sources under section 111, and a regulation to address the Prevention of Significant Deterioration (PSD) program. In early 2008 this plan was

scaled back somewhat due to limited time remaining for the Bush Administration but still included cars, trucks, transportation fuels and the PSD program.

The ANPR included a much wider range of mobile and stationary sources than the EPA had planned on regulating including smaller mobile sources and smaller stationary sources. For example, the ANPR included the possibility of regulation of a variety of non-road, small mobile sources. The ANPR also included approaches to regulation that the EPA had not planned on pursuing. For example, the EPA had planned on channeling regulation to section 111 and away from the hazardous air pollutant and NAAQS programs while the ANPR included the possibility of regulation under those programs.

Question: Why do you believe EPA included in the ANPR options that it did not actually intend to pursue?

Answer: The EPA had not only developed a response to the Supreme Court in the form of a provisional endangerment finding but had also agreed on the best path forward for regulation under the Clean Air Act. A response, however, would have led to an increase in regulation, something that the White House feared would tarnish President Bush's anti-regulatory legacy. At the same time, the EPA was facing the prospect of being put on a court schedule for making an endangerment finding. The White House's solution was to require the EPA to issue an ANPR that avoided revealing that the EPA had developed a path forward but rather highlighted the complexities and interconnections of regulation under the Clean Air Act. To this end, we were told that the ANPR should include a discussion of as many different sections of the Clean Air Act as possible without identifying any particular sections as superior. We were told to avoid finding solutions and even avoid using positive words, such as describing the ANPR as a "framework" for regulation or a "foundation" for future work. If the EPA outlined the path forward that we had developed, then the immediate question from the public and the courts would be why the EPA did not follow that path. By including other options to obscure the work the EPA had done, the White House could then say that the Clean Air Act is too complicated. Since the publication of the ANPR, the argument that the Clean Air Act is too complicated has been repeated by anti-regulatory groups who incorrectly suggest that the EPA seeks to regulate many small sources. In fact, this is nothing more than an echo chamber; the anti-regulatory groups had lobbied the White House for an ANPR that overstated the complexities and then used that ANPR to make the case that the Clean Air Act is too complicated.

Question: Do you believe that regulations under the Clean Air Act can complement policies that would be enacted as part of future comprehensive climate legislation, and if so, how would they work together?

Answer: The EPA can move forward with regulations under the Clean Air Act in a way that either will be largely subsumed by future comprehensive climate legislation or will be largely a compliment to such legislation. The choice between these two paths depends in part on when Congress passes new legislation and how much of the work under the Clean Air Act will be codified in the new legislation and how much will be preempted. The EPA could take an upstream economy-wide, cap-and-trade program as the goal of the Clean Air Act approach and develop regulations, likely under section 111 and title 2, that approximate this as much as possible. Congress could then develop legislation that in essence writes these regulations into new law while rectifying some of the key limitations of the Clean Air Act. In this way, the Clean Air Act would be seen as an interim measure while Congress works to pass new legislation. The Clean Air Act greenhouse gas regulations would then be subsumed or preempted.

Alternatively the EPA could move forward with regulations under the Clean Air Act that do not attempt to approximate future comprehensive climate cap-and-trade legislation. Under this scenario, EPA regulations would be designed to compliment economy-wide cap-and-trade legislation that Congress could enact. Congress could leave in place many of the EPA regulations, while a much smaller number would be subsumed or preempted by new legislation. One way to design Clean Air Act regulations that compliment rather than overlap with future cap-and-trade legislation is to consider the two separate market failures that need to be addressed in a sensible climate policy. The first is the direct market failure of the greenhouse gas emissions causing harm. This market externality can be addressed by putting a price on carbon dioxide and other greenhouse gas emissions either through a cap-and-trade system or tax reform. The second market failure comes from the spill-over effects from technological innovation. A price on carbon dioxide will spur some technological innovation but companies will still face a "second-mover" advantage; most companies will delay trying out a new, potentially risky technology until their competitors try it first so they can learn form their competitors' experience. Since all companies find themselves in this situation, new technologies that are needed to significantly reduce greenhouse gases will not be brought to market as quickly as they should be even with a cap-and-trade system. EPA regulations could fill this policy space, even after Congress passes a cap-and-trade system, by providing incentives for companies to be the first to try out new technologies or to encourage an entire industry to make a transition to new technologies. The Clean Air Act has been used to great success in the past to force or at least encourage new technologies.

Questions from Senator James M. Inhofe:

Question: Your analysis of Section 111 seems to rely on pushing the envelope of flexibility under the CAA. We have learned recently from the CAIR and CAMR decisions that the Act is far from flexible according to the Court. You seem to recognize those constraints when you suggest that EPA may find it difficult to develop the legal theories to support regulations under Section 111 that self adjust according to actual cost and technology. Do you believe the Agency has all the necessary flexibility to issue a Rule that would withstand legal challenge?

Answer: The EPA can and must move forward with regulations under the Clean Air Act but there is no question in my mind that Congress can do better both for the environment and for the economy with new legislation specifically designed for the unique challenges of regulating greenhouse gases. As I said in my testimony, the Clean Air Act poses unnecessary challenges largely stemming from the differences between greenhouse gases and the other forms of air pollution that the EPA has previously regulated. Regulations under the Clean Air Act – like regulations under any new legislation – will be subject to litigation, but it is likely that regulations under the Clean Air Act will face greater litigation risk because the Clean Air Act was not specifically designed for greenhouse gases. The EPA has a difficult balancing act between trying to make the Clean Air Act work as well as possible and trying to make the regulations as robust to legal challenge as possible. The EPA will need to develop new legal approaches simply because the EPA has not previously regulated greenhouse gases, and new legal approaches have some legal risk. The uncertainty caused by the legal risk will increase costs to industry and may cause the EPA to pursue somewhat fewer emissions reductions, further explaining why new, comprehensive climate legislation will be better both for the environment and for the economy.

The Chairman. Thank you, Mr. Burnett. Our next speaker is David Bookbinder, Chief Climate Counsel over at the Sierra Club. Welcome, sir.

STATEMENT OF DAVID BOOKBINDER CHIEF CLIMATE COUNSEL, SIERRA CLUB

Mr. BOOKBINDER. Thank you, Madame Chairman, Senator Inhofe, Senator Whitehouse. I guess in the—in the eyes of some people I may be one of the bad guys here. I'm the counsel—I was counsel in the Massachusetts versus EPA case.

I'm counsel in the cases chivying EPA to try to get them to regulate greenhouse emissions—greenhouse gas emissions from power plants, refineries, other sources. I've been counsel in the auto industry challenges to California's motor vehicle greenhouse gas regulations and in the case against EPA to overturn the Waiver, and I'm also counsel in the Bonanza Power Plant case, which Mr. Meyers referred to earlier as the one pending before EPA's environmental appeals board. So, I'm in the thick of it.

I'm trying to get regulation done, and the first thing I want to say is legislation, tailor-made legislation, is far preferable to these regulatory steps. We don't have that legislation. Hopefully, we will get it. Until then, we're going to have to go the regulatory path. There are two reasons for that.

One, we need to do something, and two, December, 2009, the world is going to gather in Copenhagen to try and address climate change, and unless the president of the United States shows up with something in his hand to say the United States has begun to take action, we are going to lose our next best opportunity to address global climate change.

If Congress comes up with comprehensive legislation by the end of 2009, terrific. If not, there is a single set of steps that I outline in my testimony that EPA can take as a regulatory matter. Now, I think it's—I think the most important thing I can say today is the two bugaboos that we keep hearing about regulation need to be dispelled immediately.

The first is the PSD program. This is an incredible red herring. The environmental community does not want to apply PSD to millions of sources. The agency doesn't want it. Industry doesn't want it. Nobody wants it, and EPA has already come up with some excellent ideas of how we do—how we can avoid it, even in the absence of a legislative fix to Section 165 of the Clean Air Act.

There are ways to avoid it. We are advocating applying PSD only to the five to ten thousand ton sources. We do not want industry, meanwhile, you know, hiding behind the local church and Dunkin Donuts and claiming we're out to regulate them. We are not. We do not want that.

The second thing that—along those lines is the NAAQS—The National Ambient Air Quality Standards. We do not want a NAAQS for CO_2 , and there are perfectly legitimate means under the Clean Air Act to avoid promulgating a NAAQS for CO_2 . So, let's just drop those. We don't want them, industry doesn't want them, Congress doesn't want them, EPA doesn't want them, the American people don't want them. We can stop right there.

Let me just say one last thing about the regulatory approach. Many years ago, Senator Klobuchar and I graduated together from the University of Chicago law school, and she went off to her career, and I went off to Wall Street, and I spent many years working for the investment banks that are busy right now trying to resolve their problems.

I represented corporations across the spectrum. I represented JF Corporation in its litigation against the United States over its asbestos liabilities. I represented Brown and Williamson Tobacco in its cancer cases. I have represented and dealt with corporate America. I understand how they feel about regulation and regulatory schemes.

And the regulatory schemes that we can enact under the Clean Air Act are perfectly feasible and useful ways to begin addressing global climate change. And I will leave the specifics to—to my written testimony and save everyone a little more time.

[The prepared statement of Mr. Bookbinder follows:]

TESTIMONY OF DAVID BOOKBINDER
Chief Climate Counsel
Sierra Club
Before the Senate Committee on
Environment and Public Works

Hearing on Regulation of Greenhouse Gases Under the Clean Air Act
September 23, 2008

Madame Chair, Ranking Member Inhofe, thank you for the opportunity to testify today as to what regulatory steps the next Administration should take under the Clean Air Act to address climate change. My name is David Bookbinder, and I am the Chief Climate Counsel for Sierra Club. Sierra Club is a national non-profit organization, founded by John Muir in 1892, whose 1.1 million members and supporters are dedicated to exploring, enjoying, and protecting the planet.

Let me begin by acknowledging that climate change, a problem that affects every aspect of our environment and whose solution that will affect every aspect of our economy, is best addressed by tailor-made legislation. You, and the members of this Committee whose work on the Lieberman-Warner bill has brought us so much closer to this goal, understand this better than anyone else.

The good news is that, in the absence of such legislation, the Clean Air Act will still enable us to get the job done.

Any Clean Air Act greenhouse gas ("GHG") regulatory program will be driven by two time constraints, both of which require us to start work on significantly reducing these emissions as soon as possible. The first is obvious: global warming is real, is caused by human beings, and its potential effects on human society are catastrophic. Every day – every hour -- we come closer to the point at which atmospheric concentrations of GHGs make those effects unavoidable.

The second clock is more prosaic: it is the countdown to the December 2009 Copenhagen climate talks. The next President of the United States **must** be able to go to Copenhagen and say that the United States is – finally – getting our house in order and is ready to engage with the rest of the world. Global warming can only be addressed by global action, and the United States cannot credibly participate in those discussions without first taking meaningful steps to reduce our own emissions. Without either comprehensive climate legislation or the regulatory program I will describe, there is little point in the U.S. even attending the Copenhagen talks. And if the U.S. is not at Copenhagen, then we lose our best opportunity of avoiding those catastrophic consequences.

So, what can we do between January 21 and December 1? With just two sets of rulemakings we can take an enormous whack at U.S. GHG emissions and, in doing so, give the President the credibility he will need to negotiate with the rest of

the world. The first rulemaking would be to set CO2 emission limits for both new *and existing* power plants. The second rulemaking would be to approve California's vehicle GHG emission standards and, as has been the consistent practice over decades, adopt California's standards as national ones. These actions alone will place significant limits on almost half of U.S. GHG emissions. Other measures will necessarily follow, but because other categories of emitters are responsible for far smaller shares of U.S. emissions, *e.g.*, petroleum refineries (3%), Portland cement kilns (2%), iron and steel mills (1%), it is critically important that we focus on getting the biggest bang for the buck before Copenhagen.

I. THE REGULATORY PREDICATE: ENDANGERMENT OF PUBLIC HEALTH AND WELFARE

The first thing EPA should do is issue a determination that GHG emissions "are reasonably anticipated to endanger public health and welfare". As Congress defined the term "welfare" in §302 of the Act, this means determining that GHGs "are reasonably anticipated to endanger public health or soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, or climate."

Even the Bush Administration EPA concedes that this is so, even as it has steadfastly refused to do so officially. As EPA stated earlier this year (73 Fed. Reg. 12156, 12167; footnotes omitted):

> The IPCC made the following conclusions with *very high confidence* regarding what are expected to be key impacts for North America: coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution; climate change will constrain North America's over-allocated water resources, increasing competition among agricultural, municipal, industrial and ecological uses; climate change impacts on infrastructure and human health and safety in urban centers will be compounded by aging infrastructure, maladapted urban form and building stock, urban heat islands, air pollution, population growth and an aging population; and, disturbances such as wildfire and insect outbreaks are increasing and are likely to intensify in a warmer future with drier soils and longer growing seasons.
>
> Severe heat waves are projected to intensify in magnitude and duration over the portions of the U.S. where these events already occur, with likely increases in mortality and morbidity, especially among the elderly, young and frail. Ranges of vector-borne and tick-borne diseases in North America may expand but with modulation by public health measures and other factors.
>
> Climate change is also expected to facilitate the spread of invasive species and disrupt ecosystem services. Over the 21st

century, changes in climate will also cause species to shift north and to higher elevations and fundamentally rearrange U.S. ecosystems. Differential capacities for range shifts and constraints from development, habitat fragmentation, invasive species, and broken ecological connections will alter ecosystem structure, function, and services.

The IPCC projects with virtual certainty declining air quality in U.S. and other world cities due to warmer and fewer cold days and nights and/or warmer/more frequent hot days and nights over most land areas. Climate change is expected to lead to increases in ozone pollution, with associated risks in respiratory infection and aggravation of asthma. Ozone exposure also may contribute to premature death in people with heart and lung disease. In addition to human health effects, tropospheric ozone has significant adverse effects on certain vegetation. The directional effect of climate change on ambient particulate matter levels remains uncertain.

It should be noted that moderate climate change in the early decades of the century is projected to have some "positive" effects including an increase aggregate yields of rainfed agriculture by 5-20% in the U.S. Such effects, however, contain important variability among regions. Moreover, major challenges are projected for crops that are near the warm end of their suitable range or depend on highly utilized water resources. Recent studies indicate that climate change scenarios that include increased frequency of heat stress, droughts and flooding events reduce crop yields and livestock productivity beyond the impacts due to changes in mean variables alone. Climate variability and change also modify the risks of pest and pathogen outbreaks.

Following this rather grim recitation, EPA concluded:

As the previous section indicates, global climate change is a substantial and critical challenge for the environment. There is little question that the conditions brought about as a result of global climate change are serious, whether reviewing the issue as a global, national or state-specific issue.

Because GHGs are thus "reasonably anticipated to endanger public health and welfare", EPA should make this determination applicable to each section of the Clean Air Act that requires it as a predicate to regulatory action; CO2 is CO2, regardless of whether it comes out of the tailpipe of a car or the smokestack of a power plant, and the same is true for every other GHG.

II. REGULATING EMISSIONS FROM NEW AND EXISTING FOSSIL-FUEL FIRED POWER PLANTS

A. Standards

New plants. When revising New Source Performance Standards (NSPS") for power plants in 2006, EPA refused to impose CO2 limits on the grounds that it lacked authority to do so. Challenged in court, this rulemaking was remanded to EPA following the Supreme Court's decision in *Massachusetts v. EPA*, and it is now the appropriate vehicle for limiting new fossil fuel-fired power plant emissions to 800 lb. CO2/MWh. This would permit new gas-fired plants but would effectively stop any new coal-fired ones that did not employ carbon capture and sequestration ("CCS"). This rulemaking should also contain a second phase, effective 2016, tightening the standard to approximately 250 lb. CO2/MWh. This would be achievable via either combined gas/solar or gas/wind generation or 90% CCS.

However, even before EPA starts this NSPS rulemaking, it should immediately require Best Available Control Technology ("BACT") (and provide BACT guidance) for CO2 from new coal-fired plants. Unlike most agency actions, this could be done in a matter of days; all EPA need do is reverse its current position in the *Bonanza* power plant litigation, now pending before the agency's Environmental Appeals Board.

On August 30, 2007, EPA issued a Clean Air Act permit for the proposed Bonanza coal-fired power plant in Uintah County, Utah. Although this plant would emit 1.8 million tons of CO2 a year, EPA did not impose any CO2 emissions limits. Sierra Club challenged this decision on the grounds that §165(a)(4) of the Act requires BACT "for each pollutant subject to regulation" under the Act.

Massachusetts held that CO2 was a "pollutant", and in §821 of the Clean Air Act Amendments of 1990 Congress mandated that EPA "shall promulgate regulations within 18 months . . . to require all affected sources subject to Title IV of the Clean Air Act" to "monitor carbon dioxide emissions . . ." 42 U.S.C. § 7651k note; Pub. L. 101-549; 104 Stat. 2699. EPA then promulgated these regulations in 1993. 40 C.F.R. § 75.1 *et seq.*

Because carbon dioxide is thus clearly both a "pollutant" (per *Massachusetts*) and is "subject to regulation" (per Congressional command), it seemed obvious that the Bonanza permit must require a BACT limit for CO2. Obvious, except, of course, to EPA, which claimed that Congress did not mean the word "regulation" in §165(a)(4) to mean the same thing as the word "regulation" in §821. According to EPA, "regulation" in §165(a)(4) means "subject to actual emissions limits", and does not include the monitoring and reporting regulations required under §821. (That is EPA's lead argument; its back-up argument is that §821 is not actually part of the Clean Air Act, even as it has both administratively and judicially enforced §821 via the Act's enforcement provisions in §§ 113 and 304.)

Existing plants. Coal-fired power plants are the single largest source – 24% -- of U.S. GHG emissions, and in conjunction with the NSPS limits for new plants, EPA should impose limits on existing ones. The first phase should require at least the 8-10% reduction in CO2/MWh via measures that EPA has already identified in the Technical Support Documents to its recent Advanced Notice of Proposed Rulemaking ("ANPRM"). The second phase would impose a 90% CO2 emission reduction; as with the second phase standard for new plants, this could be achieved by either allowing existing sources to take credit for additional renewable generation or via CCS, and should have the same effective date of 2016. (The necessary CO2 transport and sequestration regulations would be part of this process, and EPA has already begun work on the latter.)

Apropos of this, it is important to note that it is technologically possible to separate CO2 from post-combustion flue gas; various absorption mechanisms (using alkanolamines, chilled ammonia, etc.), as well as oxy-fuel combustion, have demonstrated 90% CO2 capture rates. Industry tells us that the technologies for CO2 pipeline transport and underground storage are also fairly well understood, although it has never been undertaken on the scale contemplated here.

B. Legal Authority

Section 111 (New Source Performance Standards) is the Act's basic mechanism for regulating stationary source emissions, and under it EPA has set standards for numerous pollutants across dozens of "source categories", *e.g.*, lead smelters, paper mills, etc.

When setting NSPS for new sources, §111(d)(1) requires EPA to also establish standards *for existing sources*. However, there are both procedural and substantive differences in how the CAA deals with existing facilities, and although §111(d) was enacted in 1970, EPA has set such standards for only 5 out of more than 70 NSPS source categories.[1]

Procedurally, §111(d) is modeled on the §110 State Implementation Plan ("SIP") process. After EPA finalizes standards, a state has 9 months to submit a plan for how it will impose them on existing sources, EPA has 4 months to review the plan, etc.

Substantively, §111(a)(1) requires "Best Demonstrated Technology", *i.e.*, standards reflecting "the best system of emission reduction (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." (EPA interprets this to mean that such "systems, and

[1] For municipal waste combustors, municipal solid waste landfills, sulfuric acid plants, hospital waste incinerators and Kraft pulp mills.

corresponding emission rates, need not be actually in use or achieved in practice at potentially regulated sources or even at commercial scale." ANPRM p. 427.)

However, in setting standards for existing facilities, §111(d)(2) requires EPA to consider the "remaining useful lives of the sources . . . to which such standard applies." The implementing regulations expand on this and allow states to apply "less stringent standards or longer compliance schedules" if the state demonstrates "unreasonable cost of control resulting from plant age, location or basic process design" or "other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable." 40 C.F.R. 60.24(f). In conjunction with this rulemaking, I anticipate that EPA would amend these regulations in order to better tailor them to these circumstances.

III. REGULATING VEHICLE GHG EMISSIONS

EPA should immediately (a) grant California the waiver of preemption under §209(b) for its vehicle GHG standards, (b) adopt California's standards as federal standards through Model Year 2016 under §202, and (c) have the Department of Justice withdraw the government's Second Circuit brief arguing that California's standards are preempted by federal fuel economy standards. EPA should also explore conducting a joint rulemaking with California for a unified GHG emission standard after Model Year 2016.

In addition, because EPA also has authority over *existing* vehicle emissions via its authority over fuels under § 211, it should begin a rulemaking on a low-carbon fuel standard.

IV. REGULATING SOURCES NOT COVERED BY CLIMATE LEGISLATION

If EPA has the resources, it may want to consider starting the process of regulating sources of GHGs that need not be part of comprehensive climate legislation. There are several candidates for such regulation; the most likely would be methane emissions from CAFOs, mines and landfills, and hydrofluourcarbons (HFCs) and sulfur hexaflouride (SF6), used in various industrial applications.

V. MISCELLANEOUS

In addition to the measures described above, there are three other actions that EPA should undertake at the outset to clarify some of the uncertainty surrounding GHG regulation.

First, EPA should affirmatively state that it will **not** be issuing a National Ambient Air Quality Standard ("NAAQS") for CO2. There are two reasons for this. First, given the climate effects we are already experiencing, it would be a rather pointless exercise, as the NAAQS would presumably need to be set below the

current atmospheric CO2 level of 385 parts per million ("ppm"), and possibly close to the pre-industrial CO2 concentration of 250 ppm. Second, the argument that an endangerment determination mandates that EPA then set a NAAQS overlooks the fact that §108(a)(1)(c) limits EPA's obligation to establish a NAAQS to pollutants "for which [EPA] plans to issue air quality criteria". It thus appears to confer some discretion on EPA whether to establish a NAAQS, and the circumstances here appear to justify the exercise of such discretion.

Second, EPA should state that it has no intent of requiring Prevention of Serious Deterioration ("PSD") permits for sources emitting less than 5,000-10,000 tons per year ("tpy") of CO2. No one – not industry, not the environmental community, not EPA, not the state air agencies – believes that those sources should be regulated. In the absence of a legislative fix to the CAA requirement for a PSD permit for sources emitting >250 tpy of CO2, EPA has already floated in the ANPRM a number of regulatory options that could accomplish this; the most promising appears to be a "general permit" approach as is used under Title V of the Act and in other environmental statutes such as the Clean Water Act.

Finally, while it is clear that the Clean Air Act is well-suited to taking on greenhouse gases and climate change, I do not know whether the same is true for the agency itself. This is not a criticism; in contrast to many of the other witnesses here today, I have never worked at EPA and thus have far less knowledge of the agency than they do. I merely think that, given the unique challenges presented by global warming, it would be a useful exercise to examine whether EPA's current organizational structure is best suited for dealing with climate issues.

In conclusion, I want to acknowledge that trying to tackle GHGs via a Clean Air Act regulatory program is a second-best solution. A series of administrative rulemakings, lacking the national attention and debate that would attend comprehensive federal legislation, and tinged with uncertainty due to the usual thicket of regulatory and legal issues, is no one's preferred way of dealing with this problem. But in the absence of such legislation, both the science and politics of global warming demand immediate action.

Environment and Public Works Committee Hearing
September 23, 2008
Responses of David Bookbinder to Follow-Up Questions for Written Submission

Senator Barbara Boxer:

1. You testified that under the Clean Air Act EPA may be able to exercise discretion in its regulation of greenhouse gases, so as to limit the number of sources covered and regulatory compliance burdens. Please provide any additional approaches or further details regarding EPA's options for flexible regulation that you believe would be helpful.

Response: As noted, applying the existing 100 or 250 ton per year emissions thresholds for various Clean Air Act stationary source programs to CO2 would sweep in millions of small sources that would not otherwise be subject to these programs. We agree with EPA that attempting at this time to regulate such smaller sources would be unproductive. But, as EPA recognizes, the D.C. Circuit long ago upheld the agency's authority to exempt activities from regulation on the basis of administrative necessity or *de minimis* environmental impacts. *Alabama Power v. Costle*, 636 F.2d 323 (D.C. Cir. 1980). Indeed, what constitutes a "*de minimis*" amount may vary depending upon the specific pollutant. *Id.* at 495 ("Concerning the application of BACT, a rational approach would be to consider whether the *de minimis* threshold should vary depending on the specific pollutant and the danger posed by increases in its emission.") (emphasis added). We agree that these exemption mechanisms likely provide EPA with sufficient legal authority to restrict CAA regulation to those stationary sources with significant GHG emissions.

Senator Benjamin L. Cardin:

1. Mr. Bookbinder, your testimony argues for the national adoption of California's proposed vehicle GHG standards. Can you please explain to the committee why you feel that vehicle GHG emission standards are necessary in addition to national fuel economy standards? What additional protections would the emissions standards offer?

Response: Even in light of the CAFÉ fuel economy standards, we believe that federal vehicle GHG emission standards set at a level equal to (or even more stringent than) California's are necessary because such standards will result in both lower GHG emissions and greater fuel economy. (Attached is a report from the California Air Resources Board comparing the proposed CAFÉ standards to California's GHG standards). Moreover, building vehicles to meet the California standards is both technically and economically feasible, a conclusion reached *not*

only by CARB but also by the United States District Court for the District of Vermont in *Green Mountain Chrysler v. Crombie*, 508 F.Supp. 2d 295 (D.Vt. 2007). In *Green Mountain* the auto industry claimed that it was simply not possible to build a fleet meeting the California standards without bankrupting the industry; after a 16-day bench trial focusing on the issues of technology and the costs thereof, the court flatly rejected these claims in a 252-page decision.

Senator James M. Inhofe:

1. You state that EPA should place carbon controls on stationary sources under the Clean Air Act's (CAA) New Source Performance Standards because carbon is a "pollutant" that is "subject to regulation" under the CAA, in part due to Section 821. I understand that the legislative history of Section 821 is clear that it was meant to be no more than an information gathering provision to learn more about U. S. emissions. EPA also previously noted that when promulgating Section 821 regulations that it was doing so under authority of Section 821 separately and independently from the CAA. Is it your belief that the existence of monitoring and reporting provisions for CO_2 make it "subject to regulation" under the Act?

Response: Yes.

CALIFORNIA AIR RESOURCES BOARD
ADDENDUM TO FEBRUARY 25 TECHNICAL ASSESSMENT
May 8, 2008

COMPARISON OF GREENHOUSE GAS REDUCTIONS FOR THE UNITED STATES AND CANADA UNDER ARB GHG REGULATIONS AND PROPOSED FEDERAL 2011-2015 MODEL YEAR FUEL ECONOMY STANDARDS

Lead Staff: Michael Benjamin (mbenjami@arb.ca.gov, 916-323-2915)
Jon Taylor (jtaylor@arb.ca.gov, 916-445-8699)
Paul Hughes (phughes@arb.ca.gov, 626- 575-6977)
Nesamani Kalandiyur (nkalandi@arb.ca.gov, 916-324-0466)
Jeff Long (jlong@arb.ca.gov, 626-450-6140)

Reviewed By: Tom Cackette (tcackett@arb.ca.gov, 916-322-2892)
Mike Scheible (mscheibl@arb.ca.gov, 916-322-2890)

EXECUTIVE SUMMARY

This document is an addendum to a report issued by the California Air Resources Board (ARB) on February 25, 2008. It compares the greenhouse gas (GHG) emission reduction benefits expected from California's Pavley rules with the recently proposed federal fuel economy standards for 2011 through 2015 model year (MY) passenger cars and light trucks.

The previous ARB study, published before the schedule for achieving the CAFE (Corporate Average Fuel Economy) standards had been released by the National Highway and Transportation Safety Administration (NHTSA) on April 22, 2008 assumed that attaining the CAFE standard of 35 mpg by 2020 would be on a regular year-by-year incremental basis. The schedule for implementing the CAFE standards proposed by NHTSA, by contrast, is 'front-loaded' -- requiring the bulk of the increases in fuel economy to come into effect earlier during the 2011-2015 time period. This addendum takes that new schedule into consideration, and also considers revisions to the federal fleet mix assumptions used by NHTSA. (The fleet mix refers to the ratio of cars and light trucks to heavier trucks and larger SUVs.) In all other regards, this analysis uses the same methodology as the previous ARB report.

This analysis concludes that although the proposed 2011-2015 model year federal fuel economy standards result in larger reductions than our previous analysis assumed the federal program still falls far short of the GHG emission reductions that would result if the California Pavley rules are implemented in the United States, and Canada. Between 2009 and 2016, the California standards would prevent emissions of 411 million metric tons (MMT) of GHG in the United States. This is 36% more than the 303 MMT of GHG prevented if the proposed federal fuel economy rules are implemented. By 2020, the Pavley standards would reduce a cumulative total of 1283 MMT of GHG in the United States compared to 912 MMT of GHG achieved by the proposed federal standards -- a difference of 41% -- assuming the federal standards are strengthened in the 2016 to 2020 period to meet the full requirements of the 2007 Energy Bill. Similar benefits will accrue to Canada, with a cumulative total of 87 MMT of GHG reductions by calendar year 2020 with the Pavley rules, compared to 58 MMT of GHG reductions achieved by the proposed federal standards.

In short, the benefits of the Pavley rules, whether implemented in California, the United States, or Canada, are clearly greater than those provided by the proposed federal fuel economy rules, both in terms of GHG emissions reductions and fuel savings.

MAJOR FINDINGS

- ***California's Rules Are More Stringent Earlier.*** In calendar year 2016, our state standards (referred to as the California stendards or the Pavley rules) will reduce California's GHG emissions by 16.4 million metric tons (MMT) of carbon dioxide equivalents (CO_2E). This is almost 50% more than the 11.1 MMT reduction produced by the proposed federal rules (see Table 2).

- ***California's Rules Are More Stringent Later.*** By 2020, California is committed to implement revised, more stringent GHG emission limits (the Pavley Phase 2 rules). California's requirements would reduce California GHG emissions by 31.7 $MMTCO_2E$ in calendar year 2020, 45 percent more than the 21.9 MMTs reductions under the proposed federal rules in that year (see Table 2).

- ***There Are Greater Fuel Savings Under California Rules.*** Our analysis estimates the effects of the federal CAFE standards on GHG emission rates. This also allows a comparison of the impact of the two programs on vehicle efficiency. Since the California rules are significantly more effective at reducing GHGs than the federal CAFE program, they also result in better fuel efficiency – roughly 43 miles per gallon (mpg) in 2020 for the California vehicle fleet as compared to the new CAFE standard of 35 mpg.

- ***The Cumulative Greenhouse Gas Benefit Is Greater under California Rules.*** The cumulative GHG emission reductions of our standards have also been estimated (see Tables 1 and 3). Between 2009 and 2016, the California standards will prevent emissions of 55 $MMTCO_2E$ in California. This is 53 percent more than the 36 MMTs prevented if only the proposed federal fuel economy standards were implemented. By calendar year 2020, the California rules would prevent 158 $MMTCO_2E$ emissions, 49 percent more than the 106 MMTs reductions of CO_2E expected if only the proposed federal standards were implemented in California.

- ***Other States Magnify the Superiority of California Rules.*** There are also significant benefits for other states that adopt the California standards. Fourteen states including California have done so to date. By calendar year 2020, California's more stringent limits will reduce cumulative GHG emissions in California and those 13 states by 450 $MMTCO_2E$, a 43 percent improvement over the proposed federal standards (see Table 1).

- ***California's Rules Would Be a Better "National Solution."*** If the Pavley rules are implemented in all 50 states, by calendar year 2016 a cumulative total of 411 $MMTCO_2E$ will have been prevented from being emitted into the air as compared to 303 $MMTCO_2E$ if only the proposed federal fuel economy standards were implemented. By calendar year 2020, the combination of the Pavley 1 and 2 rules will have prevented 1,283 $MMTCO_2E$ from being emitted as compared to 912 $MMTCO_2E$ if only the proposed federal fuel economy standards were implemented (see Tables 1 and 3).

- ***There Are Additional Benefits if Canada Adopts California Standards.*** If the Pavley rules are implemented in Canada, by calendar year 2020, a cumulative total of 87 $MMTCO_2E$ will have been prevented from being emitted as compared to 58 $MMTCO_2E$ if only the proposed federal fuel economy standards were implemented.

- ***The Bottom Line: California's Rules Provide Superior Greenhouse Gas Benefits.*** If the Pavley rules were implemented in the United States and Canada, by 2016 a cumulative total of 440 $MMTCO_2E$ will hava been reduced as compared to 321 $MMTCO_2E$ if only the proposed federal fuel economy standards were implemented. By 2020, the Pavlay rules will have prevented 1,370 $MMTCO_2E$ from being emitted as compared to 970 $MMTCO_2E$ if only the proposed faderal fuel economy standards were implemented.

BACKGROUND

On February 25, 2008 ARB released a comprehensive report[1] comparing the greenhouse gas (GHG) emission reduction benefits of California's adopted Pavley standards with the new CAFE fuel economy standards established under the 2007 Energy Bill. The February 25 assessment compared the annual and cumulative CO_2E emissions benefits in calendar years 2016 and 2020 expected from the proposed new CAFE standards with the benefits expected if California's GHG rules were implemented in the United States and Canada.

In April the federal NHTSA proposed specific fuel economy standards for model years 2011-2015 which are more stringent than had been assumed in our February report. This addendum re-estimates the GHG benefits expected from the recently proposed federal fuel economy standards. If NHTSA implements the new standards as proposed they would begin with model year 2011 vehicles and require an average improvement in fuel economy of 4.5 percent each year through the 2015 model year. By model year 2015, new passenger cars and light trucks will need to meet average fuel economies of 35.7 miles per gallon (mpg) and 28.6 mpg, respectively, achieving a new vehicle fleet average fuel economy of 31.6 mpg or better.

The phase-in schedule for the proposed 2011-2015 model year federal fuel economy rule is as follows:

- 2011: cars 31.2 mpg, trucks 25.0 mpg, combined 27.8 mpg;
- 2012: cars 32.8 mpg, trucks 26.4 mpg, combined 29.2 mpg;
- 2013: cars 34.0 mpg, trucks 27.8 mpg, combined 30.5 mpg;
- 2014: cars 34.8 mpg, trucks 28.2 mpg, combined 31.0 mpg; and
- 2015: cars 35.7 mpg, trucks 28.6 mpg, combined 31.6 mpg.

The proposed rule accelerates the introduction of more fuel-efficient vehicles in the 2011-2015 timeframe more quickly than our previous analysis assumed. It should be noted that the 35 mpg fuel economy standard mandated by the 2007 Energy Bill for 2020 model year passenger cars and light trucks remains the same.

METHODOLOGY

As noted above, the methodology and assumptions used in calculating the benefits of the proposed 2011-2015 model year standards are the same as those in the February 25 ARB report with these two significant revisions:

- It is assumed for this analysis that approximately 50% of new vehicle sales nationwide are passenger cars as compared to the 39% assumed in the February 25 assessment. To corroborate these changes to the fleet mix, ARB staff reviewed national passenger car and light truck sales data[2] indicating that 48% of new vehicles sold in April 2008 were passenger cars with the remaining 52% being light trucks.

- Fuel economy assumptions for 2011 through 2015 model year vehicles have been updated to reflect the proposed new federal fuel economy standards for those model years.

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[1] The full report is available at http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf

[2] See Edmunds AutoObserver, *April Car Sales: U.S. Consumers Flock to Cars, Gouging Detroit Three* (May 2, 2008) http://www.autoobserver.com/2008/05/april-car-sales.html

RESULTS

Table 1 compares the cumulative GHG benefits of California's Pavley rules to the 2007 Energy Bill (as reported in the February 25 report)[3] and the proposed 2011-2015 federal fuel economy standards. For all regions analyzed, California's standards provide significantly more GHG reductions than the federal fuel economy standards, even when the more stringent 2011-2015 MY standards are taken into consideration. In calendar year 2016, our state standards will reduce California's GHG emissions by 55 $MMTCO_2E$, as compared to 36 $MMTCO_2E$ under the proposed federal standards. By 2020, the Pavley rules are expected to achieve 158 $MMTCO_2E$ reductions, 49 percent more than if the 2011-2015 MY fuel economy standards were implemented in California. If implemented in the other 49 states or Canada, the Pavley rules would provide similar additional GHG emission reductions relative to the 2011-2015 federal fuel economy standards.

Table 1. Summary of Cumulative Benefits of the California Program for California, Other States, and Canada.

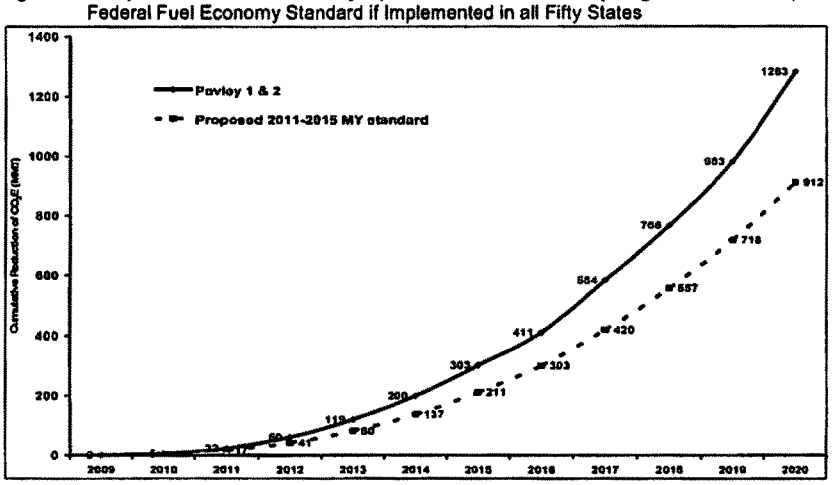
		Energy Act of 2007				Proposed 2011 - 2015 MY Standard			
		Cumulative GHGs Reduced (MMT[a])			% Benefit	Cumulative GHGs Reduced (MMT[a])			% Benefit
Region	Year	Fed. Std[b]	CA Std	CA over Fed Std	CA over Fed Std	Fed. Std[b]	CA Std	CA over Fed Std	CA over Fed Std
California	2016	22	55	33	150%	36	55	20	54%
	2020[c]	79	158	79	100%	106	158	52	49%
California and 13 Other States[d]	2016	70	154	83	119%	105	148	43	41%
	2020[c]	244	461	217	89%	316	450	135	43%
All 50 States	2016	207	434	226	109%	303	411	109	36%
	2020[c]	716	1323	608	85%	912	1283	371	41%
Canada	2016	12	29	17	139%	18	29	10	55%
	2020[c]	44	87	43	99%	68	87	29	51%
United States and Canada	2016	219	462	243	111%	321	440	119	37%
	2020[c]	759	1411	651	86%	970	1370	400	41%

[a] Million metric tons.
[b] Based on CAFE standard and proposed 2011-2015 MY standard.
[c] Based on current and planned standards.
[d] Includes states that have adopted California's standards (Arizona, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington).

Figure 1 compares the cumulative CO_2E benefits of the Pavley regulations to the proposed MY 2011-2015 fuel economy standards if California's program is implemented in all fifty states. By 2016, the Pavley rules would prevent a cumulative total of 411 $MMTCO_2E$ from being emitted into the air as compared to 303 $MMTCO_2$ if only the proposed Federal fuel economy standards were implemented. By 2020, Pavley standards would prevent 1,283 $MMTCO_2E$ from being emitted as compared to 912 $MMTCO_2E$ if only the Federal fuel economy standards were implemented.

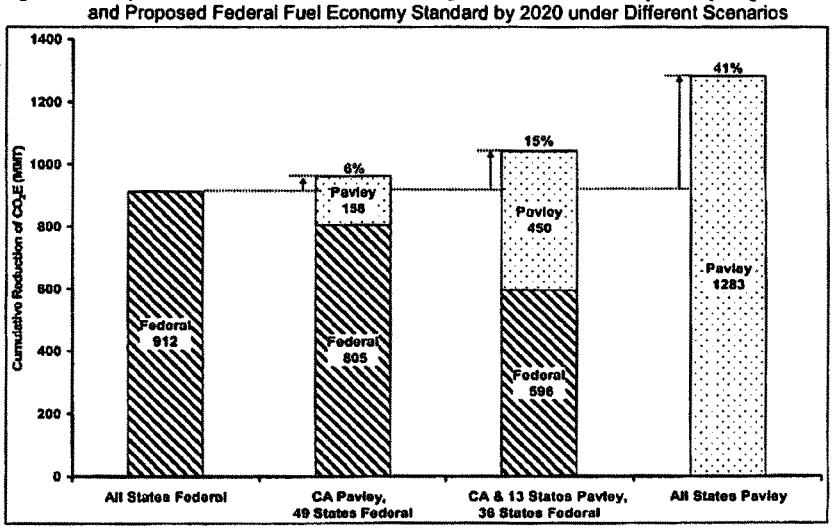
[3] Since publication of the February 25 report, Arizona has adopted the Pavley standards, increasing the number of other states hoping to implement the California standards from 12 to 13.

Figure 1. Comparison of Cumulative CO_2-Equivalent Benefits of Pavley Regulations and Proposed Federal Fuel Economy Standard if Implemented in all Fifty States



Staff also calculated the nationwide cumulative CO_2E benefits achieved by California's rules and the proposed MY 2011-2014 fuel economy standards through 2020, assuming a variety of different implementation scenarios. Figure 2 compares the four scenarios that were developed. Each bar shows the cumulative CO_2E emission reductions for those states adopting California standards, and the remainder that only benefit from the federal fuel economy standards. At the top of each bar, the percentage increase in CO_2E emission benefit is also shown.

Figure 2. Comparison of Nationwide Cumulative CO_2E Benefits Achieved by Pavley Regulation and Proposed Federal Fuel Economy Standard by 2020 under Different Scenarios



ARB staff calculated the annual and cumulative CO_2E reductions achieved for each of the 50 states if standards were in place that were as stringent as California's vehicle greenhouse gas emission standards. Tables 2 lists for each state the annual CO_2E benefits achieved by calendar year 2016 and 2020 and compares the benefits of both California's standards and the proposed 2011-2015 MY federal fuel economy standards. Table 3 compares the cumulative CO_2E benefits of the California standards and the proposed federal standards.

Table 2. Comparison of State-Specific Annual CO_2E Benefits Achieved by Pavley Regulation and Proposed Federal Fuel Economy Standards by 2016 and 2020

State	Motor Vehicle Gasoline Consumption[a] (1000 Barrels)	Gasoline Use Ratio to California	GHG Benefit from CA Stds in 2016[b] (MMTs)	GHG Benefit from Fed Stds in 2016[b] (MMTs)	GHG Benefit of CA Stds Over Fed Stds in 2016[b] (MMTs)	GHG Benefit from CA Stds in 2020[b] (MMTs)	GHG Benefit from Fed Stds in 2020[b] (MMTs)	GHG Benefit of CA Stds Over Fed Stds in 2020[b] (MMTs)
Alabama	61,815	0.16	2.2	1.8	0.5	4.8	3.5	1.3
Alaska	6,583	0.02	0.2	0.2	0.1	0.6	0.4	0.1
Arizona	66,394	0.18	2.4	1.9	0.5	5.2	3.8	1.4
Arkansas	33,139	0.09	1.2	0.9	0.3	2.6	1.9	0.7
California[b]	375,852	1.00	16.4	11.1	5.3	31.7	21.9	9.8
Colorado	49,883	0.13	1.8	1.4	0.4	3.9	2.9	1.0
Connecticut	37,850	0.10	1.4	1.1	0.3	2.9	2.2	0.8
Delaware	10,416	0.03	0.4	0.3	0.1	0.8	0.6	0.2
District of Columbia	3,007	0.01	0.1	0.1	0.0	0.2	0.2	0.1
Florida	204,304	0.54	7.4	5.8	1.6	15.9	11.7	4.2
Georgia	119,515	0.32	4.3	3.4	1.0	9.3	6.9	2.5
Hawaii	10,833	0.03	0.4	0.3	0.1	0.8	0.6	0.2
Idaho	14,116	0.04	0.5	0.4	0.1	1.1	0.8	0.3
Illinois	121,758	0.32	4.4	3.5	1.0	9.5	7.0	2.5
Indiana	75,375	0.20	2.7	2.1	0.6	5.9	4.3	1.5
Iowa	36,906	0.10	1.3	1.0	0.3	2.9	2.1	0.8
Kansas	28,893	0.07	1.0	0.8	0.2	2.1	1.5	0.6
Kentucky	51,718	0.14	1.9	1.5	0.4	4.0	3.0	1.1
Louisiana	54,379	0.14	2.0	1.5	0.4	4.2	3.1	1.1
Maine	17,040	0.05	0.6	0.5	0.1	1.3	1.0	0.4
Maryland	63,544	0.17	2.3	1.8	0.5	5.0	3.8	1.3
Massachusetts	87,081	0.18	2.4	1.9	0.5	5.2	3.8	1.4
Michigan	117,139	0.31	4.3	3.3	0.9	9.1	6.7	2.4
Minnesota	63,344	0.17	2.3	1.8	0.5	4.94	3.63	1.3
Mississippi	38,188	0.10	1.4	1.1	0.3	3.0	2.2	0.8
Missouri	74,583	0.20	2.7	2.1	0.6	5.8	4.3	1.5
Montana	11,117	0.03	0.4	0.3	0.1	0.9	0.6	0.2
Nebraska	18,872	0.05	0.7	0.5	0.2	1.5	1.1	0.4
Nevada	26,507	0.07	1.0	0.8	0.2	2.1	1.5	0.5
New Hampshire	16,542	0.04	0.6	0.5	0.1	1.3	0.9	0.3
New Jersey	102,025	0.27	3.7	2.9	0.8	7.9	5.9	2.1
New Mexico	22,262	0.06	0.8	0.6	0.2	1.7	1.3	0.5
New York	134,906	0.36	4.9	3.8	1.1	10.5	7.7	2.8
North Carolina	102,026	0.27	3.7	2.9	0.8	7.9	5.8	2.1
North Dakota	8,080	0.02	0.3	0.2	0.1	0.6	0.5	0.2
Ohio	122,074	0.32	4.4	3.5	1.0	9.5	7.0	2.5
Oklahoma	43,421	0.12	1.6	1.2	0.3	3.4	2.5	0.9
Oregon	38,488	0.10	1.3	1.0	0.3	2.8	2.1	0.8
Pennsylvania	121,878	0.32	4.4	3.5	1.0	9.5	7.0	2.5
Rhode Island	9,100	0.02	0.3	0.3	0.1	0.7	0.5	0.2
South Carolina	58,235	0.16	2.1	1.7	0.5	4.5	3.3	1.2
South Dakota	9,470	0.03	0.3	0.3	0.1	0.7	0.6	0.2
Tennessee	73,105	0.19	2.7	2.1	0.6	5.7	4.2	1.5
Texas	272,404	0.73	9.5	7.7	2.2	21.2	15.6	5.6
Utah	24,067	0.06	0.9	0.7	0.2	1.9	1.4	0.5
Vermont	8,166	0.02	0.3	0.2	0.1	0.6	0.5	0.2
Virginia	93,557	0.25	3.4	2.7	0.7	7.3	5.4	1.9
Washington	63,816	0.17	2.3	1.8	0.5	5.0	3.7	1.3
West Virginia	19,783	0.05	0.7	0.6	0.2	1.5	1.1	0.4
Wisconsin	59,671	0.16	2.2	1.7	0.5	4.6	3.4	1.2
Wyoming	7,389	0.02	0.3	0.2	0.1	0.6	0.4	0.2
Total	3,266,168	8.7	121.6	93.2	28.4	256.9	187.7	69.3

[a] Energy Information Administration / Department of Energy, data for 2005 (http://www.eia.doe.gov/emeu/states/sep_fuel/html/fuel_mg.html)

[b] California fleet mix (70 percent PC/LDT1 & 30 percent LDT2) used for CA; all other states are represented by federal fleet mix (approximately 55 percent PC/LDT1 & 45 percent LDT2). This results in other states having less benefit on a percentage basis than CA

Table 3. Comparison of State-Specific Cumulative CO_2E Benefits Achieved by Pavley Regulation and Proposed Federal Fuel Economy Standards by 2016 and 2020

State	Motor Vehicle Gasoline Consumption[a] (1000 Barrels)	Gasoline Use Ratio to California	Cum. Benefit from CA Stds by 2016[b] (MMTe)	Cum. Benefit from Fed Stds by 2016[b] (MMTe)	Cum. Benefit of CA Stds Over Fed Stds by 2016[b] (MMTe)	Cum. Benefit from CA Stds by 2020[b] (MMTe)	Cum. Benefit from Fed Stds by 2020[b] (MMTe)	Cum. Benefit of CA Stds Over Fed Stds by 2020[b] (MMTe)
Alabama	61,615	0.18	7.6	5.7	1.9	24.0	17.2	6.8
Alaska	6,583	0.02	0.8	0.6	0.2	2.6	1.8	0.7
Arizona	66,394	0.18	8.2	6.1	2.1	25.8	18.5	7.3
Arkansas	33,139	0.09	4.1	3.1	1.0	12.9	9.2	3.7
California[a]	375,852	1.00	55.5	35.9	19.5	158.4	106.5	52.0
Colorado	49,893	0.13	6.1	4.8	1.8	19.4	13.9	5.6
Connecticut	37,850	0.10	4.7	3.5	1.2	14.7	10.5	4.2
Delaware	10,418	0.03	1.3	1.0	0.3	4.1	2.9	1.1
District of Columbia	3,007	0.01	0.4	0.3	0.1	1.2	0.8	0.3
Florida	204,304	0.54	25.2	18.8	6.3	79.5	56.6	22.5
Georgia	119,515	0.32	14.7	11.0	3.7	46.5	33.3	13.2
Hawaii	10,633	0.03	1.3	1.0	0.3	4.2	3.0	1.2
Idaho	14,116	0.04	1.7	1.3	0.4	5.5	3.9	1.6
Illinois	121,788	0.32	15.0	11.2	3.8	47.4	33.9	13.4
Indiana	75,375	0.20	9.3	7.0	2.3	29.3	21.0	8.3
Iowa	36,908	0.10	4.5	3.4	1.1	14.4	10.3	4.1
Kansas	26,893	0.07	3.3	2.5	0.8	10.5	7.5	3.0
Kentucky	61,716	0.14	6.4	4.8	1.6	20.1	14.4	5.7
Louisiana	54,379	0.14	6.7	5.0	1.7	21.2	15.2	6.0
Maine	17,040	0.05	2.1	1.6	0.5	6.6	4.7	1.9
Maryland	63,544	0.17	7.8	5.9	2.0	24.7	17.7	7.0
Massachusetts	67,881	0.18	8.3	6.2	2.1	26.1	18.7	7.4
Michigan	117,139	0.31	14.4	10.8	3.6	45.6	32.6	12.9
Minnesota	63,344	0.17	7.8	5.8	2.0	24.6	17.7	7.0
Mississippi	38,188	0.10	4.7	3.5	1.2	14.9	10.6	4.2
Missouri	74,563	0.20	9.2	6.9	2.3	29.0	20.8	8.2
Montana	11,117	0.03	1.4	1.0	0.3	4.3	3.1	1.2
Nebraska	18,872	0.05	2.3	1.7	0.6	7.3	5.3	2.1
Nevada	26,507	0.07	3.3	2.4	0.8	10.3	7.4	2.9
New Hampshire	16,542	0.04	2.0	1.5	0.5	6.4	4.6	1.8
New Jersey	102,025	0.27	12.6	9.4	3.2	39.7	28.4	11.3
New Mexico	22,352	0.06	2.7	2.1	0.7	8.7	6.2	2.5
New York	134,906	0.36	16.6	12.4	4.2	52.5	37.6	14.9
North Carolina	102,026	0.27	12.6	9.4	3.2	39.7	28.4	11.3
North Dakota	8,080	0.02	1.0	0.7	0.2	3.1	2.3	0.9
Ohio	122,074	0.32	15.0	11.3	3.9	47.5	34.0	13.6
Oklahoma	43,421	0.12	5.3	4.0	1.3	16.9	12.1	4.8
Oregon	38,486	0.10	4.5	3.4	1.1	14.2	10.2	4.0
Pennsylvania	121,878	0.32	15.0	11.2	3.8	47.4	34.0	13.4
Rhode Island	8,100	0.02	1.1	0.8	0.3	3.5	2.5	1.0
South Carolina	58,235	0.16	7.2	5.4	1.8	22.7	16.2	6.4
South Dakota	9,470	0.03	1.2	0.9	0.3	3.7	2.6	1.0
Tennessee	73,105	0.19	9.0	6.7	2.3	28.4	20.4	8.1
Texas	272,404	0.73	33.6	25.1	8.4	106.0	75.9	30.0
Utah	24,067	0.06	3.0	2.2	0.7	9.4	6.7	2.7
Vermont	8,166	0.02	1.0	0.8	0.3	3.2	2.3	0.9
Virginia	93,557	0.25	11.5	8.6	2.9	36.4	26.1	10.3
Washington	63,818	0.17	7.9	5.9	2.0	24.8	17.8	7.0
West Virginia	19,783	0.05	2.4	1.8	0.6	7.7	5.5	2.2
Wisconsin	69,571	0.19	7.3	6.5	1.8	23.2	16.6	6.6
Wyoming	7,389	0.02	0.9	0.7	0.2	2.9	2.1	0.8
Total	3,268,108	8.7	411.6	302.6	109.0	1282.7	911.9	370.7

[a] Energy Information Administration / Department of Energy, data for 2005 (http://www.eia.doe.gov/emeu/states/sep_fuel/html/fuel_mg.html)

[b] California fleet mix (70 percent PC/LDT1 & 30 percent LDT2) used for CA, all other states are represented by federal fleet mix (approximately 55 percent PC/LDT1 & 45 percent LDT2). This results in other states having less benefit on a percentage basis than CA.

The Chairman. Thank you so much. As I listen to you go through the cases, you won every one of those, did you not? Except not this last one because that isn't done yet.

Mr. BOOKBINDER. We—we have a pretty good track record, so far.

The Chairman. Well, congrats to you. Now, it's my pleasure to welcome Bill Kovacs, Vice President, Environment, Technology, and Regulatory Affairs, U.S. Chamber of Commerce. Welcome, Mr. Kovacs.

STATEMENT OF BILL KOVACS. VICE PRESIDENT, ENVIRONMENT, TECHNOLOGY AND REGULATORY AFFAIRS, U.S. CHAMBER OF COMMERCE

Mr. KOVACS. Thank you, Madame Chairman and Ranking Member Inhofe and Senator Whitehouse and the rest of the Committee. It is a pleasure to be here and—and let me sort of cut to the issue. I was glad to hear David say that even the environmental community doesn't want regulation under PSD or NAAQS. That's really very reassuring.

And I think that, you know, frankly, the—the Supreme Court does in—in the way it puts the opinion out, it—it gives us options, and I think that that's necessary. One is to find endangerment, and one is not to find endangerment, and—and, frankly, the other is a reasonable explanation of why they can't or will not exercise discretion.

That doesn't mean that they can't do a lot of other things such as limit the impact of—of—of how the Clean Air Act would work, and I think that that's important. And—and that gets us to the ANPR. There's been enormous criticism of—of the ANPR, and, frankly, the—the U.S. Chamber has criticized a lot of its provisions.

But the one thing we do think that is important is that the ANPR is one hundred and 20 days of public comment, and we think that that's crucial, because if—if you've looked at the record, it's five, six hundred pages of what EPA would do. It's several thousand pages of science. We're having a very difficult time even getting a handle on it.

And—and, so, when—as we try to look at this, there are two problems that we have with using the—the Clean Air Act. And let me say before we finish, we would also suggest that if this is going to be handled, that it should be handled by Congress, not the agency.

But in terms of the Clean Air Act, there—there are two problems. One is the character of—of the emissions themselves really can't be handled under the Clean Air Act. If you look at the fact there are about three hundred and 12 million tons of regulated pollutants under the Clean Air Act, CO_2 by itself is about seven billion tons. So, you—you literally—CO_2 2 swallows the Clean Air Act.

But the second is the structure, and that's probably where David and I have—have a little bit of—of disagreement, you know. And—and—But—but maybe we can work it out. And—but the thing is, is that they would like to sort of walk around and take parts of the Act and say, we only have to implement this half way, or we can take the low-hanging fruit as we get started.

It's been very unfortunate, I think, the CARE decision is probably the best way to look at it. The courts sometimes don't necessarily agree with us on those decisions. They have put inflexibility in there, and—and the problem that we have is the endangerment standard as it—as it is in Title II seems to run through the entire Act, so once you have a finding of endangerment, we may or may not have any choice on PSD and NAAQS.

And—and what we're trying to do is—is to honestly participate in EPA's discussion. And the reason we had the study done is because we asked—we—we saw what EPA had said, and—and they looked at it and said, oh, yes, it's only going to be a few hundred, a few thousand, but it's something that's manageable.

And the question we wanted to ask is, well, let's assume that it's two hundred and fifty tons a—tons a year. Who would that pick up? And then we used DIA data, and we used Census Bureau data. And that's how we got to the 1.2. The hundred and ninety thousand facilities that are the industrial sector are probably understandable, and—and a lot of them have used PSD, and—and they live under some of the NSPS and a lot of those.

But it's when you start picking up those office buildings and farms that would have some—that would use fossil fuels as a base. They get swept in, and so it would be great to say we can exempt all of them out, but I would suggest, since we don't know what the courts are going to do, and the fact that they would be technically emitters under the Act, I don't think we're going to be able to separate them out.

And if—and—and you have it with in your control, Madame Chair, to—to really make that kind of a distinction, because if you want to go in and limit the applicability to the Clean Air, I—you know, certainly you have—have the authority to do it.

So, when we look at this, I think that—that the risk that we're trying to point out is—and—and this is the biggest risk, if we're wrong on the PSD issue—and I always say that, if we're wrong—it automatically triggers PSD. And once it automatically triggers PSD, we're literally into a case by case basis for 1.2 million facilities. Not all of which will be regulated, but it does throw them in.

So, you know, my final conclusion is, we think that the ANPR is good. It's—it's generating a discussion on the Clean Air Act that, frankly, we need. I think it will help the Administrator make a better response to the Supreme Court, but, in the end, I think it's going to have to be Congress that really makes the decision, because CO_2 is—is a unique pollutant because of its size and its transport, and we think you are the better institution to handle it than the EPA.

[The prepared statement of Mr. Kovacs follows:]

Statement of the U.S. Chamber of Commerce

ON: REGULATION OF GREENHOUSE GASES UNDER THE CLEAN AIR ACT

TO: UNITED STATES SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

BY: WILLIAM L. KOVACS, VICE PRESIDENT, ENVIRONMENT, TECHNOLOGY AND REGULATORY AFFAIRS

DATE: SEPTEMBER 23, 2008

BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS OF THE UNITED STATES SENATE

"REGULATING GREENHOUSE GASES UNDER THE CLEAN AIR ACT"

Testimony of William L. Kovacs
Vice President, Environment, Technology and Regulatory Affairs
U.S. Chamber of Commerce

September 23, 2008

Good morning, Chairman Boxer, Ranking Member Inhofe, and members of the Committee on Environment and Public Works. My name is William L. Kovacs and I am Vice President for Environment, Technology and Regulatory Affairs for the U.S. Chamber of Commerce. The Chamber is the world's largest business federation, representing more than three million businesses and organizations of every size, sector, and region. On behalf of the Chamber and its members, I thank you for the opportunity to testify here today.

You have asked me to come before the Committee today to discuss the impact regulation of greenhouse gas emissions under the Clean Air Act (CAA) would have on business and the economy. The Chamber thanks the Committee for examining this issue as part of its broader debate on global climate change policy options. As my testimony today will explain, the CAA is not the appropriate vehicle for regulating greenhouse gases.

In order to avoid a cascade of unintended regulatory consequences, Congress must pass legislation preventing the Environmental Protection Agency (EPA) from using the CAA to address greenhouse gas emissions. Congress has spent such a significant amount of time over the last several years debating climate policy that it certainly appears Congress believes it is the appropriate institution to make those policy determinations. As EPA's Advance Notice of Proposed Rulemaking (ANPR) demonstrates, there are simply too many complex policy considerations to be handled by an agency created by Executive Order several decades ago.

I. The Chamber Supports the Political Decision to Issue an ANPR.

Much has been made of EPA's decision to issue the ANPR in lieu of an endangerment finding and proposed rule, and of its decision to issue the ANPR as drafted in lieu of a more "traditional" ANPR that seeks comment on a few general, open-ended questions. It will not do us any good to argue about what could have been. What is important now is that Congress decide if it is the appropriate institution to determine climate policy, and whether it is willing to allow EPA to make that decision through a rulemaking procedure in response to a Supreme Court decision.

Content aside, the Chamber believes the political decision to issue an ANPR was a good public policy decision, because it allows an open debate as to how the CAA will operate in the context of greenhouse gases. Undertaking environmental regulations without a full understanding of the legal, economic and policy decisions can only lead to disaster, and for this reason the ANPR approach of gathering facts and information is traditionally a good one. The record developed in response to the ANPR will, conceivably, inform Congress and agency decision makers as to what they can expect if EPA regulates greenhouse gases under the CAA.

EPA is acting under a directive from the U.S. Supreme Court in *Massachusetts v. EPA*, 549 U.S. 497 (2007). In *Massachusetts*, the Court made two key findings: First, greenhouse gases fall within the capacious definition of "air pollutant" found in CAA section 301, thereby giving EPA authority to regulate greenhouse gases under the CAA; and second, EPA must determine either:

(i) that GHGs cause or contribute to air pollution which may be reasonably anticipated to endanger public health or welfare, as required by section 202(a)(1);
(ii) that greenhouse gases do not contribute to climate change; or
(iii) provide a reasonable explanation as to why EPA cannot or will not exercise its discretion to make an endangerment finding.

To date, EPA has not made a formal endangerment finding, nor is it under a firm deadline to do so. The Court stated in *Massachusetts* that "EPA no doubt has significant latitude as to the manner, timing, content, and coordination of its regulations with those of other agencies." *Id.* at 1462. The matter is therefore before EPA on remand of *Massachusetts* and in the context of a number of regulatory petitions and other requests made to EPA to regulate greenhouse gases. Because EPA has such latitude as to the matter, timing and content of its response to *Massachusetts*, the ANPR is a good vehicle for EPA to determine whether and how to make a final decision on the ultimate issue left open by the Court: whether greenhouse gas emissions from any class or classes of new motor vehicles or new motor vehicle engines endanger public health or welfare, or why EPA cannot or will not exercise its discretion to make an endangerment finding.

Moreover, it is clear from the ANPR that EPA itself does not know how to apply the CAA to greenhouse gases. The ANPR contains roughly 400 open-ended legal and policy questions, ranging from the general (the best available science for an endangerment finding) to the specific (application of section 179B to attainment plan requirements). It is unreasonable to think that EPA would have had correct answers to even a fraction of these questions that would have withstood judicial review had it just jumped into the regulatory briar patch by finding endangerment. A formal CAA greenhouse gas rule of the magnitude covered by the ANPR could require hundreds of rulemakings and could ultimately result in a decade or more of litigation. There are simply too many decisions to be made, and proceeding with a formal rule prior to answering the questions raised in the ANPR would have been bad public policy. There is

nothing wrong with taking 120 days (at least) to examine the many issues involved in applying the rigid requirements of the CAA to greenhouse gas emissions.

II. The Chamber Believes the Clean Air Act Regulatory Structures Set Forth by EPA in the ANPR, If Implemented, Would Cause Regulatory Chaos.

Although the Chamber agrees with EPA's initial decision to issue an ANPR, the Chamber has major concerns with the actual content of the ANPR as drafted by EPA staff. Put simply, the Clean Air Act is not an appropriate vehicle to regulate greenhouse gases. The ANPR, both intentionally and unintentionally, makes this fact abundantly clear.

A. EPA vastly oversteps its authority and communicates a belief that it can control the economy through CAA regulation.

The scope of the endangerment finding required by *Massachusetts* is relatively limited, and pertains only to the precise issue of whether greenhouse gas emissions from any class or classes of new motor vehicles or new motor vehicle engines cause, in EPA's judgment, endangerment. However, as described further in part B of this section, an endangerment finding limited to motor vehicles could lead to an inevitable regulatory cascade, triggering obligations to promulgate National Ambient Air Quality Standards (NAAQS), New Source Performance Standards (NSPS) and other requirements such as Prevention of Significant Deterioration (PSD) and Title V operating permits. Finding endangerment for vehicles, therefore, could easily lead to vast regulation of buildings and other stationary sources. Perhaps for this reason, EPA went far beyond motor vehicle regulations in the ANPR and set forth regulations for *all* sources of greenhouse gas emissions—in other words, the entire economy.

By "all sources of greenhouse gas emissions," EPA means everything: cars, trucks, planes, trains, boats, office buildings, refineries, manufacturing plants, tractors, lawnmowers, motorcycles, schools, hospitals, data centers, breweries, bakeries, farms, and countless other sources. EPA details in the ANPR the methods it could use not only to regulate the specific emissions from those sources, but also to set radical new standards for the *design and operation* of those sources. Virtually the only greenhouse gas emissions the ANPR does not cover are the CO_2 emissions exhaled in our collective breath.

From a legal standpoint, EPA believes the CAA gives it full authority to take such invasive action. In fact, EPA begins its discussion of relevant legal authorities with the statement, "[t]he CAA provides broad authority to combat air pollution. Cars, trucks, construction equipment, airplanes, and ships, as well as a broad range of electric generation, industrial, commercial and other facilities, are subject to various CAA programs." 73 Fed. Reg. at 44417. EPA ultimately concludes that, because regulation of motor vehicles under Title II would lead to regulation under other CAA provisions, it should use the ANPR to outline in great detail the wide range of CAA programs it believes it can invoke and even tangentially apply to greenhouse gas emissions.

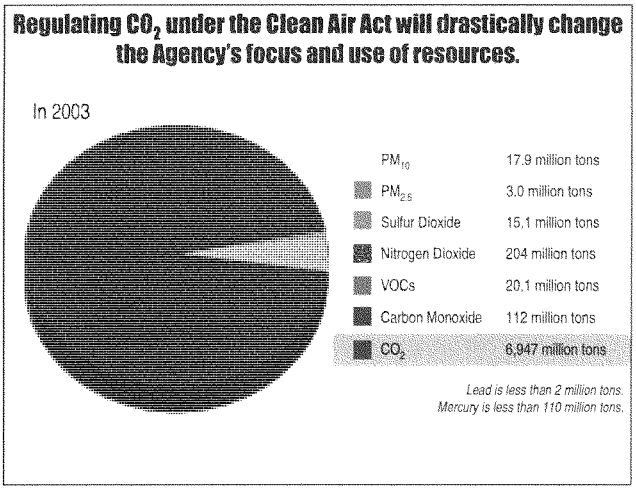
Many of EPA's suggested regulatory options would reshape business models and long-term planning for manufacturers, parts suppliers and vendors. EPA routinely suggests radical options such as engine redesign, fuel switching, new infrastructure, equipment and work practice standards, product redesign and aerodynamics, early retirement of equipment, and even sector-specific cap-and-trade programs. EPA makes these suggestions with little or no concern for the fate of businesses engaged in these particular sectors. For instance, EPA nonchalantly suggests replacing two-stroke gasoline engines in all handheld lawn care applications and recreational vehicles with four-stroke engines. If carried out, such a regulation would literally eliminate an entire line of business for lawn care equipment and recreational vehicle manufacturers.

Some technical and operational changes presented in the ANPR border on the absurd. For instance, a common solution EPA suggests for most mobile sources (cars, trucks, planes, trains and motorcycles) is a regulatory limit on speed. In other words, force Americans to drive (or fly, cruise or float) slower.

EPA truly believes it can control the economy through the programs embedded within the CAA. This is far too much economic control by an agency that was created by an Executive Order without an overarching mission set forth by Congress.

B. Greenhouse gases are not suited for regulation under the Clean Air Act.

The fundamental problem with using the CAA to control greenhouse gas emissions is that CO_2 is a much different gas than any other gas typically covered by the Act. For one thing, it is emitted in much greater quantities. As of 2003, there was roughly 19 times more CO_2 in the atmosphere than the six existing CAA criteria pollutants combined:



Because CO_2 is emitted in far greater quantities by a much wider range of sources, the thresholds for regulation built into various CAA sections (for instance, those dealing with PSD, Title V and Hazardous Air Pollutants) are so low that they will "catch" a much broader segment of the population than Congress could have intended when it wrote the CAA.[1]

CO_2 also differs from other CAA-covered gases in that it has a long atmospheric lifetime and is capable of long-range transport. CO_2 emissions from the U.S. transport to other nations, and CO_2 emissions from other nations (such as China and India) transport to the U.S.[2] Put another way, even if the U.S. were to eliminate all of its greenhouse gas emissions today, our CO_2 levels would not be zero, and CO_2 concentration in the atmosphere would still increase. For this reason, any action to address greenhouse gas emissions must be international in scope. The programs in the ANPR would be domestic-only, and ultimately will do very little to curb global greenhouse gas concentrations.

C. An endangerment finding could lead to an unmanageable regulatory cascade.

The most troubling aspect of CAA regulation of greenhouse gases is that, despite the assertions of EPA and others, EPA simply cannot regulate "a little." A finding of endangerment for motor vehicles under Section 202(a)(1), on its own, could trigger a regulatory cascade and force EPA to begin regulating through various other major CAA programs. According to EPA, "[w]hile no two endangerment tests are precisely the same," 73 Fed. Reg. at 44419, they generally call for similar elements: whether the emissions cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. EPA notes that "similar" endangerment language is found in sections 108 (NAAQS), 111 (NSPS), 112 (HAPs), 115 (international air pollution), 211 (fuels), 213 (nonroad engines and vehicles), 231 (aircraft) and 615 (ozone protection). *Id.*

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[1] For instance, facilities that emit greater than 250 tons per year of CO_2 (or, in the case of 28 industrial categories, 100 tons per year) will be subject to PSD permitting. The Chamber estimates over 1 million buildings will be exposed to PSD. An even greater number will be forced to obtain Title V operating permits, which has a 100-ton-per-year threshold. The number of regulated facilities balloons even further if CO_2 is designated a Hazardous Air Pollutant (HAP); the threshold for HAP regulation is 10 tons per year of a single pollutant or 25 tons per year of a combination of pollutants. Many homes easily cross the 10 ton-per-year threshold.

[2] EPA acknowledges in the ANPR that long-range transport of greenhouse gases is a serious problem, and suggests using CAA Section 179B as a means to address the issue. Section 179B requires EPA to approve a state implementation plan if the submitting state establishes that it would have met the relevant NAAQS but for emissions emanating from outside the United States. However, Section 179B appears only to apply to NAAQS. Moreover, in a response to a petition for rulemaking the Chamber submitted in December 2006 requesting implementation of Section 179B, EPA stated that it does not believe Section 179B provides material relief (i.e., place a state in attainment, mitigate certain nonattainment penalties) beyond the relief literally authorized by the statute.

It is therefore highly likely—maybe even inescapable—that an endangerment finding for mobile sources will lead to mandatory NAAQS and NSPS for CO_2, as well as the trigger of PSD and Title V permit obligations for hundreds of thousands of previously-unregulated businesses. I will discuss each of these.

1. National Ambient Air Quality Standards (NAAQS)

If EPA finds endangerment for mobile sources, NAAQS may be unavoidable. NAAQS are predicated on a finding of endangerment under Section 108, but once that finding is made, EPA has no choice but to begin the NAAQS process.

As Peter Glaser of Troutman Sanders LLP described to the House Select Committee on Global Warming on September 4, 2008, the process of establishing a NAAQS begins under Section 108 with EPA's publication of a "Criteria Document" describing the public health and welfare effects of the pollutant at issue. Section 108(a) obligates the EPA Administrator to issue such a document for pollutants (a) which may reasonably be anticipated to cause or contribute to air pollution that endangers public health or welfare; (b) which are emitted by "numerous or diverse mobile or stationary sources;" and (c) for which air quality criteria had not been issued prior to the date of enactment of the 1970 CAA, but for which EPA plans to issue air quality criteria.

Prongs (b) and (c) of Section 108 are easily satisfied for CO_2.[3] Therefore, if EPA makes an endangerment finding for CO_2, a Criteria Document is inescapable. Section 108 is not optional; it states that EPA *shall* issue the list of criteria pollutants. Similarly, once CO_2 is listed as a criteria pollutant, NAAQS are inescapable. Section 109 states that EPA *shall* publish regulations prescribing NAAQS for every criteria pollutant, and Section 110 states that each state *shall* adopt and submit to EPA a plan for implementation, maintenance and enforcement of every NAAQS (called State Implementation Plans or SIPs).

EPA itself says that NAAQS for CO_2 will be extremely difficult. In the ANPR, EPA admits it would likely have to assess air quality assessment on a national scale, meaning the entire U.S. would either be designated attainment or non-attainment. Whether the entire U.S. is (literally) in non-attainment will depend where the Administrator sets the NAAQS.

If the entire country were designated nonattainment, every state would have to develop and submit a SIP that includes: Reasonably Available Control Measures

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[3] It has been argued by some that EPA may avoid issuing a Criteria Document even if it concedes endangerment, due to prong (c). However, the Second Circuit explicitly rejected this argument in *NRDC v. Train*, 545 F.2d 320 (2d Cir. 1976). In Train, EPA had conceded that lead endangers public health and welfare and is emitted by numerous or diverse sources, but EPA contended that it had discretion under prong (c) of Section 108 not to issue a Criteria Document. The Court rejected EPA's statutory interpretation, ruling that the third factor applied only to pollutants included on the initial list of pollutants to be regulated under the NAAQS program, which EPA was required to promulgate within thirty days after December 31, 1970. For more discussion of *Train*, *see* Peter Glaser, Responses to Questions of the Select Committee on Energy Independence and Global Warming, September 4, 2008, at 11.

(RACT); areas for interim progress toward attainment; an emissions inventory; NSR/PSD permits; and contingency measures to be implemented if the area does not meet the NAAQS by the attainment deadline. In addition, the federal government may only provide financial assistance, issue a permit or approve an activity in a nonattainment area to the extent it conforms with an approved SIP, and all transportation plans, programs and projects must conform to an approved SIP.

The purpose of a SIP for CO_2 is to reduce CO_2 and ensure that levels of the gas in the state's ambient air satisfy the NAAQS. If a state fails to submit or implement a SIP, or if it submits a SIP that is unacceptable to EPA, EPA has the power to impose sanctions or other penalties on that state. Typical sanctions include cutting off federal highway funds and setting more stringent pollution offsets for certain emitters. For CO_2, this means a state in nonattainment will be able to build as many bicycle paths as it wishes, but will have a difficult time financing and constructing highway improvements.

If, on the other hand, EPA sets the NAAQS above existing CO_2 levels, it would in essence be finding that no endangerment exists. Therefore, if EPA makes an endangerment finding, then EPA must set the NAAQS below existing CO_2 levels (and place the entire U.S. in nonattainment) in order to pass legal muster.

NAAQS for CO_2 could therefore easily result in a revolving door of punishment for state governments and their SIPs, for federal appropriators who cannot give money to states due to nonattainment constraints, for localities that have been redlined to new business, and for the millions of businesses forced to deal with abnormally stringent control measures. Foreign emissions will continue to waft over to the United States from nations such as China and India, keeping the nation in nonattainment. Businesses could eventually choose to move to other, more environmentally-lenient nations, harming our international competitiveness. To add insult to injury, the leakage of these emissions will only exacerbate our own domestic nonattainment problems. In short, NAAQS for CO_2 means nonattainment, possibly forever.

2. New Source Performance Standards (NSPS)

Much like NAAQS, NSPS are triggered by a finding of endangerment. Section 111 states that EPA *shall* include a category of sources in the NSPS list if it endangers public health or welfare. One year after the source category is listed, EPA *shall* publish regulations establishing federal standards of performance for new sources within such category. Current NSPS categories include boilers, landfills, petroleum refineries and turbines; there are 70 categories and sub-categories in all. A "standard of performance" is defined in pertinent part as "a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction." This standard is better known as "best demonstrated technology."

Once EPA has established standards of performance, states are required to submit to the agency a procedure for implementing and enforcing such standards for new or modified sources located in the state. In addition, EPA must promulgate regulations

setting forth procedures for state establishment of standards for *existing* sources. This process is similar to the SIP process for NAAQS.

EPA theorizes in the ANPR that it could use a cap-and-trade program in lieu of plant-by-plant standards of performance. However, the D.C. Circuit's decision vacating the Clean Air Interstate Rule (CAIR) had not been issued prior to drafting of the ANPR. The CAIR decision calls into serious question, if not completely invalidates, EPA's authority to create a cap-and-trade program on its own.

Therefore, it seems inevitable that an endangerment finding will force EPA to issue plant-by-plant standards of performance for CO_2, and businesses will have to install best demonstrated technologies pursuant to NSPS. If greenhouse gases were regulated, the categories would be limitless.[4] The federal government and states may be forced to create a new NSPS "police force" to handle all the new categories.

3. Prevention of Significant Deterioration (PSD)

PSD is triggered the moment CO_2 becomes a "regulated pollutant" under the CAA. It happens instantaneously—sooner, even, than a NAAQS or NSPS.[5] And it may have the greatest impact.

Under the CAA, should CO_2 be deemed regulated under the Act—even if the regulation is for vehicles or fuels and is specifically not directed at stationary sources—no new or existing "major" stationary source of CO_2 can be built or modified (if the modification increases net emissions) without first obtaining a PSD permit. Major sources are defined as either a source in one of 28 listed categories (mostly industrial manufacturers and energy producers) that emits at least 100 tons per year (tpy) of an air pollutant, or *any other source* with the potential to emit 250 tpy of an air pollutant.

According to a report released by the U.S. Chamber entitled "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant,"[6] over one million businesses will be exposed to PSD for CO_2. Many of these are previously-unregulated establishments, such as:

a. 260,000 office buildings;
b. 150,000 warehouses;
c. 92,000 health care facilities;
d. 71,000 hotels and motels;
e. 51,000 food service facilities;

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[4] EPA does not specify in the ANPR just how many new categories it would create NSPS for, but does discuss the creation of various "super-categories" covering major groupings of stationary sources. It is not clear whether such super-categories would withstand judicial review.

[5] The Chamber does not believe an endangerment alone would trigger PSD. However, because so many provisions in the CAA are tied to endangerment, the moment regulation occurs through one of those programs, PSD applies.

[6] *Available at* http://www.uschamber.com/environment.

f. 37,000 churches and other places of worship; and
g. 17,000 farms.

The PSD process is far from easy. Often it requires a determination of best available control technologies (BACT), performed on a case-by-case basis and with considerable cost and burden placed on the applicant.[7] For sources covered for other pollutants, PSD can take months or even years, and can cost hundreds of thousands or

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[7] The existing BACT determination process under the CAA for covered pollutants typically involves a lengthy five-step process, with a great deal of the legwork handled by the regulated source:

1. *Identification of available pollution control options.* Applicants must determine all "air pollution technologies or techniques with a practical potential for application to the emissions unit and the regulated pollutant under evaluation." The search for available pollution control options is relatively limitless, and can extend to: technology vendors; federal, state, and local NSR permits; technology or emissions control practices required under other CAA programs; environmental consultants; technical journals and reports; and air pollution control seminars.

2. *Elimination of technically infeasible options.* To determine whether a control technology is technically feasible, an evaluation must be made of its availability and applicability. A technology is "available" when it has been licensed and can be obtained through ordinary commercial channels, as opposed to a concept or experimental technology. A technology is "applicable" if its emissions control qualities or characteristics are physically or chemically compatible with the emissions stream being evaluated, taking into consideration the chemical and physical characteristics of the emissions stream.

3. *Ranking of remaining control technologies by control effectiveness.* Technologies not eliminated by Step 2 above are ranked, from best to worst, according to their emissions reduction potential. Manufacturing data, engineering estimates, and determinations for other permits should be considered in determining achievable emissions control. Data to be considered includes, but is not limited to: expected emission rate (e.g., tons per year); emissions performance level (e.g., pollutant removal efficiency); emissions per unit product (e.g., parts per million, lbs/mmBtu); expected emissions reduction (e.g., tons per year); economic impacts of technology (e.g., total annualized costs, cost-effectiveness, incremental costs); environmental impacts resulting from application of technology (e.g., impacts on other media such as soil or water); and energy impacts (e.g., significant energy use or conservation).

4. *Evaluation of the most effective controls (considering energy, environmental, and economic impacts) and documentation of the results.* The energy impact analysis is essentially a determination of the amount of energy that must be expended to obtain incremental emissions reductions. The economic analysis compares the costs of control options as an element of their efficiencies to various technologies. The environmental impact analysis includes consideration of secondary or collateral impacts from use of the technology (e.g., production of other pollutants; waste products or by-products that affect water or groundwater).

5. *Making of the BACT selection.* The regulated source submits proposed BACT selections to the state permitting agency, which makes the final selection.

EPA NEW SOURCE REVIEW WORKSHOP MANUAL (draft), at B.6 (1990). Even more troubling is the fact that BACT is determined at the state level (and will thus vary from state to state), and BACT for CO_2 will be subject to a great deal of interpretation. Some states may decide that BACT requires energy efficiency measures, while others could conceivably decide that BACT for a coal-fired power plant requires replacement with a wind farm.

even millions. State agencies will be crippled by the weight of these many new permit applications.

PSD is a preconstruction requirement, and applies to new construction or modifications. EPA estimates that it currently issues two to three hundred PSD permits annually. EPA does not process a large number of PSD permits because, at present, few facilities emit enough of a regulated pollutant to cross the 100/250 tpy threshold. *See, e.g.*, chart entitled "Regulating CO_2 under the Clean Air Act will drastically change the Agency's focus and use of resources," page 5, *supra*. If this number were to balloon to just thirty or fifty thousand new PSD permits, EPA and state agencies would literally crumble under their own weight. And businesses forced to comply with PSD will be barred from construction for potentially long periods of time, immediately placing our economic development at risk. If the PSD burden is too great, many businesses will simply not undertake new construction projects or modifications.

Moreover, once a source is classified as a major source for one pollutant, it is considered a major source for all other regulated pollutants under the CAA. As a result, the tens of thousands of actual PSD sufferers may now have to install BACT not only for CO_2, but also potentially for nitrous oxide, particulate matter, lead, mercury, sulfur dioxide, and other pollutants prior to any new construction. The regulatory burden is so enormous, and the number of required PSD permits so staggering, that construction in cities throughout the nation will literally stop the minute CO_2 is regulated under the CAA.

4. Title V

Title V (operating permits) poses a similar problem to PSD, although the permit process itself is not nearly as onerous as PSD. However, Title V reaches an even broader segment of society, because it applies to all sources that emit over 100 tons per year of an air pollutant, regardless of source categories. And Title V includes a citizen suit provision that, if exploited, could have severe consequences because each permit application could be challenged by any citizen.

When a source becomes subject to Title V, it must apply for a permit within one year of the date it became subject. The permitting authority then uses this information to issue the source a permit to operate, as appropriate. A Title V source generally may not operate without a permit.

EPA estimates there are 15,000 to 16,000 Title V sources in the U.S. Because the threshold for Title V is 100-tpy across the board, well over 1.2 million new sources will be subject to Title V permitting.[8] EPA estimates in the ANPR that 550,000 new permits will be required under Title V, but gives no support for this calculation. EPA admits that

[8] The Chamber estimates 1.2 million new buildings will be exposed to PSD, when the threshold is 100 tpy for 28 specific industries and 250 tpy for everyone else. Because the threshold for Title V is 100 tpy regardless of source category, the number of Title V permittees will be at least 1.2 million, and will very likely be much greater.

"[t]he sheer volume of new permits would heavily strain the resources of state and local Title V programs."

The Title V permitting authority must take final action on permit applications within 18 months of receipt. EPA has 45 days from receipt of a proposed permit to object to its issuance, and *citizens have 60 days to petition EPA to object*. It is therefore conceivable—likely, even—that activist groups could challenge every single Title V permit and bring nationwide operations to a screeching halt. Again, like PSD, Title V is triggered the moment CO_2 becomes a regulated pollutant under the CAA.

III. Congress Must Pass Legislation Preventing EPA from Regulating Greenhouse Gases Under the Clean Air Act.

In the introduction to the ANPR, EPA states:

> [T]he ANPR illustrates the complexity and interconnections inherent in CAA regulation of GHGs. These complexities reflect that the CAA was not specifically designed to address GHGs and illustrate the opportunity for new legislation to reduce regulatory complexity. *However, unless and until Congress acts, the existing CAA will be applied in its current form.*

73 Fed. Reg. at 44,397 (emphasis added). EPA makes clear that, despite its own reservations about applying the CAA to greenhouse gases, it intends to proceed with actual regulations unless Congress steps in.[9]

This summer, Congresswoman Marsha Blackburn introduced H.R. 6666, a bill that would prevent EPA from regulating greenhouse gases under the CAA. The Chamber strongly urges this Committee to consider similar legislation.

While Congress is grappling with this complex issue, EPA, through the ANPR, has gift-wrapped a solution none of us want. The debates in Congress over climate change certainly give the appearance that Congress believes it alone should set climate policy. Although disagreement remains over what that policy ultimately should be, the Chamber firmly believes that Congress is the proper institution to make those decisions, and strongly urges Congress to enact legislation prohibiting EPA from regulating greenhouse gases under the Clean Air Act.

Thank you for the opportunity to testify today. I look forward to answering any questions you may have.

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[9] It is important to recognize that most of the Executive Branch does not believe the CAA is the appropriate vehicle to regulate greenhouse gases. Presently, nine federal agencies have expressed their strong disapproval. Even EPA Administrator Stephen Johnson shares this view in his preamble to the ANPR.

CHAMBER OF COMMERCE
OF THE
UNITED STATES OF AMERICA

WILLIAM L. KOVACS
VICE PRESIDENT
ENVIRONMENT, TECHNOLOGY &
REGULATORY AFFAIRS

1615 H STREET, NW
WASHINGTON, DC 20062
(202) 463-5457

November 7, 2008

The Honorable Barbara Boxer
Chairman
Committee on Environment & Public Works
United States Senate
Washington, DC 20510-6175

The Honorable James L. Inhofe
Ranking Member
Committee on Environment & Public Works
United States Senate
Washington, DC 20510-6175

Dear Chairman Boxer and Ranking Member Inhofe:

On behalf of the U.S. Chamber of Commerce, the world's largest business federation representing more than three million businesses and organizations of every size, sector, and region, I am pleased to provide you with my responses to the follow-up questions posed to me from the members of the Committee on Environment & Public Works. These questions and answers pertain to my testimony before the Committee on September 23, 2008, on the topic of regulation of greenhouse gases under the Clean Air Act (CAA). I will respond to each of your questions in the order set forth in your letter.

Question from Senator Barbara Boxer

1. Your testimony makes clear that the U.S. Chamber of Commerce opposes addressing global warming under the Clean Air Act. Does the Chamber support legislation that would mandate specific reductions in greenhouse gas emissions in order to address the threat of global climate change? If so, please provide documentation reflecting the position of the Chamber.

As the Chamber's President and Chief Executive Officer, Thomas J. Donohue, testified before this Committee on June 28, 2007, the Chamber believes that effective climate change legislation must:

i. Preserve American jobs and the competitiveness of U.S. industry;
ii. Provide an international, economy-wide solution, including developing nations;
iii. Promote accelerated development and deployment of greenhouse gas reduction technology;

iv. Reduce barriers to the development of climate-friendly energy sources; and
v. Promote energy conservation and efficiency.

As Mr. Donohue testified, the Chamber weighs all climate legislation against these five core principles. The Chamber has not endorsed one specific solution or one specific piece of legislation, but over the years has supported legislation that funds research, development and deployment of clean energy technologies, and that promotes energy efficiency. The Chamber has, on many occasions, supported and promoted significant funding for the numerous clean energy technologies authorized in the Energy Policy Act of 2005 (EPAct) and Energy Independence and Security Act of 2007 (EISA).

Perhaps the best example of the Chamber's support for its climate change position occurred at the most recent G8 Business Summit, held on April 17, 2008, in Tokyo, Japan. The Chamber's former Chairman, Paul S. Speranza, Jr., participated on behalf of the Chamber. Other participants included: Nippon Kiedanren; Confederation of Italian Industry; Canadian Chamber of Commerce; French Business Confederation; Business Roundtable; United States Council for International Business; Confederation of British Industry; Russian Union of Industrialists and Entrepreneurs; Federation of German Industries; and BUSINESSEUROPE. The Chamber worked hand-in-hand with these business groups, many of whom have vastly different opinions on climate change policies, and was able to achieve a consensus on a set of joint recommendations. Attached is a copy of the Joint Statement of the G8 Tokyo Business Summit, which contains the group's final set of business recommendations to the world leaders.

Questions from Senator Benjamin Cardin

1. Mr. Kovacs, you suggest that regulating greenhouse gases would have a negative impact on the economy in part because of the DC Circuit Court ruling that would likely prevent the implementation of the cap-and-trade system suggested in the ANPR. If congressional action allowed a cap-and-trade program, would this regulation have the same negative effect of the economy? Do you believe regulation that would not hurt the economy is possible?

The Chamber's position is that Congress, not the Environmental Protection Agency (EPA), is the appropriate institution to determine climate change policy. As part of any congressional enactment of climate change legislation, Congress should preempt the CAA, otherwise there will be massive confusion and so many inconsistencies that implementation will be impossible. Rep. Marsha Blackburn recently introduced a bill, H.R. 6666, that would preempt CAA regulation of greenhouse gases. The discussion draft released last month by House Energy and Commerce Committee Chairman John Dingell and Energy and Air

Quality Subcommittee Chairman Rick Boucher also contained language that preempts many of the troublesome CAA programs outlined in my written testimony.

You raise a very well-timed and thought-provoking question with respect to the regulatory complexity of cap and trade programs. The Chamber opposed S. 3036, the "Lieberman-Warner Climate Security Act of 2008," in part because that bill would have created a massive federal bureaucracy by creating more than 300 mandates that must be translated into rules, regulations and reports by EPA and other federal agencies, resulting in a multi-stage process for each regulation or mandate that could take years or even decades to implement, result in prolonged litigation, and cost taxpayers hundreds of billions of dollars. The Chamber created a chart summarizing the administrative burden created by S. 3036, available at: http://www.uschamber.com/issues/index/environment/080603climatechange. The Chamber believes the multi-trillion dollar cost and the over 300 new regulations created by that bill were far too expensive and complicated to be implemented in any reasonable manner so as to avoid harm to the environment. As to what the Chamber supports, it is open to legislation that meets the principles set forth in its response to Senator Boxer's question above, and reviews all legislative proposals against those standards.

By way of further clarification, the Chamber does not suggest that the U.S. Court of Appeals for the District of Columbia Circuit's vacatur of the cap and trade program contained in the Clean Air Interstate Rule (CAIR) in the case *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008), will cause the economic chaos described in my testimony. That mess will be created by the regulatory cascade triggered by a finding by endangerment under CAA Section 202(a), which will lead to National Ambient Air Quality Standards (NAAQS), New Source Performance Standards (NSPS), Prevention of Significant Deterioration (PSD) permitting, and Title V permitting. However, the *North Carolina* opinion, along with the opinion of the U.S. Supreme Court in *Massachusetts v. EPA*, 549 U.S. 497 (2007), indicates an unwillingness by the highest courts in this nation to allow flexibility beyond the precise statutory language contained in the CAA. This impacts EPA regulation of greenhouse gases because (a) EPA repeatedly states in the ANPR that it would consider cap and trade regimes for NSPS, fuels and other programs; and, perhaps more importantly, (b) EPA routinely suggests that it can dull the economic impact of NAAQS, NSPS, PSD, and Title V by reading language into the CAA that is not there—a method prohibited by *North Carolina* and *Massachusetts*.

2. Several of the other witnesses suggested a gradual approach to regulating greenhouse gases under the Clean Air Act. Do you think there are any steps that could be taken under the Clean Air Act to reduce greenhouse gas emissions that would not lead to the kind of regulatory complications your testimony outlines?

It does not appear to be legally possible that EPA can regulate greenhouse gas emissions under the CAA without also triggering some or all of the other CAA programs outlined in my testimony. If the Administrator makes a finding of endangerment under Section 202, two provisions also triggered by endangerment—NAAQS and NSPS—are inescapable, and PSD and Title V will follow for 1.2 million or more stationary entities. If EPA regulates greenhouse gases through a provision that does not require an endangerment finding, PSD and Title V will still be triggered. Moreover, EPA cannot simply regulate its way out of these programs. As I stated in my answer to your Question 1 above, both *North Carolina v. EPA* and *Massachusetts v. EPA* make abundantly clear that EPA may not interpret the CAA in a way that is inconsistent with the plain language contained in the statute.

Questions from Senator James Inhofe

1. How many small businesses does the Chamber represent? How many of them, in your view, have never been subject to Clean Air Act permitting requirements before?

The Chamber represents over 3 million businesses in its federation. Our members include businesses of all sizes and sectors—from large Fortune 500 companies to home-based, one-person operations. 96 percent of the Chamber's membership consists of businesses with fewer than 100 employees.

At present, very few of these small businesses are covered by the CAA. EPA issued 282 total PSD permits last year, and issued only 15,000 to 16,000 Title V permits. Because all regulated entities must obtain Title V permits, this means the entire regulated community for pollutants other than CO_2 is 15,000 to 16,000. However, as my testimony demonstrates, once EPA regulates greenhouse gases under the CAA, the regulated community balloons to 1.2 million businesses for PSD purposes, and even more for Title V.

There is no easy way to calculate how many of these small businesses have never been subject to CAA permitting requirements before, but logic dictates that very, very few of them are currently regulated. Small businesses will generally have to have the potential to emit greater than 100 tons per year (for Title V purposes) or 250 tons per year (for PSD purposes). As of 2003, there were more than 20 times the amount of CO_2 emissions (7 billion tons) than the six existing criteria pollutants combined (300 million tons). Given the relatively small amounts of criteria pollutants emitted, and taking into account current

pollution control technologies—such as scrubbers—only large industrial operations emit more than 100 or 250 tons per year of CAA-regulated pollutants (e.g., particulate matter, sulfur dioxide). However, there is no easily-identifiable control technology, *other than cessation of operations*, that will allow the 1.2 million-plus businesses caught in the web of PSD and Title V to emit less than 100 or 250 tons per year of CO_2.

2. What is the Chamber's response to those who argue your claims of economy-crippling regulatory impacts are being over exaggerated and that you are using a "false boogeyman of regulatory nightmares" as scare tactics to prevent acting at all?

You raise a very interesting point. There are some who have called our arguments a "false boogeyman of regulatory nightmares." However, even EPA acknowledges that an endangerment finding cannot be limited to the mobile sector. The ANPR states:

> In developing a response to the Massachusetts decision, EPA conducted a thorough review of the CAA to identify and assess all of the Act's provisions that might be applied to GHG emissions. Although the Massachusetts decision addresses only CAA section 202(a)(1), which authorizes new motor vehicle emission standards, the Act contains a number of provisions that could conceivably be applied to GHG emissions. EPA's review of these provisions and their interconnections indicated that ***a decision to regulate GHGs under section 202(a) or another CAA provision could or would lead to regulation under other CAA provisions.***

73 Fed. Reg. at 44417 (emphasis added).

You will recall that Mr. Bookbinder stated at the September 23, 2008, hearing before the Committee that even if PSD were triggered, he did not expect that his organization or others would seek to enforce PSD program requirements on anything but the largest emitters. His testimony, along with the testimony of others on the panel, suggested that the CAA could be implemented in a piecemeal fashion instead of in the manner suggested (and feared) by the Chamber and others.

It bears mentioning that many of the same groups promising that the CAA will be flexible have actively pursued the trigger and enforcement of PSD for greenhouse gases in the following cases: *In re: Deseret Power* (before EPA's Environmental Appeals Board ("EAB"), PSD Appeal No. 07-03); *In re: Sevier Power Company Power Plant* (case before the Utah Air Quality Board, No. DAQE-AN 2529001-04, decided January 9, 2008); *In re: ConocoPhillips* (case before the EAB, PSD Appeal No. 07-02); *Desert Rock Energy and Diné Power Authority v. EPA* (case filed in S.D. Tex, No. 08-0872); *Environmental Defense Fund v. North Carolina Dept. of Env. & Nat. Res.* (case before the NC Office of Administrative

Hearings, No. ____, filed March 27, 2008); and *In re: Christian County Generation, LLC* (case before the EAB, PSD Appeal No. 07-01, decided January 28, 2008).

The Plaintiffs in *Massachusetts* argued in that case that the NAAQS program is an "entirely separate program from the mobile source program" contained in the CAA. Initial Brief: Appellant-Petitioner at 28, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120). They have repeatedly attempted to convince judges and lawmakers that NAAQS can be avoided if the Administrator does not plan to issue a criteria document pursuant to CAA Section 108. However, as *NRDC v. Train*, 545 F.2d 320 (2d Cir. 1976), makes clear, this argument is incorrect as a matter of law. Nothing short of legislative intervention can stop the NAAQS process once a finding of endangerment is made for motor vehicles under Section 202.

The same is true for NSPS. EPA, in the ANPR, believes it can modify its obligations to comply with NSPS by creating a cap-and-trade system. However, *North Carolina v. EPA* implies that EPA may not be authorized to create a cap-and-trade system by regulation at all.

EPA believes it can circumvent the PSD program through several regulatory options, such as: subjective interpretation of potential to emit; general permits; streamlined BACT; phase-in of applicability of PSD; and raising the threshold for exposure to the PSD program. This is the subject for which Mr. Bookbinder asked "who would sue." However, EPA has never, under any circumstances, attempted to use any of the aforementioned methods to limit applicability of PSD. Although convenient, it is hard to imagine that the judges who wrote *Massachusetts* and *North Carolina* would tolerate EPA's attempts to re-interpret the text of the CAA. At that point, the only thing standing in the way of widespread application of PSD is the word of Mr. Bookbinder that PSD would not exploited—a statement that should be viewed with extreme caution, given that Sierra Club, NRDC and others argued in the cases listed above, as well as a challenge to Delaware's SIP, that greenhouse gases are already regulated under the CAA and PSD already applies.

3. Can you talk more about the report you cite in your testimony detailing the effects of the regulatory burden of controlling CO_2 as a pollutant under the Act. Can you explain the methodology used in the report, who commissioned it, and who were the authors?

The report was commissioned by the U.S. Chamber of Commerce. It was prepared by Ms. Portia M.E. Mills and Mr. Mark E. Mills. Mr. Mills prepared a similar report for PSD in 1999. Under the guidance of Mr. Mills and the Chamber, Ms. Mills updated the data using the methodology created by Mr. Mills in 1999.

The results in the Chamber's report emerge from an analysis of macroeconomic and energy data, by sector, from the Energy Information Administration (EIA), U.S. Census and

similar. The (calculated) CO_2 emissions are based on reported total on-site fuel consumption by relevant sector categories (types of buildings, factories, or farms). While aggregate energy data are deemed to be reasonably accurate, EIA and Census data become weaker (leading to under-reporting) the more finely the data are disaggregated and more specific the source. Nonetheless, the actual aggregate energy use (and thus actual CO_2 emissions) provides a reasonable starting point to estimate the number of buildings, factories, or farms that appear to emit enough CO_2 to cross the 250 tpy threshold (or 100 tpy threshold where authorized by statute). The results of the analysis provide an estimate of the total universe of buildings likely exposed to potential PSD permitting should new construction or modifications be undertaken.

EPA states in the ANPR that it issues 200 to 300 total PSD permits annually for currently-regulated pollutants. EPA also estimates in the ANPR that the total number of actual PSD permits it would have to issue for greenhouse gases would be in the range of 2000 to 3000, unless action were taken to limit the scope of the PSD program. EPA bases its estimates on a report in the ANPR docket entitled "Estimates of Facilities that Emit CO_2 in Excess of 100 and 250 tpy Thresholds." However, there are so many flaws and uncertainties in EPA's underlying analysis that its estimates are largely unreliable.

For instance, EPA's analysis does not include the number of additional PSD permits required for modifications to sources. This is likely a very large number of PSD permits that EPA simply ignores. In fact, PSD will be felt the hardest by existing sources, forced to choose between modifications that trigger PSD permitting or foregoing modifications altogether. For just one neglected sector—industrial—EPA admits that it expects to see an *order of magnitude increase* in the number of modification projects that trigger PSD, yet it makes no attempt to even estimate the number of permits that would be triggered by modifications.

In addition, despite clear statutory language in CAA § 169 stating that covered major emitting facilities are those with the "potential to emit" (PTE) more than 250 tons per year, EPA's analysis (and the supporting analyses performed by Perrin Quarles Associates, Inc., and ICF International) attempts to measure *actual emissions only*.[1] EPA uses virtually the same methodology as the Chamber's study, first calculating the total number of buildings having a PTE above 250 tpy based on an 8,760 hour-per-year operation. This should be the number used for PSD purposes; however, EPA never provides this number. Instead, EPA determines the "capacity factors" for each sector in order to measure actual emissions. For instance, EPA assumes the restaurant and food service sector only uses its equipment to ten percent of capacity, so it applies a ten percent capacity factor for that sector. It even applies capacity factors to industrial boilers, ranging from 25 to 66 percent. Naturally, reducing the number of PTE-exposed sectors by anywhere from 40 to 90 percent—before even applying

[1] EPA defines PTE as "the maximum capacity of a stationary source to emit a pollutant under its physical and operational design, including certain legal limitations, for example, on emissions or hours of operation."

the dozens of other limiting assumptions in EPA's analysis—results in a sample size much smaller than is actually required under the statute.[2]

Moreover, EPA does not consider existing major sources (i.e., those that are subject to PSD for other pollutants) in its analysis. EPA's reasoning is that these sources are not automatically subject to PSD for CO_2, and are only required to submit to PSD permitting for CO_2 if modifications are made. However, excluding all of these buildings on this basis is not at all realistic. For PSD purposes, if a source is "major" for one pollutant, it is major for all. These buildings are therefore exposed to PSD for CO_2 by virtue of already being major sources, and that is what counts.[3]

Finally, EPA's analysis only considers CO_2 resulting from direct emissions from fossil fuel combustion. EPA does not consider non-energy (i.e., process-related) emissions of CO_2 in its estimates. This means bakers, breweries and other process-related CO_2 emitters that may ultimately be exposed to PSD are not part of EPA's estimates.

4. In your testimony, you indicate that many of EPA's suggested regulatory options would reshape business models and long-term planning for manufacturers, part suppliers and vendors. How so?

The programs outlined by EPA in the ANPR, whether they be Title II mobile source emissions controls, NSPS, or PSD, share a common characteristic: they are based on technology-forcing statutes. This means regulated entities will be forced to install new technologies to their products, equipment, buildings, factories and power plants. But the ANPR takes a step further and regulates not only the design of many of these entities but also the operation. This results in a considerable invasion into the operations of American businesses and consumers, all in the name of global warming.

A typical American business needs regulatory certainty in order to plan for the future. If a lawnmower manufacturer is forced by EPA to eliminate all two-stroke engines from its product line, as the ANPR contemplates, its long-term planning will have to be altered. Consider also the cavalcade of proposed changes in the ANPR to the already-struggling airline industry: engine redesign; altered exterior aerodynamics; fly slower; change routes;

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[2] EPA seems to believe it could, under existing authority, interpret PTE differently for various types of emitting equipment. This could be used, for instance, to set PTE for certain equipment closer to its actual emission levels, not the true potential-emissions levels. In other words, EPA does not interpret PTE to always mean round-the-clock operation. It is not clear whether EPA's altered PTE "interpretations" would withstand judicial review.

[3] Not only are existing major sources exposed to PSD for CO_2, but the reverse is also true: all of the buildings regulated for PSD for greenhouse gases will now be major sources for all other regulated pollutants under the CAA. As a result, the tens of thousands of actual PSD sufferers may now have to install BACT not only for CO_2,but also potentially for nitrous oxide, particulate matter, lead, mercury, sulfur dioxide, and other pollutants prior to any new construction. The regulatory burden is so enormous, and the number of required PSD permits so staggering, that construction in cities throughout the nation could literally stop the minute CO_2 is regulated under the CAA.

comply with EPA-designed air traffic controls and management; use single-engine taxiing methods; use different fuels; and reduce aircraft weight. These recommendations are not limited to mobile sources, either; EPA suggests that industrial boiler manufacturers and users use different fuels, retire boilers early, incorporate new equipment standards, minimize excess air or exhaust temperatures, and decrease fuel usage per unit of output. The fact that these radical changes are even being *considered* in the ANPR has already caused many Chamber members to rethink their long-term strategies.

The Chamber created a series of one-pagers, entitled "Welcome to the EPA Labyrinth," which detail the hurdles many commercial, industrial and agricultural sectors will face if greenhouse gases are regulated under the CAA. For your convenience, I have attached the entire series of these one-pagers to this letter.

5. The report issued by the Chamber mentions the impact to the agricultural sector. Can you explain how climate regulations would impact farmers?

Farmers would be caught by both PSD and Title V, and would also bear the burden of tailoring their operations to deal with NAAQS and NSPS. As the U.S. Department of Agriculture (USDA) states in its letter to Administrator Johnson that is part of the ANPR:

> If GHG emissions from agricultural sources are regulated under the CAA, numerous farming operations that currently are not subject to the costly and time-consuming Title V permitting process would, for the first time, become covered entities. Even very small agricultural operations would meet a 100-tons-per-year emissions threshold. For example, dairy facilities with over 25 cows, beef cattle operations of over 50 cattle, swine operations with over 200 hogs, and farms with over 500 acres of corn may need to get a Title V permit. It is neither efficient nor practical to require permitting and reporting of GHG emissions from farms of this size.

73 Fed. Reg. at 44,377. These farmers would also have to incur the costs and burdens associated with PSD and Title V described in my response to Question 6 below.

As USDA makes abundantly clear in the ANPR, farms differ from commercial and industrial emissions sources because agricultural emissions of greenhouse gases are diffuse and most often distributed across large open areas. As a result, these emissions are not easily calculated or controlled. Many of the emissions are the result of natural biological processes that are as old as agriculture itself. Imposing the strict technology-forcing controls of the CAA on these farms and farmers could have disastrous results, particularly because, as USDA states: "technology does not currently exist to prevent the methane produced by

enteric fermentation associated with the digestive processes in cows and the cultivation of rice crops; the nitrous oxide produced from the tillage of soils used to grow crops; and the carbon dioxide produced by soil and animal agricultural respiratory processes. The only means of controlling such emissions would be through limiting production, which would result in decreased food supply and radical changes in human diets." *Id.*

6. The report issued by the Chamber indicated that "a total of over 1 million commercial buildings would become classified as new regulated stationary emissions sources." Can you elaborate on the effect this will have on operations for these building? Also, what is the impact, in terms of cost, for future construction projects?

The 1.2 million newly-regulated establishments identified in the Chamber's report will now be forced to devote a significant amount of their resources to navigating the PSD maze before commencing construction projects. According to documents released by EPA less than one month following issuance of the ANPR, an average PSD permit costs $125,120 and imposes a burden of 866 hours on the applicant.[4] If only 40,000 of the 1.2 million buildings exposed to PSD for greenhouse gases opt for new construction or modifications in a given year, PSD compliance alone would cost over $5 billion and would require the devotion of 17,320 full-time employees! The PSD application requires a determination of best available control technologies (BACT), performed on a case-by-case basis and with considerable cost and burden placed on the applicant. The existing BACT determination process under the CAA for covered pollutants typically involves a lengthy five-step process, with a great deal of the legwork handled by the regulated source.

In all, PSD could cost these newly-regulated office buildings, warehouses, farms, churches, restaurants and other buildings a small fortune—and that is before factoring in the cost of installing BACT equipment. EPA estimates the cost and burden for the applicant to be distributed as follows:

Activity	Hours	Cost
Determination of Compliance Requirements	170	$16,592
Obtain Guidance on Data Needs	120	$11,712
Preparation of BACT Analysis	102	$9,957
Air Quality Modeling	200	$19,521
Determination of Impact on Air Quality Related Values	100	$9,762
Post-Construction Air Quality Monitoring	50	$4,879
Preparation and Submittal of Permit Application	60	$5,858

[4] The Chamber is disappointed that EPA chose not to include this highly-pertinent PSD cost and burden information in the ANPR itself. EPA staff gives the impression to the casual ANPR reader that PSD is a simple process. In reality, it is one of the most burdensome regulatory requirements many of the 1.2 million covered sources will have to encounter in their day-to-day operations.

Public Hearings	24	$2,343
Revisions to Permit	40	$3,904
Other Related Costs		$40,000
TOTAL	**866**	**$125,120**

The entire PSD process takes, on average, six to twelve months. In some instances, it can take years. Businesses forced to comply with PSD will be barred from construction for potentially long periods of time, immediately placing our economic development at risk. If the PSD burden is too great, many businesses will simply not undertake new construction projects or modifications.

Moreover, once a source is classified as a major source for one pollutant, it is considered a major source for all other regulated pollutants under the CAA. As a result, the tens of thousands of actual PSD sufferers may now have to install BACT not only for CO_2, but also potentially for nitrous oxide, particulate matter, lead, mercury, sulfur dioxide, and other pollutants prior to any new construction. These previously-unregulated entities—who emit very small amounts of criteria pollutants other than CO_2—will now have to incur sizeable PSD costs to install BACT for trace amounts of nitrous oxide, particulate matter, and all other covered pollutants. The regulatory burden is so enormous, and the number of required PSD permits so staggering, that construction in cities throughout the nation will literally stop the minute CO_2 is regulated under the CAA.

These 1.2 million entities will also now be subject to Title V. Title V contains a self-funding mechanism requiring that permitting authorities collect permit fees adequate to support the costs of running a Title V program. CAA Section 502 requires that these fees equate to no less than $25 per ton, with a maximum of 4000 tons used as the basis for the calculation. 42 U.S.C. § 7661a(b)(3)(B). The self-funding mechanism in Title V, therefore, amounts to a *de facto* carbon tax on the 1.2 million or more entities subject to regulation. Even if permit fees are set at the minimum $25 per ton, this means entities that emit 100 tons per year of CO_2 will pay a $2500 annual carbon tax, while entities emitting over 4000 tons per year of CO_2 will pay a $100,000 annual carbon tax.

Every Title V permit is subject to a 60-day window prior to issuance during which any U.S. citizen may challenge the permit via citizen suit. It is therefore conceivable—likely, even—that activist groups could challenge every single Title V permit and bring nationwide operations to a screeching halt. Activist groups sue EPA, the Department of Energy and the Department of Interior over 500 times annually on environmental matters. Certainly, the imposition of Title V for greenhouse gases will give NIMBY (Not In My Back Yard) plaintiffs one more piece of ammunition to prevent a business from opening.

In light of all of these costly and time-consuming new requirements, it is fair to say that many entities will choose to do nothing rather than undertake any new construction.

7. When you mention in your testimony that EPA, in accordance with the Supreme Court, can provide a reasonable explanation as to why it cannot or will not exercise its discretion, you mean there is insufficient technical basis to pursue an endangerment finding because the uncertainty bounds may be too great, correct?

That is certainly one option for EPA, but there are others. EPA has three options in response to *Massachusetts v. EPA*. First, it may find endangerment. Second, it may make a finding of no endangerment. Third, EPA is entitled to refuse to confront an endangerment decision if it has an explanation that is reasonable. This explanation can be either science-based or policy-based. The Court explicitly stated that it did not rule on "whether policy concerns can inform EPA's actions in the event that it makes such a finding." *Massachusetts*, 127 S. Ct. at 1463. The only bar the Court set in *Massachusetts* for this third option was that it must amount to a "reasoned justification for declining to form a scientific judgment." *Id.*

Thank you once again for providing me the opportunity to testify before the Committee on the dangers of regulating greenhouse gases under the Clean Air Act. I look forward to working with the members of the Committee on this and other matters in the future.

Sincerely,

William L. Kovacs

Attachments: Joint Statement of the G8 Tokyo Business Summit
"Welcome to the EPA Labyrinth" Series

Attachment 1
Joint Statement of the G8 Tokyo Business Summit

Joint Statement of the G8 Tokyo Business Summit

17 April 2008

- Nippon Keidanren
- Confederation of Italian Industry - CONFINDUSTRIA
- The Canadian Chamber of Commerce - CCC
- French Business Confederation - MEDEF
- Business Roundtable
- U.S. Chamber of Commerce
- United States Council for International Business - USCIB
- The Confederation of British Industry - CBI
- Russian Union of Industrialists and Entrepreneurs - RSPP
- The Federation of German Industries - BDI
- BUSINESSEUROPE

Joint Statement of the G8 Tokyo Business Summit

April 17, 2008

Economic globalization is occurring at an unprecedented scale and pace. Key forces behind it have been striking progress in transportation and telecommunication technologies, the modernization of financial markets, and deregulation encouraging trade and investment in countries. At the same time, challenges remain as the growing demand for energy, raw materials and food puts strong pressures on economies and societies. The problem of climate change is becoming pressing. Volatility in financial markets poses additional problems for policy makers, investors, and consumers.

Under these circumstances, companies doing business across borders value a seamless economic environment which ensures the free movement of goods, services, people, capital and knowledge, and which delivers a reliable framework with which business can flourish. To this end, we would urge that governments make a concerted effort to cooperate, not just among the G8, but also more widely on a global scale. Conclusion of an ambitious Doha Round agreement this year is an important opportunity in this cooperation, which should not be missed.

Against this background, leaders of the economic organizations of the G8 industrialized countries gathered on April 17, 2008 to hold the second G8 Business Summit in Tokyo, following the inaugural meeting in Berlin in 2007, and exchanged views on the themes of "Enhancing competitiveness through innovation", "Tackling climate change", and "Partnership with Asia as a center of growth".

The following reflects our deliberations on the challenges facing the world economy including the above-mentioned issues. We urge the heads of the G8 gathering in Hokkaido Toyako in July to give our recommendations priority consideration. We also call on emerging economies, which are expected to play a growing role in resolving global issues, to take action along the lines set forth below. The international business community is prepared to do its part to achieve these goals.

1. Securing stability and growth of the world economy

The world economic outlook has become less certain than when we met in Berlin a year ago. The turmoil in the international financial markets, coupled with skyrocketing

prices of crude oil and other primary commodities as well as sudden and rapid movements in exchange rates entails downside risks. Even robust emerging economies will not be immune from these influences.

We urge the G8 countries, which play leading roles in the global economy, to cooperate even more closely to help stabilize the world economy, and pave the way for strong global growth. Among the issues to be addressed, we would like to draw the attention of the government leaders to the following:

- Private financial institutions should reinforce their capital positions as deemed necessary.
- Exchange markets should be closely monitored. Excess volatility and disorderly movements in exchange rate are a cause for concern and should be adequately addressed at the G8 Hokkaido Toyako Summit.
- Access to raw materials should be ensured by removing trade and investment restrictions, and free and fair competition in the market should be maintained.

Although slower economic growth is expected in 2008 and 2009 relative to recent years and uncertainty is rising, the world economy remains resilient in the long-term. Our economies will continue to grow through coordinated efforts by the G8 countries to combat the following challenges.

2. Promoting and protecting innovation

Promotion of innovation is essential to secure sustainable growth, while solving global issues such as those relating to the environment, energy, health care and poverty. Business will be a main driver of innovation to address these global challenges, and therefore needs to obtain the conditions whereby firms can justify the risks of investing in breakthrough innovations. Such innovations require support and action across ministries at national and sub-national level as well as international cooperation between business, scientific organizations, governments and civil society.

To this end, each country should further the innovation process by taking such measures as increasing the budget for science and technology, improving science/industry cooperation, improving R&D tax systems, and reinforcing human resources including support for higher education. It is also necessary for policies in other areas, including regulatory reform, public sector reform and public procurement, to be framed so that citizens can reap the benefits of innovation in society.

At the same time, with open innovation gaining weight, it is important to promote integration of knowledge and technology by strengthening exchange and networking of human resources, and other forms of collaboration. Such collaborative efforts transcend borders as well as organizations. The G8 countries should cooperate yet further for this purpose, and also make efforts to help developing countries build their capacities.

In order to promote innovation, protection and enforcement of intellectual property rights is crucial. Moreover, effective intellectual property rights systems can enhance voluntary technology transfer. The G8 countries should cooperate through commitments to strengthen intellectual property protection and enforcement against counterfeit and piracy worldwide, and help developing countries build capacity.

With a view to establishing a solid international framework for fighting against counterfeit and piracy, the G8 Business Summit calls for start of formal negotiation on a carefully considered Anti-Counterfeiting Trade Agreement (ACTA), in close consultation with industry, towards its conclusion as soon as possible. Furthermore, we welcome the efforts made by the G8 countries to move towards the harmonization of patent systems, and call for progress in discussions on harmonization of conditions for patentability such as inventive step and novelty, as well as the first-to-file system and a grace period.

3. Tackling climate change

Climate change is one of the most serious challenges facing the world today. Climate change is global in both its causes and impacts, and requires cooperative action to reduce green-house gas (GHG) emissions on a global basis. All countries need to take effective measures to reduce emissions for the long term. International cooperation in this area must achieve meaningful emission reductions while assuring economic development and access to reliable, affordable and secure energy supplies, and addressing the challenges of adapting in developed and developing countries to climate change impacts.

The G8 can play a leadership role in global climate change negotiations as it did in Heiligendamm by calling for global participation and effective climate commitments by all major emitting countries that allow for diversified approaches tailored to meet national circumstances. We welcome the "Bali Action Plan," which was adopted at the 13th Conference of Parties (COP13) to the U.N. Framework Convention on Climate

Change (UNFCCC), establishing the Ad hoc Working Group on Long-term Cooperative Action under the Convention with the purpose of discussing a framework for proactively tackling the climate change challenge beyond 2012 with all the major GHG emitters participating. We are also pleased by the clear signal to enhance action on technology as a crucial prerequisite to achieving emissions reductions breakthroughs and long-term improvements.

The G8 Business Summit calls for a post-2012 international framework to be designed:

1) to include all the major GHG emitters,
2) to develop a shared vision for long-term cooperative action, including a long-term global goal for emission reduction,
3) to secure flexibility and diversity in the way of the reduction of GHG suited to each country,
4) to strike a good balance between environment, energy security, and economic growth,
5) and to ensure equitable actions in reducing emission among major emitters.

The outcome of the G8 summit in Hokkaido, from this point of view, should be an important trigger to intensify international discussions building on the Bali Action Plan and the progress achieved at the Bangkok meeting. It is crucial that the G8 governments reach a consensus to help the above-mentioned U.N. process make substantive progress.

To put it concretely, we hope that, at the Hokkaido Toyako Summit, a proactive consensus will be achieved on:

1) exploring equitable and comparable emissions reductions that are based on sound science, national circumstances, transparent, measurable and verifiable methodologies, sectoral and economy wide considerations and impacts and cost effective opportunities for energy efficient improvements.
2) encouraging further development of cooperative sectoral approaches like the Asia Pacific Partnership (APP) including data gathering and sharing to this end, which will assist developing countries to participate in the post-2012 framework on climate change,
3) stimulating development and dissemination of innovative low carbon technology under international cooperation and in improved enabling frameworks for foreign direct investment and commercial operations,

4) establishing bilateral and multilateral financial mechanism that can support efforts of developing countries to limit their increase of GHG emissions, save energy, and adapt to the impact of climate change,
5) protecting intellectual property rights and rules of law in order to accelerate technology deployment and cooperation,
6) removing trade barriers to environmental goods and services in a non-discriminatory manner,
7) promoting voluntary technology transfer to developing countries with appropriate incentives.

More frequent substantive dialogue between business and government must be a core to and regular component of the talks that will take place within the UNFCCC, and in a host of important forums, including the G8, the Asia-Pacific Economic Cooperation, and the U.S. Major Economies Meetings.

Informed and integrated discussions with direct business input are essential for policymakers to reach an agreement on effective, long-term, global and pragmatic approaches to address the concerns about, and adaptation to, the impacts of global climate change. We call on the G8 countries to support and engage in such dialogue with the full business community.

Climate change studies show that there is no single technology that can serve as a "silver bullet". Rather, widespread deployment of existing and emerging technologies can be successful. It is vital that G8 governments, together with business, cooperate on policies to facilitate and encourage much needed research and development as well as investments in low carbon technologies. Moreover, abatement potential is not only found in industrial and power sectors but across all sectors of the economy. Many of these opportunities for abatement can be achieved at zero or even negative cost.

Business will continue to address climate change by:
1) reducing GHG emissions,
2) researching, developing and deploying energy-saving products and innovative technologies,
3) transferring technology to developing countries through usual commercial transaction,
4) helping tackle land use, land use changes and forestry issues,

5) voluntarily cooperating with works on sectoral approaches and helping to increase the understanding of the benefits and roles of them,
6) promoting, where applicable, purchasing and financing practices that minimize impact on the climate,
7) and exchanging views on principles that may help business develop its work in this field. (The annex to this paper provides initial views exchanged with the G8 Business Summit members.)

For business to play this role, we call on the G8 governments to ensure that industry will continue to be competitive without being unduly penalized by unbalanced policy measures that would divert resources away from investments in innovation.

4. Promoting liberalization of trade and investment

Maintaining open trade and investment regimes remains critical to generating economic growth and prosperity around the world economy. Governments must recommit themselves to resist the mounting political pressures for protectionism.

A successful conclusion to the WTO's Doha Development Agenda (DDA) negotiations is vital for the global economy and for reinforcing the rules-based multilateral system. The government leaders of the G8 and other major WTO members must show leadership and make the political decisions to conclude the DDA negotiations by the end of this year. To achieve it, an agreement must be reached as soon as possible on modalities of agriculture and non-agricultural market access (NAMA), and on liberalization of trade in services, with significant market access results in all three areas, as well as agreement on strengthened rules and trade facilitation. If the current negotiations fail, all players will be losers. We also fully support Russia's expeditious accession to the WTO.

Free trade agreements, if they are comprehensive in scope and cover substantially all trade, serve as a stepping stone, not a stumbling block for multilateral liberalization. Sustainable growth in Africa, Asia, Latin America and other regions is indispensable for the development of the world economy. Achieving closer economic integration in these regions in a manner that is open to the world economy constitutes a foundation for realizing their full potential.

Freedom of investment is also imperative for ensuring sustainable growth and

long-term prosperity. Foreign direct investment, which promotes competition and innovation, has played and will continue to play an important role in the development of economies in many regions of the world.

Recently, sovereign wealth funds (SWFs) have expanded in both number and scale. Although some SWFs are different in characteristics from private funds that are operated with money from a large number of investors, they should be equally required to have risk control systems that are commensurate with each fund's scale as a global investment institution, and should have accountability and transparency so that they compete with private entities in a fair manner. The aim is to ensure that all the parties involved receive equal treatment. The IMF is working on best practices and a voluntary code of conduct in order to enhance transparency and accountability of sovereign wealth funds while the OECD is working on best practices for open investment for recipient countries. The G8 countries should support and promote these multilateral efforts, and not create new barriers for foreign investment.

5. Solving development issues through economic growth

Sustainable growth in developing countries themselves is a prerequisite for the poverty reduction. The key driving forces for economic growth lie in business activities by the private sector. Without private sector activities, Millennium Development Goals (MDGs) risk not being met.

Despite growth in some developing countries including some in Africa, others continue to face serious challenges resulting from underdeveloped economic infrastructure, shortage in education and health care, weak governance by the government, corruption, and poverty. Official assistance directly to these countries should be continued, but it is also crucially important to promote business activities by the private sector through such measures as improving and expanding the framework for public-private partnership, providing incentive for investments in developing countries, and encouraging investments in infrastructure. There is great scope for the private sector to contribute to the development of human resources both in the government and the private sector of these countries.

We strongly believe that potential of the private sector should be fully utilized as one of the most effective and feasible ways for solving development issues and reducing poverty.

We also call on the G8 governments to actively engage emerging economies in dialogue

and cooperation on development issues, and promote the internationally recognized standards on human rights, rule of law, anti-corruption and environmental protection.

*****

Fujio Mitarai (Nippon Keidanren)

Emma Marcegaglia (CONFINDUSTRIA)

John Peller (CCC)

Laurence Parisot (MEDEF)

Harold McGraw III (Business Roundtable)

Paul S. Speranza, Jr. (U.S. Chamber of Commerce)

Charles P. Heeter, Jr. (USCIB)

Martin Broughton (CBI)

Alexander N. Shokhin (RSPP)

Jürgen R. Thumann (BDI)

Ernest-Antoine Seillière (BUSINESSEUROPE)

Annex: Initial Views on Principles to Help Business Advance a Low Carbon Society

Climate change is one of the most serious challenges facing the world today. Urgent actions are called for to tackle climate change.

The G8 Business Summit, as part of its effort to address climate change, has exchanged initial views on principles to help business advance a low carbon society.

1. Efforts in Business Operation
   (1) Proactively reduce green-house gas emissions from industrial and commercial operations through introduction of energy-saving technologies and programs.
   (2) Strive to build transportation systems with a low environmental load, involving shared transport with affiliated companies, low-emission vehicles, and the use of the most appropriate mode of transportation, etc.
   (3) Adopt measures to actively address climate change in offices, such as setting quantitative targets for energy conservation, and upgrading buildings to higher levels of efficiency, etc.

2. Reporting and Documenting Progress
   (1) Document and measure progress in reducing emissions and improving energy efficiency.
   (2) Encourage public reporting on emission reductions and other actions to mitigate climate change.
   (3) Encourage to set goals and policies, adapted to individual sector and company needs, for addressing climate change.
   (4) Where feasible and necessary, establish an overarching climate change lead who will have the responsibility and authority to work with all parts of the organization to ensure climate change commitments are measured and met.

3. Utilizing Technology
   (1) Recognize industry's role in addressing climate change and strive through vigorous research and development efforts to develop innovative technologies for energy efficiency and the prevention of

global climate change.

(2) Transfer energy efficiency technologies, climate change prevention technologies, and related know-how both domestically and internationally through usual commercial transactions and in an appropriate manner.

(3) Contribute to reduction of greenhouse gas emissions in the residential and commercial sector by providing energy-saving products and services.

4. Partnerships with Stakeholders

(1) While fully respecting company's specific needs and concerns in relation to purchasing and financing, examine ways to promote purchasing practices that minimize impact on the climate change("voluntary green purchasing"), and look at financing practice that could facilitate the development of companies that offer products and services with a low environmental load ("voluntary green financing").

(2) Undertake forest management projects and other social contribution activities related to climate change.

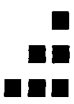
(3) Where applicable, participate in voluntary emission reduction and energy efficiency programs.

(4) Raise employees' awareness of household energy efficiency and promote activities to reduce carbon footprints.

(5) Cooperate with scientific research into the causes and effects of climate change as well as economic analysis of various measures to deal with the issue, including studies and activities by international organizations such as International Energy Agency (IEA).

<Contact Point>

Nippon Keidanren
Mr. Kazuyuki Kinbara, europe@keidanren.or.jp
Confederation of Italian Industry – CONFINDUSTRIA
Mr. Daniel Kraus, d.kraus@confindustria.it
The Canadian Chamber of Commerce – CCC
Ms. Shirley-Ann George, sgeorge@chamber.ca
French Business Confederation – MEDEF
Ms. Catherine Minard, cminard@medef.fr
Business Roundtable
Ms. Brigitte Schmidt Gwyn, bgwyn@businessroundtable.org
U.S. Chamber of Commerce
Mr. Robert Reis, rreis@USChamber.com
United States Council for International Business – USCIB
Mr. Timothy Deal, tdeal@uscib-dc.org
The Confederation of British Industry – CBI
Mr. Gary Campkin, Gary.Campkin@cbi.org.uk
Russian Union of Industrialists and Entrepreneurs – RSPP
Mr. Andrey Kuznetsov, kuznetsovav@rspp.ru
The Federation of German Industries – BDI
Mr. Matthias Kraemer, m.kraemer@bdi.eu
BUSINESSEUROPE
Mr. Adrian Van Den Hoven, a.vandenhoven@businesseurope.eu



Attachment 2
"Enter the EPA's Regulatory Labyrinth" Series

EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT

Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

RACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

Enter the EPA's Regulatory Labyrinth

Not sure what the acronyms on the border of this page mean?

That's exactly the point.

The Environmental Protection Agency (EPA) has issued an Advance Notice of Proposed Rulemaking (ANPR) that weighs options to regulate greenhouse gases under the Clean Air Act. If EPA chooses to regulate, businesses, individuals and governments will struggle to apply the alphabet soup of rigid, inflexible Clean Air Act provisions to their CO_2 emissions.

If you thought Lieberman-Warner was complicated, get ready for NAAQS, NSPS and PSD. Please pass legislation preventing EPA from regulating greenhouse gases under the Clean Air Act.

WARNING: EPA acknowledges that the Clean Air Act is not the appropriate mechanism for regulation of greenhouse gases. However, its staff has pledged to continue down the path until and unless Congress steps in. Congress must pass legislation prohibiting EPA from regulating greenhouse gases under the Clean Air Act.

NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity

U.S. Chamber of Commerce
For more information, go to www.uschamber.com/assets/env/anpr.pdf

EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

Enter the EPA's Regulatory Labyrinth

AIRLINES

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to force domestic airline carriers to:

- Change the aerodynamics of their planes;
- Fly slower;
- Redesign the engines of their planes;
- Change their routes;
- Comply with new, EPA-designed air traffic controls and management;
- Alter the *operation* of their planes, including single-engine taxiing on the runway;
- Use different fuels; and
- Reduce the weight of their planes.

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Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

BEVERAGE AND TOBACCO PRODUCERS

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a large number of buildings currently not regulated by EPA would be subject to a number of costly and burdensome Clean Air Act Programs. Beverage and tobacco producers do not escape the labyrinth.

As a result of their energy costs, beverage and tobacco producers 9,000 square feet and greater emit enough CO_2 to make them subject to Prevention of Significant Deterioration (PSD) permitting requirements. ***All of the buildings in this sector could be forced to obtain a PSD permit prior to new construction or modifications to their buildings.***[1]

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could deter new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. All of the buildings in this sector would also have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated. These permits, a condition to operation, can be challenged by *anyone* via citizen suit. It is conceivable that the issuance of many Title V permits for CO_2 will be held up while citizen suits are adjudicated.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT

Enter the EPA's Regulatory Labyrinth

BOATS

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, the Environmental Protection Agency (EPA) argues it has the authority under the Clean Air Act to force boating manufacturers, parts suppliers, and operators to:

- Change the size and performance of boat engines;
- Change the size and weight of the vessel;
- Install and/or modify heat recovery systems;
- Switch fuel types;
- Use alternative power sources, such as fuel cells, solar power, wind power, and wave power;
- Modify electrical equipment and lighting;
- Cruise slower; and
- Modify routing and fleet planning.

WARNING: EPA acknowledges that the Clean Air Act is not the appropriate mechanism for regulation of greenhouse gases. However, its staff has pledged to continue down this path until and unless Congress steps in. Congress must pass legislation prohibiting EPA from regulating greenhouse gases under the Clean Air Act.

Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT

Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

Enter the EPA's Regulatory Labyrinth

ELECTRIC POWER SECTOR

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to regulate electric power sector boilers in the following ways:

- Adopt work practice standards to minimize excess air or exhaust temperatures;
- Use different fuels or co-fire biomass with fossil fuels;
- Adopt numerical efficiency standards;
- Decrease fuel usage per unit of output;
- Incorporate equipment standards for installation of economizer and air preheaters;
- Assure early retirement of high-GHG emitting boilers; and
- Use prescribed metrics for measuring and benchmarking boiler GHG emissions.

If EPA decides to regulate greenhouse gas emissions, virtually all of the buildings in the electric power sector will be subject to Prevention of Significant Deterioration (PSD) permitting for CO_2. PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. All of these buildings must also obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated. These permits, a condition to operation, can be challenged by *anyone* via citizen suit.

The electric power sector may also be subjected to new source performance standards (NSPS) for equipment, set by EPA and enforced by states.

WARNING: EPA acknowledges that the Clean Air Act is not the appropriate mechanism for regulation of greenhouse gases. However, its staff has pledged to continue down this path until and unless Congress steps in. Congress must pass legislation prohibiting EPA from regulating greenhouse gases under the Clean Air Act.

NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II

Enter the EPA's Regulatory Labyrinth

FOOD PRODUCTION

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a large number of buildings currently not regulated by EPA would be subject to a number of costly and burdensome Clean Air Act Programs. Food production facilities do not escape the labyrinth.

Food production facilities (canneries, sugar refineries, breweries and distilleries, frozen fruit and vegetable manufacturers, corn mills, meat packing facilities, etc.) 3,400 square feet and greater would be subject to Prevention of Significant Deterioration (PSD) permitting requirements. ***All of the buildings in this sector could be forced to obtain a PSD permit prior to new construction or modifications.***[1]

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could ultimately serve as a deterrent to new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. All of the buildings in this sector would also have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated and they may be subject to new source performance standards (NSPS) for equipment, set by EPA and enforced by states.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

Enter the EPA's Regulatory Labyrinth

HEALTH CARE SECTOR

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a large number of buildings currently not regulated by EPA would be subject to a number of costly and burdensome Clean Air Act Programs. The health care sector does not escape the labyrinth.

Health care facilities (hospitals, nursing homes, etc.) 51,000 square feet and greater would be subject to Prevention of Significant Deterioration (PSD) permitting requirements. Approximately 92,000 buildings in this sector—***over 70 percent of all health care facilities in the United States***—could be forced to obtain a PSD permit prior to new construction or modifications.[1] The Act allows states to exempt some nonprofit health care facilities, but private institutions do not escape PSD.

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could ultimately serve as a deterrent to new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. An even greater number of health care facilities—perhaps all of them—would have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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Enter the EPA's Regulatory Labyrinth

HOTELS, MOTELS AND OTHER LODGING

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a large number of buildings currently not regulated by EPA would be subject to a number of costly and burdensome Clean Air Act Programs. Hotels, motels and other lodging facilities do not escape the labyrinth.

Hotels, motels and other lodging facilities 81,000 square feet and greater will be subject to Prevention of Significant Deterioration (PSD) permitting requirements. Approximately 71,000 buildings in this sector—***50 percent of all lodging in the United States***—could be forced to obtain a PSD permit prior to new construction or modifications.[1] PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies.

The list does not end here. An even greater number of hotels and motels will have to obtain Title V operating permits from EPA, and some may even be forced to comply with solid waste combustion performance standards for greenhouse gases.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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Enter the EPA's Regulatory Labyrinth

HOUSES OF WORSHIP

If EPA regulates greenhouse gases under the Clean Air Act, a great deal of buildings currently not regulated by EPA will now be subject to a number of costly, burdensome Clean Air Act Programs. Houses of worship (churches, synagogues, mosques, etc.) do not escape the labyrinth.

As a result of their heating and energy costs, houses of religious worship 150,000 square feet and greater emit enough CO_2 to make them subject to Prevention of Significant Deterioration (PSD) permitting requirements. ***Roughly 37,000 buildings in this sector could be forced to obtain a PSD permit prior to new construction or modifications to their buildings.***[1]

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could deter new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. An even greater number of houses of worship will also have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated. These permits, a condition to operation, can be challenged by *anyone* via citizen suit. It is conceivable that the issuance of many Title V permits for CO_2 will be held up while citizen suits are adjudicated.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity

U.S. Chamber of Commerce
For more information, go to www.uschamber.com/assets/env/anpr.pdf

EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

Enter the EPA's Regulatory Labyrinth

INDUSTRIAL BOILERS

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to force industrial boiler manufacturers, owners and operators to:

- Adopt work practice standards to minimize excess air or exhaust temperatures;
- Incorporate equipment standards for installation of economizer and air preheaters;
- Use different fuels or co-fire biomass with fossil fuels;
- Assure early retirement of high-GHG emitting boilers;
- Adopt numerical efficiency standards;
- Decrease fuel usage per unit of output; and
- Use prescribed metrics for measuring and benchmarking boiler GHG emissions.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

MOTORCYCLES

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, the Environmental Protection Agency (EPA) argues it has the authority under the Clean Air Act to force motorcycle manufacturers, parts suppliers and operators to:

- Change the size and performance of motorcycle engines;
- Replace carburetors with electronic fuel injection;
- Eliminate two-stroke engines in the scooter category;
- Design and optimize motorcycles to increase efficiency, possibly at the expense of performance;
- Use different fuels; and
- Lower idle speeds.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

U.S. Chamber of Commerce
For more information, go to www.uschamber.com/assets/env/anpr.pdf

EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

NONROAD ENGINES AND EQUIPMENT

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to force manufacturers, operators and parts suppliers of nonroad engines and equipment (farm equipment, all-terrain vehicles, lawnmowers, etc.) to:

- **Redesign the equipment or vehicle that the engine powers so that the nonroad application expends less energy;**
- **Use advanced lubricants and electronic controls;**
- **Redesign engines to incorporate technologies that produce less GHGs, such as homogeneous charge CI, waste heat recovery through turbo compounding, and direct fuel injection in SI engines;**
- **Add automatic engine stop start (AESS) systems;**
- **Reduce idling;**
- **Eliminate two-stroke engines and switch to four-stroke engines;**
- **Implement regenerative energy recovery systems;**
- **Install hybrid power trains or CVT transmissions;**
- **Install new lighting technologies;**
- **Increase consumer awareness; and**
- **Comply with GHG standards, such as gram-per-ton or gram-per-mile.**

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

OFFICE BUILDINGS

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a great deal of buildings currently not regulated by EPA will now be subject to a number of costly, burdensome Clean Air Act programs. Office buildings do not escape the labyrinth.

Office buildings 170,000 square feet and greater will be subject to Prevention of Significant Deterioration (PSD) permitting requirements. Approximately 260,000 buildings in this sector—***almost one-third of all office buildings in the United States***—could be forced to obtain a PSD permit prior to new construction or modifications to their buildings.[1]

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could ultimately serve as a deterrent to new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. An even greater number of office buildings—perhaps as many as 50 percent—will have to obtain Title V operating permits from the EPA.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

REFINERIES

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to regulate refineries in the following ways:

- Adoption of flare gas recovery and delayed coker depressurization work practice standards;
- Numerical efficiency standards;
- Improvements within facilities that demonstrate achieved reductions through GHG tracking and reporting;
- Prescribed metrics for measuring and benchmarking boiler GHG emissions;
- Equipment standards for variable speed motors and combustion air preheater designs for process heaters;
- Prescribed metrics for measuring and benchmarking boiler GHG emissions;
- Process-specific refinery efficiency targets; and
- Combinations of the above approaches.

If EPA decides to regulate greenhouse gas emissions, ***all refineries will be subject to Prevention of Significant Deterioration (PSD) permitting for CO_2.*** PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. All refineries will also have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated. These permits, a condition to operation, can be challenged by *anyone* via citizen suit. Lastly, refineries may also be subjected to greenhouse gas new source performance standards (NSPS) for equipment, set by EPA and enforced by states.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

SCHOOLS

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a large number of buildings currently not regulated by EPA would be subject to a number of costly and burdensome Clean Air Act Programs. Schools and other educational facilities do not escape the labyrinth.

Educational facilities (i.e., colleges, universities, private schools) 120,000 square feet and greater will be subject to Prevention of Significant Deterioration (PSD) permitting requirements. Approximately 100,000 buildings in this sector—***roughly one-quarter of all educational facilities in the United States***—could be forced to obtain a PSD permit prior to new construction or modifications.[1] The Act allows states to exempt some nonprofit educational facilities, but private institutions do not escape PSD.

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could ultimately serve as a deterrent to new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. An even greater number of educational facilities—perhaps as many as 40 or 50 percent—will have to obtain Title V operating permits from EPA .

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

SMALL BUSINESSES

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to force small businesses, for the first time, to:

- Spend as much as tens of thousands of dollars to obtain special "Prevention of Significant Deterioration" permits when they want to construct a building or make modifications to their operations;
- Spend as much as tens of thousands of dollars to obtain "Title V" operating permits to continue to operate their businesses;
- Limit their ability to grow or add locations;
- Limit the use of business vehicles like delivery trucks or company cars;
- Switch to more expensive fuels and energy; and
- Limit or modify their day-to-day operations at the direction of EPA.

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

TEXTILE MILLS

If EPA regulates greenhouse gases under the Clean Air Act, a great deal of buildings currently not regulated by EPA will now be subject to a number of costly, burdensome Clean Air Act Programs. Textile mills do not escape the labyrinth.

As a result of their energy costs, textile mills 8,800 square feet and greater emit enough CO_2 to make them subject to Prevention of Significant Deterioration (PSD) permitting requirements. ***All of the textile mills in the U.S. could be forced to obtain a PSD permit prior to new construction or modifications to their buildings.***[1]

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could deter new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. Textile mills may be subject to new source performance standards (NSPS) for equipment, set by EPA and enforced by states. All textile mills in the U.S. will also have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated. These permits, a condition to operation, can be challenged by *anyone* via citizen suit.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

TRAINS

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, EPA believes it has the authority under the Clean Air Act to force locomotive manufacturers, parts suppliers and operators to:

- **Redesign engines, wheel assemblies, and refrigeration equipment and comply with strict engine emission standards;**
- **Utilize hybrid diesel technology and accommodate space on tenders for huge battery banks;**
- **Incorporate dynamic braking systems, low-friction wheel bearings, electronically controlled pneumatic brakes and modified transmission systems;**
- **Reduce equipment weight and modify locomotive and rail car aerodynamics;**
- **Comply with emissions per unit of travel and other emission standards;**
- **Use different fuels;**
- **Modify rail yard infrastructure;**
- **Assure early retirement of high-GHG emitting locomotives;**
- **Reduce engine idling;**
- **Maximize trip loads and reduce empty car trips; and**
- **Incorporate GPS based system management procedures.**

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NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR

Enter the EPA's Regulatory Labyrinth

TRUCKS

In its Advance Notice of Proposed Rulemaking (ANPR) for greenhouse gas emissions, the Environmental Protection Agency (EPA) argues it has the authority under the Clean Air Act to force heavy-duty truck manufacturers, parts suppliers and operators to:

- Change truck design, including aerodynamics, tire rolling resistance, drivetrain and weight;
- Install turbochargers;
- Engine improvements, including increased cylinder pressure, waste heat recovery, and low viscosity lubricants;
- Modify air conditioning systems;
- Use different fuels;
- Use hybrid technologies, both electric and hydraulic;
- Drive slower, and install speed limiters;
- Install automatic tire inflation systems; and
- Change idling time and operation.

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Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity

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EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD CAFE RACT BACT Non-attainment Conformity Endangerment Class I Class II EPA ANPR NSR NSPS HAP NAAQS SIP CO_2 PSD

Enter the EPA's Regulatory Labyrinth

WAREHOUSE AND STORAGE

If the Environmental Protection Agency (EPA) regulates greenhouse gases under the Clean Air Act, a large number of buildings currently not regulated by EPA would be subject to a number of costly and burdensome Clean Air Act Programs. Warehouses and storage facilities do not escape the labyrinth.

Warehouse and storage facilities 290,000 square feet and greater would be subject to Prevention of Significant Deterioration (PSD) permitting requirements. Approximately 150,000 buildings in this sector—***25 percent of all warehouse and storage facilities in the United States***—could be forced to obtain a PSD permit prior to new construction or modifications.[1]

PSD permits are costly, take months (or even years) to complete, and can require the owner to install new, emissions-limiting control technologies. PSD could ultimately serve as a deterrent to new construction and new business in this country and would be yet another blow to an economy that is already running on fumes.

The list does not end here, however. An even greater number of warehouses and storage facilities—perhaps 50 percent or more—would have to obtain Title V operating permits from EPA one year from the date greenhouse gases become regulated.

[1] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," performed for the U.S. Chamber of Commerce September 2008; Mark P. Mills, Strategic Advisor/Analyst.

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The Chairman. Thank you. And now, last but not least, Marlo Lewis, Senior Fellow, Competitive Enterprise Institute. Welcome, sir.

STATEMENT OF MARLO LEWIS, SENIOR FELLOW, COMPETITIVE ENTERPRISE INSTITUTE

Mr. LEWIS. Chairman Boxer, Ranking Member Inhof, Senator Whitehouse. Thank you for——

The Chairman. Is your mike on?

Mr. LEWIS. Sorry. Thank you for the opportunity to testify. When Massachusetts versus EPA was being litigated, Plaintiffs denied that the case posed any risks to the economy. They derided all talk of slippery slopes and GDP losses as alarmist. Yes, they said an endangerment finding under Section 202 would require EPA to set new motor vehicle emissions standards, and, yes, such standards could have the effect of tightening fuel economy regulation, but, they said, EPA would be constrained by Section 202's requirement to consider compliance costs. At worst, we'd all save money at the gas pump.

Well, such assurances now ring hollow, thanks to several congressional testimonies by attorney Peter Glazer, the advance notice of proposed rulemaking, and the recent U.S. Chamber study, it is now clear that the remedy sought by plaintiffs in Massachusetts could trigger economy chilling regulation under the Prevention of Significant Deterioration program and the National Ambient Air Quality Standards program.

EPA could be compelled to make massive changes in U.S. environment—environmental policy, energy systems, and economy, changes far more costly than any proposed in the Lieberman-Warner legislation which this Chamber did not see fit to pass.

Even in regard to fuel economy, an endangerment finding could constrain EPA to regulate far beyond the point where Congress indicated it should stop. According to the ANPR, the fuel economy and renewable fuel standards Congress enacted in 2007 in the Energy Independence and Security Act will provide only 25 percent of the transport's sector's proportional contribution to meeting President Bush's climate goal of no emissions growth after 2025.

Climate activists spurn Mr. Bush's goal as too weak. From the perspective of those who sued EPA in the Massachusetts case, EISA is an apple cart that needs to be upset. Both the ANPR and plaintiffs offer options to avoid or limit potential PSD and NAAQS burdens, arising from the Massachusetts case.

These options involve questionable legal theories. For example, my friend, Mr. Bookbinder, and his colleague, David Doniger, would resuscitate a legal theory that Mr. Doniger's organization, the Natural Resources Defense Counsel, successfully sued to overturn in 1976 in the case of NRDC v. Train.

This is the theory propounded by then EPA Administrator, Russell Train, that EPA can avoid initiating a NAAQS rulemaking just by not planning to do the paper work. The ANPR suggests EPA could invoke the doctrine of administrative necessity to justify limiting the number of stationary sources subject to PSD regulation.

Ironically, the ANPR cites a 1979 case, Alabama Power Company versus Cossil, in which the D.C. Circuit Court of Appeals shot

down an EPA attempt to limit the number of PSD regulated entities, based on the administrative necessity doctrine. Recent cases overturning EPA's Clean Air Mercury Rule and Clean Air Inter-State Rule suggest that EPA's ability to improvise around the law is quite limited.

Besides, these artful dodges are a reflection on the Clean Air Act as an instrument of climate policy. The purpose of the proposed simplifications is not to improve environmental protection, but to get around the law. At best, irrational burdens would be minimized, not avoided, small entities would still have to file new paperwork.

Congress did not intend for Section 202, which deals solely with motor vehicle emissions, to create an overwhelming road block to new investment in thousands of previously unregulated buildings and facilities, nor did Congress intend for Section 202, which requires EPA to consider costs when setting tailpipe standards, to trigger the most expensive NAAQS rulemaking in history, yet those policy disasters become real risks if EPA tries to pound the square peg of climate policy into the round hole of the Clean Air Act.

The Clean Air Act is a flawed, unsuitable, potentially destructive instrument for regulating greenhouse gases. If the issues raised in the ANPR had been squarely before the justices back in April, 2007, they might well have decided Massachusetts differently, and we would not even be having this hearing today. Thank you, again. I would be happy to address any questions.

[The prepared statement of Mr. Lewis follows:]

TESTIMONY OF MARLO LEWIS
ON GREENHOUSE GAS REGULATION UNDER THE CLEAN AIR ACT

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SEPTEMBER 23, 2008

My name is Marlo Lewis. I am a senior fellow at the Competitive Enterprise Institute, a free-market, non-profit public policy group. I have been active in the debate on carbon dioxide and the Clean Air Act for nearly a decade. For example, in the 106th Congress, I served as staff director for Rep. David McIntosh (R-IN) when he held the first congressional hearing on the issue and engaged EPA General Counsel Gary S. Guzy in a series of oversight letters examining and challenging the Clinton Administration's interpretation of EPA's authority with respect to carbon dioxide.

Let me cut to the chase. I believe we would not be here today if the Justices of the Supreme Court had known back in April 2007, when they decided *Massachusetts v EPA*, what has since become painfully clear: The Clean Air Act is a flawed, unsuitable, and potentially destructive instrument for reducing greenhouse gas emissions.

As EPA's July 2008 Advanced Notice of Proposed Rulemaking (ANPR) documents, because of the Act's multiple interconnections, setting greenhouse gas emission standards for new motor vehicles under Section 202 could trigger massive, economy-chilling regulation under the New Source Review/Prevention of Significant Deterioration (NSR/PSD) and National Ambient Air Quality Standards (NAAQS) programs.

Few Members of Congress would vote to regulate carbon dioxide under the PSD and NAAQS programs, especially in these perilous times of financial chaos and high energy prices. It is inconceivable that those who drafted and enacted the Clean Air Act

intended for it to undermine the economy and jeopardize environmental enforcement. Yet economic devastation and administrative paralysis are real risks if EPA attempts to pound the square peg of climate policy into the round hole of the Clean Air Act.

Is Massachusetts v EPA Good Law?

The proposition that the Clean Air Act authorizes EPA to regulate carbon dioxide emissions was always dubious, which is why four Justices dissented in *Massachusetts*. To begin with, when Congress wants EPA to regulate particular types of substances for particular purposes, it has no trouble making its intent clear. No one disputes whether EPA has authority to regulate ambient air pollutants, hazardous air pollutants, acid rain-forming substances, or ozone-depleting substances. A glance at the major titles of the Clean Air Act dispels any possible doubt about EPA's authority to control those substances. In stark contrast, there is no climate protection title in the Clean Air Act—nothing even remotely comparable to the NAAQS program, the hazardous air pollutant program, the acid rain control program, or the stratospheric ozone protection program.

Indeed, the Clean Air Act is virtually silent about global warming. The terms "greenhouse gas" and "greenhouse effect" appear nowhere in the Act. The terms "carbon dioxide" and "global warming potential" do appear, but only once, each time in the context of a non-regulatory provision, and in each instance followed by a caveat admonishing EPA not to infer authority for "pollution control requirements" (103g) or "additional regulation" (602e). These admonitions would be pointless if, as the Court majority held, authority to regulate carbon dioxide is already contained in the Act's most general provision—the definition of "air pollutant" (302g).

It may seem strange that the nation's most comprehensive environmental law says next to nothing about an issue widely regarded as the biggest environmental challenge in human history. Yet the Act's reticence in regard to global warming actually makes perfect sense, because climate policy remains an issue of intense, *unresolved* controversy.

Public concern about global warming, and congressional support for regulatory climate policy, are certainly much stronger today than in 1970 and 1977, when Congress enacted and amended Section 202 of the Clean Air Act. Yet as recently as June 2008, the Senate failed to pass legislation (the Lieberman-Warner bill) directing EPA to implement a nationwide greenhouse gas control program. The House has never even brought such a bill to floor.

We have been stuck in climate policy stalemate for some time. Vice President Al Gore negotiated the Kyoto Protocol, and President Clinton signed it, but they did not see fit to submit the treaty to the Senate for a debate and vote on ratification.

Going back even further, during deliberation on the 1990 Clean Air Act Amendments, the Senate rejected a committee proposal to establish carbon dioxide emission standards for new motor vehicles. Although the rejected proposal was much like the policy sought by petitioners in the *Massachusetts* case, the Court majority belittled this legislative history, arguing that "post-enactment congressional deliberations and actions" cannot curtail EPA's "pre-existing" authority under Section 202. Well, of course it can't. Nobody ever said that it could. The point, rather, is that it is silly to pretend that in 1970 or 1977—years before Al Gore held his first congressional hearing on global warming—Congress implicitly authorized EPA to adopt regulatory policies that lawmakers in future Congresses repeatedly tried but failed to enact.

EPA's regulatory practice over three decades also counsels against the view that Congress in 1970 or 1977 authorized EPA to regulate carbon dioxide emissions from new motor vehicles as "air pollution." Ponder for a moment the function of those mainstays of mobile emissions control, catalytic converters and oxygenate fuel additives. Since 1970, the overarching objective of EPA regulation of mobile sources was to ensure that automobile engines burn so cleanly that, ultimately, nothing comes out of the tailpipe except two greenhouse gases: carbon dioxide and water vapor.

To reach the conclusion that carbon dioxide is an "air pollutant" for regulatory purposes, the Court majority had to withhold *Chevron* deference from EPA's reasonable reading of Section 302g. This was in fact the lynchpin of the majority's entire argument. Obviously, if *anything* "emitted into" the ambient air is ipso facto an "air pollutant" for regulatory purposes, then carbon dioxide undeniably falls within EPA's regulatory reach. But the Court majority's interpretation of "air pollutant" is problematic. Section 302g is only two sentences long. Here it is, in full:

> The term "air pollutant" means any air pollution agent or combination of such agents, including any physical, chemical, biological, or radioactive (including source material, special nuclear material, and by-product material) substance or matter, which is emitted into, or otherwise enters, the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent that the Administrator has identified such precursor or precursors for the particular purpose for which the term "air pollutant" is used.

As EPA read the first sentence, to be an "air pollutant," a substance must not only be "emitted" into or "enter" the air (the necessary condition), it must also be an "air pollution agent" (the sufficient condition). In other words, the substance must *cause air pollution*—it must dirty, foul, or contaminate the air. In EPA's interpretation, the term "air pollution agent" is a criterion for distinguishing "air pollutants" from non-pollutants. This reading jibes with plain English, as reflected in the very title of the law: *Clean* Air Act. Carbon dioxide does not degrade air quality. By treating the term "air pollution agent" as synonymous with "air pollutant," the Court majority made the first sentence of 302g hopelessly circular ("an 'air pollutant' is an 'air pollutant'"), with the bizarre result that oxygen, water vapor, and even, as Justice Scalia quipped, Frisbees become "air pollutants."

But if the Court majority gave short shrift to "air pollution agent," a key term in the first sentence, it totally ignored second sentence. The second sentence says that a "precursor" of a substance previously designated by EPA to be an air pollutant is also an air pollutant. This sentence would be utterly superfluous if, as the majority held, anything emitted into the air is ipso facto an "air pollutant," because precursors are also emitted. Courts are not supposed to assume that lawmakers pad statutes with superfluous verbiage. Rather, they are supposed to make a good faith effort to determine the meaning and implications of each sentence of each provision bearing on the case. Ignoring half the provision in dispute without explanation is not kosher.

Admittedly, Section 302g is less than crystal clear. Nonetheless, EPA's reading is a defensible one, and under *Chevron*, courts are supposed to defer to EPA's interpretation of an ambiguous provision if that interpretation is a "permissible construction." EPA's

construction is certainly permissible—especially when both sentences of the definition are examined together.

If this seems like quibbles over minutia, then let's look at the big picture. As the ANPR makes clear, setting carbon dioxide emission standards under Section 202 could trigger regulation under numerous provisions of the Act, including an order-of-magnitude expansion of stationary source regulation under the PSD program, and economy-wide regulation of both mobile and stationary sources under the NAAQS program. There is something crazy in the claim that a vague, two-sentence definition of "air pollutant"—the most abstract provision of a law enacted decades ago—mandates wholesale change in the nation's environmental programs, energy systems, and economy.

Would setting carbon dioxide emission standards under 202 compel EPA to regulate tens of thousands of small businesses under the NSR/PSD program?

Attorney Peter Glaser raised this issue in several congressional testimonies.[1] Glaser pointed out that regulating carbon dioxide under any Clean Air Act provision, including Section 202, would also make carbon dioxide a pollutant "subject to regulation" under the Act's NSR/PSD pre-construction permitting program. The ANPR amply confirms the accuracy of this analysis.[2]

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[1] Testimony of Peter Glaser and John Cline, EPA's Approach to Addressing Greenhouse Gases in the Wake of the Supreme Court's Decision in *Massachusetts v. EPA*, House Committee on Oversight and Government Reform, November 8, 2007; Testimony of Peter Glaser, On the U.S. Environmental Protection Agency's Response to the Supreme Court's Decision in Massachusetts v. EPA, House Select Committee on Energy Independence and Global Warming, March 13, 2008; Testimony of Peter Glaser, Strengths and Weaknesses of Regulating Greenhouse Gas Emissions Under Existing Clean Air Act Authorities, Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, April 10, 2008.

[2] EPA, Regulating Greenhouse Gas Emissions Under the Clean Air Act, Advanced Notice of Proposed Rulemaking, *Federal Register*, Vol. 3, No. 147, July 30, 2008, pp. 44355, 44418. Hereafter cited as ANPR.

Under the PSD program, a firm may not build a new "major" stationary source of a regulated pollutant, or modify an existing source (if the modification significantly increases emissions) unless the firm first obtains a PSD permit. A source is defined as "major" if it is one of 28 listed industrial categories and has the potential to emit at least 100 tons per year of the regulated pollutant, or is any other type of establishment and has the potential to emit at least 250 tons per year. Two hundred and fifty tons is a reasonable threshold for regulating smog- and soot-forming emissions, which in that quantity may affect local air quality. However, 250 tons is a miniscule amount of carbon dioxide—too little to have any discernible effect on global temperatures even if multiplied a million times over.

Moreover, whereas only large industrial concerns have the potential to emit 250 tons or more of ambient air pollutants like sulfur dioxide or nitrogen oxides, vast numbers of previously unregulated small entities have the potential to emit 250 tons per year of carbon dioxide. As Glaser explained, "A very large number and variety of buildings and facilities exceed this threshold—including many office and apartment buildings; hotels; enclosed malls; large retail stores and warehouses; colleges, hospitals and large assisted living facilities; large houses of worship; product pipelines; food processing facilities; large heated agricultural facilities; indoor sports arenas and other large public assembly buildings; and many others."[3] The ANPR confirms this assessment, as do the accompanying comments by the Department of Commerce and the Small Business Administration Office of Advocacy.[4]

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[3] Testimony of Peter Glaser, November 8, 2008, pp. 2-3.
[4] ANPR, pp. 44375, 44497-44500.

To obtain a PSD permit, a regulated entity must install "best available control technology" (BACT), which can be very costly. But even apart from the technology controls, PSD permitting can be expensive and time-consuming, because BACT determinations are made on a case-by-case basis through a review "customized to account for the individual characteristics of each source."[5] In Glaser's opinion, "No small business requiring a moderate-sized building or facility heated with fossil fuel could operate subject to the PSD permit administrative burden." He cautions: "...just the administrative burden alone—putting aside any BACT or other requirements that would result from the permitting process—would create an overwhelming and unprecedented roadblock to new investment for a host of previously unregulated buildings and facilities."[6]

The ANPR estimates that, if carbon dioxide becomes a regulated pollutant, the number of entities applying for PSD permits each year would increase by an "order of magnitude"—from about 200-300 permits annually to 2,000 to 3,000.[7] This is likely an underestimate. To begin with, the ANPR assumes that many small entities will opt to enter into agreements with EPA to emit less than their full "potential to emit."[8] For example, an apartment building could pledge not to run its heating unit 24 hours a day during winter months—a promise easily kept. But this means many small firms would have to go through some sort of PSD permitting at least once in order to avoid further regulation.

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[5] ANPR, pp. 44497, 44501.
[6] Glaser, Testimony, November 8, 2008, pp. 3, 12.
[7] ANPR, p. 44499.
[8] ANPR, p. 44501.

Even assuming many firms take this option, EPA's order-of-magnitude estimate is likely off by an order-of-magnitude. Last week, the U.S. Chamber issued a report by Mark and Portia Mills estimating the number of firms *actually emitting* 250 tons of carbon dioxide annually based on fuel purchase data. On average, the report finds, the 250-ton per year threshold is reached when a business uses about $70,000 of oil or natural gas in stationary equipment. Based on U.S. Census and Energy Information data for energy consumption, the authors estimate that roughly 1.2 million businesses actually emit 250 tons of carbon dioxide per year. This number includes at least one million mid-sized to large commercial buildings, nearly 200,000 manufacturing operations, and about 20,000 farms. All these firms could become subject to new PSD regulation, monitoring, controls, and enforcement.[9]

Applying PSD to carbon dioxide has the potential to bring construction activities to a "screeching halt," as the U.S. Chamber wrote in a December 12, 2007 letter to Congress. In addition, applying PSD to carbon dioxide could flood EPA and its state counterparts with PSD permit applications. Environmental agencies could be forced to squander their administrative resources chasing inconsequential carbon dioxide reductions to the neglect of more critical, statutorily required Clean Air Act responsibilities. Alternatively, they might allow an enormous backlog of PSD applications to pile up, effectively suspending the program.

The ANPR proposes a number of fixes to avoid having to permit every firm seeking to build or modify a facility emitting 250 tons of carbon dioxide. One option is

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[9] Portia M. E. Mills and Mark P. Mills, *A Regulatory Burden: The Compliance Dimension of Regulating CO2 as a Pollutant*, U.S. Chamber of Commerce, September 2008, p. 3.

simply to set the cutoff much higher—at 10,000, 25,000, or even 100,000 tons.[10] Another approach is to classify compliance with federal energy efficiency standards as compliance with PSD. But these options flout the letter of the law and would likely be challenged in court.

EPA's justification is an appeal to the doctrine of "absurd results and administrative necessity." EPA explains:

> The Supreme Court has stated that the plain meaning of legislation is not conclusive "in the 'rare cases [in which] the literal application of a statute will produce a result demonstrably at odds with the intentions of the drafters'...[in which case] the intention of the drafters, rather than the strict language controls.[11]

Surely, the drafters never intended for PSD to apply to tens of thousands of small firms, freeze construction activity, or bog down environmental agencies. But the ANPR totally misses the irony here. If a literal application of the Court majority's reading of the definition of "air pollutant" leads to absurd results demonstrably at odds with the intentions of the drafters, then maybe the fault lies with the majority's interpretation.

In any event, betting on courts to uphold EPA rules that flout the plain language of the statute would be a crapshoot. Recent cases—the overturning of EPA's Clean Air Mercury Rule in February and the overturning of EPA's Clean Air Interstate Rule in July—suggest that D.C. Circuit Court of Appeals has little patience with rules that don't strictly adhere to the statute. The court would likely take a dim view of far more blatant attempts to skirt the letter of the law.

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[10] ANPR, p. 44505.
[11] ANPR, p. 44503.

Would an endangerment finding under Section 202 compel EPA to set NAAQS for carbon dioxide and other greenhouse gases?

Before EPA can set vehicle emission standards under Section 202, it must first find that the emissions in question cause or contribute to air pollution that may reasonably be anticipated to endanger public health and welfare. As the ANPR notes, similar endangerment tests occur in other Clean Air Act provisions.[12] Consequently, an endangerment finding for carbon dioxide under Section 202 could compel or authorize EPA to regulate carbon dioxide under several provisions. The most important of these is Section 108, which governs the first phase of a NAAQS rulemaking.

A NAAQS is an allowable pollution concentration standard. It determines how many parts per million (or billion) of a targeted pollutant is permissible in the ambient air. Plaintiffs in *Massachusetts v EPA* argued that current carbon dioxide levels already harm public health and welfare.[13] What would it take to actually reduce atmospheric carbon dioxide concentrations?

The Kyoto Protocol, even if faithfully and fully implemented by all industrial countries, including the United States, would barely slow the increase in atmospheric carbon dioxide concentrations.[14] Many Kyotos would be required to stabilize carbon dioxide concentrations at some level, but actually reducing concentrations below today's levels may well be beyond human capability in this century. Even outright de-

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[12] ANPR, 44418-44420, finds variations on Section 202's endangerment test in Sections 108 (ambient air quality), 111 (pollution from new sources), 115 (international air pollution), 211 (highway and non-road fuels), 213 (non-road engines and vehicles), 231 (aircraft), and 615 (adverse effects on the stratosphere).
[13] "Petitioners injuries are not 'some day' injuries, as respondents contend…; they are injuries in the here and now." Petitioners' Final Reply Brief, Massachusetts v EPA, November 16, 2006, p. 2.
[14] Tom Wigley. 1998. The Kyoto Protocol: CO2, CH4, and climate implications. *Geophysical Research Letters*, Volume 25, Issue 13, pp. 2285-2288.

industrialization of the United States might not be enough to lower atmospheric levels, especially if emerging economies like China and India continue to industrialize, and energy-related U.S. production, jobs, and emissions migrate to those places.

So complying with a NAAQS set below current atmospheric levels would be difficult to achieve even over the course of a century. However, as the ANPR explains, the Clean Air Act requires EPA to ensure that areas designated to be in "non-attainment" with a "primary" or health-based NAAQS come into attainment within five years. EPA has authority to extend the attainment deadline by up to another 5 years, but no later than 10 years after an area is designated as "non-attainment."[15] In this hypothetical situation, of course, the entire country would be one huge non-attainment area.

So if EPA makes an endangerment finding under Section 202, and this triggers the setting of a primary NAAQS, and EPA heeds plaintiffs' argument that current atmospheric carbon dioxide concentrations endanger public health, then EPA would have to achieve in 10 years what may not be achievable in a century even if all nations adopt tough measures to reduce carbon dioxide emissions.

One consequence of the nation's non-attainment with a NAAQS for carbon dioxide is that the U.S. Department of Transportation, pursuant to the Clean Air Act's "transportation conformity" provisions, would have to stop funding all highway projects.[16]

Another consequence is that EPA would have to regulate major stationary sources of carbon dioxide under the non-attainment NSR pre-construction permitting program. This program is similar to the PSD program but differs in three key respects. First, the

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[15] ANPR, p. 44484.
[16] ANPR, p. 44481.

cutoff for regulation is a potential to emit 100 tons for all sources, not 250 as would be the case for many stationary carbon dioxide sources under PSD. Second, before a firm can obtain a non-attainment NSR permit to build or modify a major stationary source, the facility must comply with Lowest Achievable Emissions Rate (LAER) standards, which are more stringent than BACT and do not allow EPA to consider cost when processing permit applications. Third, any emission increases from a new or modified source must be offset by reductions from an existing source in the same non-attainment area.[17] Roughly speaking, nothing could be built or expanded anywhere in the United States unless something else is shut down.

In short, applying the NAAQS program to carbon dioxide—a not unlikely consequence of an EPA finding that carbon dioxide emissions from new motor vehicles endanger public health and welfare—could turn the Clean Air Act into something resembling an economic suicide pact. Set a primary NAAQ for carbon dioxide below current atmospheric levels, and there is virtually no economic sacrifice that could not be demanded of the American people. As the ANPR notes, under established legal interpretation, EPA is forbidden to take costs into account when setting NAAQS.[18]

The ANPR suggests—and some environmental groups argue—that an endangerment finding for carbon dioxide under Section 202 need not compel the agency to initiate a NAAQS rulemaking. Their argument goes as follows. Under Section 108, EPA has to initiate a NAAQS rulemaking only if the pollutant of concern meets three criteria: (1) Emissions of the pollutant are anticipated to endanger public health and welfare; (2) the pollutant is emitted by numerous or diverse stationary and mobile

[17] ANPR, p. 44498.
[18] ANPR, p. 44478.

sources; and (3) the Administrator plans to issue an air quality "criteria" document for the pollutant. Thus, it is alleged, all EPA needs to do to avoid the obligation to "list" carbon dioxide as an air pollutant to be regulated through NAAQS is simply not "plan" to issue a criteria document.[19]

This won't wash. It is tantamount to saying that EPA can avoid the obligation to set NAAQS to control dangerous emissions from numerous and diverse mobile and stationary sources just by declining to do the paperwork!

EPA Administrator Russell Train tried to employ this dodge, claiming that EPA did not have to list lead as an ambient air pollutant, because he had no plans to issue a criteria document for lead. Train's interpretation would gut Title I of the Clean Air Act, as the D.C. Circuit Court of Appeals explained:

> If the EPA interpretation were accepted and listing were mandatory only for substances "for which (the Administrator) plans to issue air quality criteria...", then the mandatory language of §108(a)(1)(A) would become mere surplusage. The determination to list a pollutant and to issue air quality criteria would remain discretionary with the Administrator, and the rigid deadlines of §108(a)(2), §109, and §110 for attaining air quality standards could be bypassed by him at will.[20]

Both David Bookbinder of Sierra Club[21] and David Doniger of NRDC[22] have made this "third criterion" argument at previous congressional hearings. Yet, it was NRDC that

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[19] ANPR, p. 44477.
[20] *NRDC v Train*, 545 F.2d 320, November 10, 1976, paragraph 13.
[21] Testimony of David Bookbinder, Before the House Select Committee on Global Warming, Hearing on Massachusetts v EPA Part II: Implications of the Supreme Court Decision, p. 9
[22] Testimony of David Doniger, Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce, Strengths and Weaknesses of Regulating Greenhouse Gas Emissions Under Existing Clean Air Act Authorities, April 10, 2008, p. 18.

successfully sued EPA in 1976 to overturn Train's interpretation and compel EPA to regulate lead under the NAAQS program. Apparently, it is necessary to revive a discredited legal doctrine and argue that EPA's Section 108 obligations are discretionary in order to claim that regulating carbon dioxide under Section 202 poses no risk of imposing potentially economy-crushing burdens under the NAAQS program.

The ANPR proposes another solution to the NAAQS peril, and it too is questionable. The ANPR says that EPA could issue a "secondary" NAAQS designed to protect "public welfare" from the known or anticipated adverse effects of carbon dioxide emissions but not a "primary" NAAQS designed to protect "public health" with an "adequate margin of safety." The advantage here is that a secondary NAAQS has no statutorily prescribed attainment date. EPA compares this approach to its regional haze program, which aims to achieve natural visibility conditions in the nation's parks and wilderness areas by 2064.[23] In contrast, the Clean Air Act would require states to attain a primary NAAQS for carbon dioxide in 10 years.

To present this option, the ANPR has to make the novel argument that the adverse health effects of climate change are "principally or exclusively welfare-related." According to the ANPR, "increased viability or altered geographical range of pests or diseases; increased frequency or severity of severe weather events including heat waves...are...indirect impacts resulting from these ecological and meteorological changes, which are effects on welfare."[24]

There is some merit to this distinction, but court challenges are easily imaged. If the adverse health effects are what make the ecological and meteorological changes so

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[23] ANPR, p. 44481.
[24] ANPR, p. 44478.

alarming, then litigants may demand that EPA regulate with a view to protecting public health, and not wait until 2064 for relief.

Furthermore, the analogy with regional haze is flawed, because sources of haze are mostly domestic and largely within the power of EPA and the states to control. In contrast, sources of carbon dioxide are global. As the ANPR admits, "...in the absence of substantial cuts in worldwide emissions, worldwide concentrations of GHGs would continue to increase despite any U.S. emission control efforts." In 2064, the United States might be no closer to attaining a secondary carbon dioxide NAAQS than it is today. Even a secondary NAAQS might not be attainable in many decades despite draconian measures whose costs greatly exceed benefits.

Another problem is that non-attainment of a secondary NAAQS would still trigger permitting and offset burdens under non-attainment NSR. EPA and its state counterparts could still face a red ink nightmare, and thousands of affected firms might have to mothball plans to build new facilities or renovate existing ones.

Conclusion

The ANPR leaves little doubt that the Clean Air Act was not designed or intended to serve as a vehicle for regulating carbon dioxide for climate change purposes.

Congress never intended for Section 202, which deals solely with motor vehicle emissions, to instigate a massive expansion of stationary source regulation, much less to depress the construction industry. Yet regulating carbon dioxide under Section 202 could compel EPA and its state counterparts to subject thousands of previously unregulated firms to new PSD regulation, monitoring, controls, and enforcement.

Congress did not intend for Section 202 to overwhelm the administrative resources of EPA and its state counterparts. Yet that could happen if EPA sets carbon dioxide emission standards for new motor vehicles, making carbon dioxide an air pollutant subject to regulation under PSD.

Congress did not intend for Section 202, which requires EPA to consider compliance costs when setting tailpipe emission standards, to leverage money-is-no-object regulation under the NAAQS program. Yet if EPA finds that carbon dioxide endangers public health under Section 202, the logic of Section 108, as interpreted by the D.C. Circuit Court of Appeals in *NRDC v Train*, could compel EPA to do just that.

Above all, Congress never intended for Section 202 to allow litigants and courts to set climate and energy policy for the nation.

President Bush has come under harsh criticism for publishing an ANPR rather than taking the first steps to regulate carbon dioxide under the Clean Air Act. However, it is doubtful that either a President McCain or a President Obama will want to take ownership of the "glorious mess" that EPA regulation of carbon dioxide under the Clean Air Act could create.

The ANPR reminds us of what should have been obvious from the start. Despite appearances, *Massachusetts v EPA* was not really about emission standards for new motor vehicles. Rather, the case was meant to tee up regulatory dominoes to bring about wholesale changes in U.S. environmental programs, energy systems, and the economy. However, changes of such magnitude should not depend on lawyerly disputations over the definition of "air pollutant." Rather, such changes should only be made in full view of the public by the politically accountable branches of government.

Thank you for giving me the opportunity to testify. I would be happy to take questions.

MARLO LEWIS
RESPONSES TO QUESTIONS
FROM THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

December 2, 2008

Questions from Senator James M. Inhofe

1. Your testimony highlights an issue that I think is very important to our often circular discussions and debates under the Clean Air Act, the uncertainty of legal challenges. Can you further comment on the irony, especially considering the recent CAIR and Clean Air Mercury decisions, on how many advocates for regulation under the Clean Air Act are now betting on courts upholding EPA rules that flout the plain language of the statute?

The irony of which Senator Inhofe speaks might also be called self-contradiction or results-oriented jurisprudence. Regulatory advocates alternately argue that EPA's discretion under the Clean Air Act (CAA) is very narrow *and* very broad. They want EPA to have no discretion about whether to regulate greenhouse gases (GHG) under the CAA but lots of discretion about how to regulate GHGs. This is all too convenient. If EPA has no discretion about whether to regulate GHGs, then litigants and courts get to bypass Congress and effectively legislate climate and energy policy for the nation. But if EPA has lots of discretion about how to regulate GHGs, then it can effectively re-write or repeal any CAA regulatory provision that might lead to policy disaster and/or provoke a public backlash if applied straightforwardly to GHGs.

In *Massachusetts v EPA*, both the regulatory advocates who sued EPA and the Court majority took a very narrow view of EPA's discretion under the CAA. They denied that EPA has the discretion not to determine the dangerousness of "air pollution" related to greenhouse gases (GHG). Yet, as Justice Scalia pointed out in dissent, the CAA nowhere says that EPA is required to decide endangerment issues whenever someone files a rulemaking petition. Similarly, they withheld *Chevron* deference from EPA's construction of the term "air pollutant" in §302(g). As my testimony explained, EPA's reading of §302 was a "permissible construction." In fact, plaintiffs' reading, endorsed by the Court majority, turns §302 into a formalism whereby even completely clean air qualifies as an "air pollutant" if it is "emitted." That is absurd.

Yet the same advocates who were happy to deny EPA reasonable discretion where the statute is silent or ambiguous, now claim that EPA may flout statutory language and effectively amend the law in order to avoid the policy disasters to which their strained reading of the CAA leads. Two examples must here suffice, the first having to do with the Act's Prevention of Significant Deterioration (PSD) pre-construction permitting program, the second having to do with the National Ambient Air Quality Standards (NAAQS) program.

Establishing GHG emission standards for new motor vehicles under CAA §202—the immediate policy objective of plaintiffs in *Massachusetts*—would make carbon dioxide (CO_2) a regulated pollutant under the Act. Consequently, any building or facility with a potential to emit 250 tons per year (TPY) of CO_2 would automatically become a "major stationary source" under the PSD program. Before any firm could build or modify such a source, it would first have to obtain a PSD permit and ensure that the new or modified facility complies with "best available control technology" (BACT) standards.

The U.S. Chamber estimates that 1.2 million previously unregulated buildings and facilities actually emit 250 TPY of CO_2.[1] Thus, the moment EPA establishes GHG standards for new motor vehicles, more than 1.2 million previously unregulated buildings and facilities would become vulnerable to new regulation, monitoring, controls, and penalties under PSD. EPA and its state counterparts currently process about 200 to 300 PSD permits per year, and the ANPR acknowledges that even a ten-fold increase to 2,000-3,000 permit applications could "overwhelm" agencies and impose significant new costs on sources.[2] If just 3 percent or 40,000 of 1.2 million facilities that emit at least 250 TPY of CO_2 undertake new construction or modifications in a given year, permitting agencies would choke on their own red tape, and the costs, delays, and uncertainties facing sources would bring construction and economic development to a screeching halt.

This PSD Nightmare is a "red herring," regulatory advocates assure us, because EPA could just pretend that 250 tons really means 10,000 tons. Upping the ante, the ANPR suggests that EPA could set the threshold for PSD regulation at 100,000 tons.[3] So, although regulatory advocates denied EPA the discretion to conclude that Congress never authorized GHG regulation under the CAA, they now endow EPA with the discretion to rewrite the law that Congress enacted.

Plaintiffs in *Massachusetts* claimed the case posed no risks to the economy, arguing, for example, that the NAAQS program is "entirely separate" from the Title II motor vehicle emissions program.[4] Not so. In the first place, as just discussed, establishing GHG emission standards for new motor vehicles automatically triggers PSD

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[1] Mark and Portia Mills, *A Regulatory Burden: The Compliance Dimension of Regulating CO2 as a Pollutant*, U.S. Chamber of Commerce, September 2008.
[2] EPA, Regulating Greenhouse Gas Emissions Under the Clean Air Act, Advanced Notice of Proposed Rulemaking, *Federal Register*, Vol. 3, No. 147, July 30, 2008, 44502, 44507. Hereafter cited as ANPR.
[3] ANPR 44505.
[4] Initial Brief: Appellant-Petitioner at 28, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120).

for major stationary sources of CO_2, and PSD is an essential statutory adjunct of the NAAQS program, its primary purpose being to prevent significant air quality deterioration in NAAQS attainment areas.

More importantly, the first step in establishing both motor vehicle emission standards under §202 and ambient air quality standards under §108 is the same: a finding that the emissions of concern "cause or contribute to air pollution" that "may reasonably be anticipated to endanger public health or welfare." If EPA finds under §202 that GHG-related "air pollution" from new motor vehicles endangers public health or welfare, it could not reasonably find under §108 that GHG-related "air pollution" from "numerous or diverse mobile or stationary sources" do not endanger public health or welfare.

NAAQS are pollution concentration standards, determining how many parts per million (or billion) of the emissions of concern are permissible in the ambient air. Since plaintiffs in *Massachusetts* claimed that current GHG concentrations already harm public health and welfare,[5] NAAQS for GHGs would likely be set below current atmospheric levels. Yet the Kyoto Protocol would only barely slow the increase in atmospheric GHG concentrations.[6] Even an outright de-industrialization program might not be enough to lower atmospheric GHG concentrations. Regulate GHGs under the NAAQS program, and there is in principle no economic sacrifice that could not be demanded of the American people.

Yet regulatory advocates again tell us not to worry. An endangerment finding, they claim, would not compel EPA to establish NAAQS for GHGs. All EPA would have to do is not "plan" to publish the requisite analysis, known as a "criteria document." As my testimony indicated, this is tantamount to saying that EPA can neglect its most important mandatory duty under the CAA just by declining to do the paperwork.

In the 1970s, EPA Administrator Russell Train tried to employ this dodge, claiming that EPA did not have to list lead as an ambient air pollutant, because he had no plan to issue a criteria document for lead. The Second Circuit Court of Appeals rejected Train's argument, explaining:

> If the EPA interpretation were accepted and listing were mandatory only for substances "for which (the Administrator) plans to issue air quality criteria...", then the mandatory language of §108(a)(1)(A) would become mere surplusage. The determination to list a pollutant and to issue air quality criteria would remain discretionary with the Administrator, and the rigid deadlines of §108(a)(2), §109, and §110 for attaining air quality standards could be bypassed by him at will.[7]

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[5] "Petitioners injuries are not 'some day' injuries, as respondents contend...; they are injuries in the here and now." Petitioners' Final Reply Brief, Massachusetts v EPA, November 16, 2006, p. 2.
[6] T.M.L. Wigley. 1998. The Kyoto Protocol: CO2, CH4, and climate implications. *Geophysical Research Letters*, Volume 25, Issue 13, pp. 2285-2288.
[7] *NRDC v Train*, 545 F.2d 320, November 10, 1976, paragraph 13.

It speaks volumes about the validity of the Court majority's opinion in *Massachusetts* that the only way EPA can regulate GHGs under the CAA without creating serious risks of administrative chaos and economic devastation is to assume legislative power and effectively amend the statute.

2. Do you predict that advocates for regulating CO2 under the Clean Air Act will have any more luck than the current administration in finding flexibility under the Act and why?

I do not. All of the administrative contrivances the ANPR discusses involve EPA more or less brazenly assuming legislative power and re-writing the statute. Even if upheld, they would merely reduce, not avoid irrational burdens. I review several of these options in my comment on the ANPR, which I respectfully ask the Committee to include in the hearing record.

One example here should make the problem clear. Under the CAA Title V operating permits program, a major stationary source is any source with the potential to emit 100 TPY of a CAA-regulated pollutant. The Title V program is not supposed to impose new CAA requirements on sources but rather to facilitate compliance with other requirements by consolidating them all in one document. But if EPA establishes GHG emission standards for new motor vehicles, then millions of previously unregulated buildings and facilities would have to go through the Title V process just to demonstrate their compliance with Title V record-keeping and reporting requirements. Nothing could be more pointless or wasteful. The ANPR suggests that EPA could revise the Title V reporting threshold from 100 TPY to 250 TPY, so that at least sources applying for Title V permits would have something else to report—their compliance with PSD requirements.[8] Although this non-legal improvisation might spare millions of small buildings from irrational burden under Title V, it would still leave 1.2 million buildings and facilities potentially exposed to costly, time-consuming, and environmentally irrelevant compliance burdens under the PSD program.

3. Even if advocates for regulating CO2 under the Clean Air Act do not sue to enforce PSD permitting requirements or other Sections of the Act, how does regulating CO2 still potentially invite other lawsuits from non-traditional environmental groups?

Applying PSD to CO_2 would give NIMBY ("Not In My Backyard") activists and interest groups a powerful new litigation tool to block development projects and deter investment in new construction. Anyone who does not want a new strip mall, large house of worship, enclosed sports arena, apartment complex, Walmart, or other large retail chain store moving into his neighborhood could petition EPA and demand that the owner or developer first submit to a BACT determination and obtain a PSD permit before beginning construction. The litigants would need to win only once to establish a precedent compelling EPA to apply PSD to potentially hundreds of thousands of small sources. The mere fact that NIMBY forces can force EPA to apply PSD to apartment

[8] ANPR 44513.

buildings and the like might be enough to scare away significant investment in new construction.

4. Can you explain further how you believe an endangerment finding under Section 202 would compel EPA to set NAAQS for carbon dioxide and other greenhouse gases? In particular, can you further comment on Russell Train's interpretation regarding setting a lead NAAQS?

I partially addressed this in my response to Question 1 above. The language of the endangerment test in §202 is almost identical to that in §108. The only difference is that in the latter, EPA is to assess the dangerousness of "air pollution" from "numerous or diverse mobile or stationary sources," whereas in §202 EPA is to assess the dangerousness of "air pollution" from "new motor vehicles." New motor vehicles are obviously numerous mobile sources, so it's hard to see how EPA could find endangerment under §202 and not find endangerment under §108. The ANPR indicates that EPA would be disinclined to instigate a NAAQS-rulemaking for GHGs. But if EPA makes an endangerment finding under §202, it is likely that at least some litigation groups would petition EPA to establish NAAQS for GHGs.

In 2003, three of the *Massachusetts* petitioners—Attorneys General Thomas F. Reilly of Massachusetts, Richard Blumenthal of Connecticut, and G. Steven Rowe of Maine—filed a notice of intent to sue EPA for failing to initiate a NAAQS rulemaking for CO_2. The three AGs cited *NRDC v Train* as a precedent requiring EPA to list CO_2 as a criteria air pollutant:

> In *Natural Resources Defense Council v. Train* [cit. omitted], the issue was whether the Administrator could be subject to a mandamus action to compel him to list lead as a criteria air pollutant. The Administrator conceded that lead posed a serious risk, but, asserting a preference to exercise his discretion to regulate lead in a different manner, declined to list it. The Court emphatically rejected this approach and held that when it is uncontested that an air pollutant from numerous or diverse sources is contributing to air pollution that "may reasonably be anticipated to endanger public health or welfare," the Administrator has a mandatory duty to list that pollutant pursuant to Section 108.[9]

Reilly, Blumenthal, and Rowe subsequently withdrew their notice of intent to sue when they and other plaintiffs filed the *Massachusetts* petition. Nonetheless, *NRDC v Train* has never been overturned, and the reasoning is cogent. It is not plausible that Congress would authorize EPA to avoid setting NAAQS for dangerous air pollution from numerous or diverse sources just by declining to do the paperwork. This would arguably gut the NAAQS program, often described as the "cornerstone" of the CAA.

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[9] Thomas F. Reilly, Richard Blumenthal, G. Steven Rowe, Notice of Intent to Sue Christine Todd Whitman, Administrator, United States Environmental Protection Agency, Under Clean Air Act §7604, January 30, 2003.

Apparently, the only way EPA can regulate GHGs from new motor vehicles without imperiling the economy is to revive a discredited legal theory and treat mandatory language in §108 as surplus verbiage. This is additional evidence that the Court majority in *Massachusetts* did not examine §202 and §304(g) in their proper context—the CAA *as a whole.*

In a footnote,[10] the ANPR observes that *NRDC v Train* was decided before *Chevron* and wonders whether EPA today might have more discretion to interpret its obligations under §108. This is whistling past the graveyard. *Chevron* did not invalidate all previous decisions pertaining to the scope of EPA's discretion. *Chevron* did not authorize EPA to "bypass at will" the "rigid deadlines of §108(a)(2), §109, and §110 for attaining air quality standards."

[10] ANPR 44477, fn 229.

The Chairman. Well, if—if—but, you know, if—Mr. Lewis and Mr. Kovacs, I hear you well. You're talking to somebody here and my side of the aisle, I know, would much prefer to have legislation than rely on the Clean Air Act, although we do believe there are parts of the Clean Air Act that could be utilized, that, as Mr. Bookbinder said, would not be the tale of horrors that you have alluded to. So, let me just say this, just to get us squared away. Mr. Kovacs and Mr. Lewis, do you support legislation that would reduce greenhouse gas emissions?

Mr. LEWIS. I do not.

The Chairman. And how about you, Mr. Kovacs?

Mr. KOVACS. It's our position that we weren't——

Mr. LEWIS. If you mean by that, regulatory requirements, yes.

The Chairman. I—I—absolutely, yes.

Mr. LEWIS. Then, I'd——

The Chairman. We'd have that part to it, too. You'd have to regulate it right at the source. Yes.

Mr. KOVACS. Legislation is a broad term, but we have said that we would—we are working to try to——

The Chairman. Good.

Mr. KOVACS [continuing]. reduce CO_2 in the atmosphere. Our approach—in fairness, our approach may be different than yours, but we have certainly put a lot of time, effort, and thought into how it would be done.

The Chairman. Well, how is your approach different from the U.S. Climate Action Partnership? Here's what they say. U.S. Climate Action Partnership is a group of businesses and leading environmental organizations that have come together to call on the Federal Government to quickly enact strong national legislation to require significant reductions of greenhouse gas emissions. U.S. CAP has issued a landmark set of principles and recommendations to underscore the urgent need for a policy framework on climate change.

Mr. Kovacs, how does the Chamber of Commerce stand on U.S. CAP?

Mr. KOVACS. I think the problem that we have with—with U.S. CAP is, is that as they get into the specifics like cap and trade, we have a disagreement with them. We think there are ways that—that it's got to be international in scope, it can't harm the economy, and it's got to be based on technology.

And the Congress has been really excellent in—in trying to work the technology route. I mean, if you look at the last two energy bills, for example, there are about 120 technologies that we should be looking at. There are——

The Chairman. OK, wait, I don't want to get off course. I—yes, I support some of that, too, but I'm trying to just nail this down, and I think Mr. Lewis' was—was an honest answer. AI don't like it, I don't want more regulation.@ That's an odd side beyond today's world, but I appreciate it. I appreciate your honesty. Mr. Kovacs says, AWell, we don't object to legislation, but we don't really agree with U.S. CAP all the way because we——

Mr. KOVACS. We have not traditionally supported the regulatory approach——

The Chairman. OK.

Mr. KOVACS [continuing]. because we do not think it would work.

The Chairman. All right. Good. OK. So, we're getting down to here to where we are. Because it's interesting to me to see some of the businesses that do support U.S. CAP, and I'm going to put this in the record without objection. Alcoa, Boston Scientific, BP, Caterpillar, Chrysler, Conoco, Deere, Dow, Duke, Dupont, Excellon, FPO Group, GE, Pepsi.

So, I want it to be clear. Let the record be clear that a lot of businesses—and this doesn't even go into a lot of Silicon Valley folks who strongly support legislation—because I don't want people to think because the Chamber says in general we don't like new regulations—there's a lot of groups in the business community who actually driving these changes.

And I want to get to the issue at hand, which is the use of the Clean Air Act. Because, frankly, if we don't get legislation, that's what's going to happen. It's going to be the way we go, because the Presidential candidates both agree we have to act.

So, I want to get to what Mr. Bookbinder said here, and then I have a question for Mary Nichols, and that'll be the end of my questions. When you said, let's not scare the local church, the local donut shop, could you expand on what you mean by that? Is the implication there that there's a scare tactic going on? That if EPA acts in any way, it's going to somehow destroy our economy? Could you act—answer that question?

Mr. BOOKBINDER. Yes, Senator Boxer, that is exactly what it is. It is a pure scare tactic that industry is saying if there is any regulation anywhere under the Clean Air Act, that automatically means that the PSD program will become applicable to millions and millions of entities, and the answer is, as I have said, nobody wants those entities regulated.

And I find it extremely hard to believe that given some of the very good ideas that have come out of EPA already, including the idea of general permitting, that we can—that we can avoid that consequence and still focus on the major emitters, the ten thousand tons per year sources. We do not need to go after the churches and Dunkin Donuts.

The Chairman. Mr. Lewis, I—I—whoa, whoa, whoa, 1 second. Let me finish. I will then add time to my—I'm going to add time >cause I have a question for Mary Nichols, but I absolutely will hear from you.

Mr. LEWIS. And—and, just let me just say, it's kind of ironic hearing industry talking about, yes, there's no flexibility under the Clean Air Act, and—and we have to be very careful about the courts. Having spent a lot of time in courts on these things, I—I would be astonished if we wound up in the D. C. Circuit and there is an EPA regulation or clarification saying we're not going—we're going to have a general permit covering all these small sources. They won't have to do anything.

And that was supported unanimously by American business and the environmental community and Congress and everybody else. The D. C. Circuit would overturn that. I—I do not believe that would happen. I—I—yes. If when the courts see everybody coming into agreement on that, they take note of that. They're very practical about these things.

The Chairman. All right. I—I—I'm going to give you a minute.

Mr. LEWIS. OK. Thank you. I think it really doesn't matter what—what we want. I think it matters what the law says. And the logical implications of what the law says.

And the Chamber's study is a very meticulous study. It is not an alarmist study. It's a study by the numbers, and it shows that if you can spend seventy thousand dollars a year on fuel to heat your—your facility, or, as the EPA found, if you have a building that's about sixty eight thousand square feet, then you emit two hundred fifty tons of carbon dioxide year. That's not your potential to emit, that's your actual emissions, and under PSD, you're regulated if your potential to emit.

OK, so, this is not made up stuff, and, you know, EPA does come up with all these interesting simplifications and administrative adjustments. One is this general permit, but there is not provision for a general permit in the PSD provisions. There is in the Clean Water Act. There isn't in this. That is an indication of congressional intent, and all I'm saying is, there is a risk that these small entities would be swept up into this net, and I think it's silly to deny that risk is real.

The Chairman. Would you like to respond very quickly in 20 seconds?

Mr. BOOKBINDER. Yes. The briefest response I can get is, who's going to challenge that rule? Who's going to go out there and say, we want to now regulate all these entities?

The Chairman. Uh-huh.

Mr. BOOKBINDER. Not—not business, not us, not anyone else.

The Chairman. That's a good point. Let me just make the case here, again, your statement of horrors of, you know, the Clean Air Act, of how horrible it is. If you ask most Americans, they'd say, thank goodness, because we couldn't breathe, couldn't go to work, but that's another point.

Let's be clear. I, and the majority on this committee, not everyone, we want to have legislation that deals with this. The point of this hearing is to say, that the EPA has authorities as well, and, you know, clearly, some worry very deeply about this and others say it can be done.

Now, I'm going to ask Mary Nichols to respond to two things, and then I'm going to turn the gavel over to Senator Whitehouse after I finish, and Senator Inhofe will have the floor. Chairman Nichols, I'd like you to respond to, because you are so intimately familiar with the EPA, an example of what could be done similar to what has been done by CARB, that would make some sense, that wouldn't harm, you know, anyone, actually, but, perhaps, actually step up to the plate. You talked about it as low-hanging fruit that could be done pretty quickly.

So, I want—I want to ask you some examples of that low-hanging fruit that you were able to do in California, and the last thing I want you to answer is, if you could talk about the economic opportunities that are presented by moving forward with going after global warming pollution, because I have said it and said it and said it, that in our State, given the horrible situation we have with the mortgage meltdown, even though we are hurting badly, a lot

of jobs are being created because of the laws that you are involved with. Could you talk to those things?

MS. NICOLS. Thank you, Senator. On the first point, the first thing that EPA could do would be to rescind and reverse the decision on the California Waiver, and then proceed toward adopting a similar regulation for the auto industry.

The reality is if the Pavly standards that EPA refused to allow us to enforce were in effect now, consumers would be saving money and the auto industry would be in better shape than they are right now.

I had the opportunity to visit Detroit a couple of weeks ago. I know the companies are hurting. They want money to help them retool. They all talk about the technologies that they intend to bring on line that will meet the needs of consumers who now have gotten the message that because of high gas prices, we don't believe that gas prices are going to plummet again to anything like they were in the past, not as a result of regulation, but as a result of real-world scarcity and economic conditions, and the public needs a chance to buy cars that emit less carbon and also cost less to drive. When we did the Pavly rules, we were thinking that there would be a payback period of maybe 4 years——

The Chairman. Explain what you mean by Pavly. Most people here——

Ms. NICHOLS. I'm sorry. Under California law, because California was given the authority under the Clean Air Act back in 1970 to adopt air quality standards—emissions standards, rather, that are more stringent than Federal standards for new motor vehicles, California passed a law authored by then Assembly member, Fran Pavly, so we always call it the Pavly law, which ordered my agency to adopt long term standards to reduce emissions of greenhouse gases from motor vehicles. The State did that, submitted the regulations to EPA, and in December of last year the Waiver was denied.

That was the discussion that was being had earlier with Mr. Meyers. But the background to that is we know now that, for the first several years of those regulations, the auto companies could comply with those rules without any changes in technology, without breakthroughs, and that for the future, they need to be investing in the creation of cars that are low carbon emitting vehicles, and using technologies that they make available in other parts of the world to help our consumers deal with the high cost of gasoline. So, that's the first thing that they should do.

There are other things that they could do using existing authorities in terms of setting new standards for electricity generation and for greenhouse gases from the fuel supply as well. But, to get to your major point about the benefits and costs of all of this, we have been evaluating the cost of compliance with our state's greenhouse gas law, as—as you indicated earlier.

The California legislature passed a bill that requires us to reach 1990 emissions levels by the year 2020, which is about a 30 percent reduction over business as usual, a challenging standard. But my board has produced a plan for doing that relies primarily, in addition to the auto standards and other auto and transportation related measures, on increased energy efficiency and renewable tech-

nologies, and on this we're not operating alone. We're cooperating with our public utilities commission, our energy commission——

The Chairman. And the point is, the question I had was that on the economy, you feel that it's a positive?

Ms. NICHOLS. The bottom line here is that, based on the economic modeling that we've been able to do for the State domestic product, we see an increase in growth over business as usual because of implementing this law.

We see an increase in jobs overall in the economy, and, of course, we see savings, which we're not trying to monetize at this point in terms of health impact, because the very same measures that we're looking at to achieve these reductions in greenhouse gas emissions are measures that also have the effect of reducing the amount of carbon fuels that are being combusted, being burned, which means that we're also saving air pollution and saving lives.

The Chairman. The reason I ask that is because this is the overriding concern for my colleagues on the other side, which is that this is a disaster waiting to happen, it's going to destroy everything, and I think what you've said here today in very clear terms is, it's just not true. And this debate is, of course, going to continue on and on, but if—but I think it will result in the end in legislation.

I'm giving Senator Whitehouse the gavel. He has a U.S. Senate request to make and then he's going to recognize Senator Inhofe, and I thank everybody. I've got back-up meetings. Thank you.

Senator Whitehouse.

[presiding]. Thank you, Chairman. I would ask unanimous consent to place in the record a letter from the State of Connecticut regarding regulation of greenhouse gases under the Clean Air Act without objection. Senator Inhofe?

Senator INHOFE. Thank you very much.

Senator WHITEHOUSE. The letter shall be submitted.

[The information referred to follows:]

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET HARTFORD, CT 06106-5127
PHONE: 860-424-3001

Gina McCarthy
Commissioner

September 22, 2008

Barbara Boxer, Chairman
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510-6175

Re: ***Full Committee Hearing:***
Regulation of Greenhouse Gases under the Clean Air Act

Dear Chairman Boxer:

I want to thank you for focusing your Committee's attention to the regulation of greenhouse gas emissions under the Clean Air Act. I write informed by my experience developing and implementing numerous efforts in the State of Connecticut and the Northeast region to address the challenges of climate change. While state action is a necessary component of a comprehensive national strategy to reduce greenhouse gas emissions and prepare for unavoidable negative impacts, action at the federal level is a crucial complement. Given the need for urgent action, the Connecticut Department of Environmental Protection supports the call for cooperative federalism initially developed under the authority of the Clean Air Act. The U.S. Environmental Protection Agency (EPA) has the authority and experience to act now under the Clean Air Act to address the challenge of climate change while preserving the states' ability to adopt more stringent and complementary measures.

The Clean Air Act provides a solid foundation for addressing climate change. It is grounded in solid science honed by decades of EPA experience in assessing a vast knowledge base on public health, the environment, technology and economics. It contains an underlying and innovative technology-forcing principle that has led to advances in pollution control technologies. It has the flexibility to address a problem as large as climate change through short term actions and long term strategic planning. It has established mechanisms and methods for inventorying and tracking emissions from pollution sources. It has long experience with multi-stakeholder participation. Finally, and of fundamental importance, the Clean Air Act embodies a form of cooperative federalism that establishes a federal baseline of health and environmental protection for all Americans, while providing states with the flexibility to innovate and accelerate progress beyond federal requirements.

With the solid foundation provided by the Clean Air Act, the near term steps to address climate change at the federal level are straightforward. First, EPA must issue the "endangerment" finding under the Clean Air Act that climate change poses a clear and present danger to human health and welfare. EPA has already prepared the scientific basis for the finding and the vast preponderance of scientific research clearly calls for it.

Barbara Boxer

Second, EPA needs to reverse its decision to deny California's greenhouse gas motor vehicle waiver request and grant California and the fourteen states, including Connecticut, which adopted the program the authority to implement the program. The California program is legally sound, having withstood a challenge by the automotive industry in federal court. Third, EPA must work with states and other expert stakeholder groups to establish guidelines and best practices for economic analysis of climate change mitigation efforts under the Clean Air Act. Fourth, EPA must work with the states to develop and implement the basic accounting mechanisms to inventory and track greenhouse gases. EPA and the states have a long track record of collaborating to develop such information for many clean air programs under the Clean Air Act. EPA should ensure that the development of a federal GHG reporting program builds on the efforts underway at The Climate Registry, and that a federal reporting system is integrated with the emission inventory programs well established under the Clean Air Act and provides data consistency with The Climate Registry.

We do not ask EPA to act ignorant of the challenges. The State of Connecticut has taken decisive action to reduce emissions of greenhouse gases from sources in our state and to work with other states in the region. Such efforts include the following:

- Joining nine other states in the Northeast and Mid-Atlantic to form the Regional Greenhouse Gas Initiative (RGGI). RGGI has established an emissions trading program to reduce carbon dioxide emissions from the power sector 10% by 2018. The first RGGI three-year compliance period begins in 2009 and the initial public auction of allowances is occurring this week;
- Adopting California's motor vehicle greenhouse gas emissions standards and labeling program for the 2009 model year;
- Ranking fourth in the nation in per capita spending on energy efficiency measure and ranking first in a national survey of state energy efficiency programs.
- Avoiding the emission of 1,630,000 tons of carbon dioxide in the years 2000 through 2008 as a result of energy efficiency programs.
- Adopting renewable portfolio standards that require 10% of Connecticut's energy to be supplied from renewable sources by 2010.
- Requiring a 10% reduction in greenhouse gas emissions by 2020 and an 80% reduction by 2050 under recently adopted legislation, Public Act 08-98.
- Planning for the impact of climate change on the state's infrastructure, natural resources, ecological habitats, public health and agriculture so that state agencies and municipalities might prepare appropriate policies, regulations and management tools to adapt to and mitigate harmful climate change impacts.

In addition to producing the anticipated reduction in greenhouse gas emissions, Connecticut's strategies offer increases in energy efficiency, energy independence and renewable energy sources as well as reductions in criteria pollutants. Investment in alternative energy production and energy efficiency technologies will also repower Connecticut's economy, particularly important in difficult economic times.

Barbara Boxer

Despite the benefits of its efforts, Connecticut acting alone or within a region cannot solve the nation's or the globe's climate change challenges. Rapid implementation of a comprehensive national program, built on the experience of Connecticut and other states, is crucial. As set out in the testimony of my colleague Mary Nichols of the California Air Resources Board, the Clean Air Act provides the requisite authority to implement greenhouse gas reduction programs prior to the adoption of a comprehensive federal policy and a cooperative federalism model to inform future climate change efforts.

Thank you for the opportunity to comment on this important topic. If there are any questions regarding this proposal, please get in touch with me at 860-424-3001.

Yours truly,

Gina McCarthy
Commissioner

GM/MAG/mag

Senator INHOFE. I have a unanimous consent request, Mr. Chairman, that I included—we included in the record that a statement from the American Farm Bureau Federation. It—it's very good and it talks about concentrates——

Senator WHITEHOUSE. Without objection it will be included in the record.

[The information referred to follows:]

Statement of the American Farm Bureau Federation

FOR THE RECORD TO:

SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

RE: Regulation Of Greenhouse Gases Under The Clean Air Act

September 23, 2008

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600 Maryland Ave. SW | Suite 1000W | Washington, DC 20024 | p. 202.406.3600 | f. 202.406.3606 | www.fb.org

We thank the committee for holding this hearing on this very important and complex issue. The American Farm Bureau Federation submits this statement for the hearing record. We submit that the Clean Air Act (CAA) in its current form is not an appropriate vehicle for regulating greenhouse gases (GHG)[1], and that its application will have significant and severe consequences on all sectors of the economy, including agriculture.

On July 30, 2008, the Environmental Protection Agency (EPA) published an Advance Notice of Proposed Rulemaking (ANPR) in the *Federal Register* asking for public comment on the regulation of GHG under the CAA. The ANPR was published in response to the Supreme Court decision in *Massachusetts v. EPA* which dealt with a petition to regulate automobile emissions. In order to trigger the regulation of automobile emissions under the Clean Air Act, the EPA must first make a finding that any or all of the GHG endanger public health or welfare.

But it is not that simple. Once an endangerment finding is made, EPA cannot only choose to regulate emissions from automobiles. Rather, there are a number of other provisions of the CAA that are automatically triggered, which EPA cannot ignore. For example, an endangerment finding automatically subjects stationary sources (buildings, facilities, structures) that may emit more than 100 tons or 250 tons of GHG per year to very costly and burdensome permits under the Prevention of Significant Deterioration (PSD) program. This program requires that any new "major" source that may emit more than 100 tons of GHG must obtain a PSD permit, and any existing source that seeks to make any modifications that could increase GHG emissions must also first obtain a PSD permit. The PSD permits require the applicant to comply with Best Available Control Technology as a condition for obtaining the permit.

Also, Title V requires entities that emit, or have the potential to emit, 100 tons per year of a regulated pollutant to obtain a permit for such emissions.

These are just a couple of the programs that would automatically be applied upon an endangerment finding. There are a number of other provisions of the Clean Air Act that do not readily fit GHG regulation, such as the provisions relating to National Ambient Air Quality Standards (NAAQS), and Hazardous Air Pollutants (HAP), that are problematic for agriculture, but are not addressed in this statement for the record. Additional information on these and other CAA provisions that impact agriculture can be provided.

These and other provisions of the CAA that are automatically triggered by an endangerment finding have significant unintended consequences for most sectors of the economy, including agriculture. Despite statements from proponents of CAA regulation that their intention is only to regulate the biggest emitters, the mandatory application of such programs as PSD and Title V makes the reality quite different. For example, EPA estimates that the PSD program alone will regulate not only power plants and factories, but also many office and apartment buildings, schools, hospitals, large churches and even large homes.

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[1] Greenhouse gases include carbon dioxide, methane, nitrous oxide and hydroflurocarbons

Also, for the first time, farms and farm buildings would be regulated under the CAA as a result of an endangerment finding for GHG.

Agriculture is somewhat unique among economic sectors with regard to GHG.

In the first place, agriculture and forestry are or can be a net sink for GHG emissions. That means that agriculture and forestry have the capability to take more GHG out of the atmosphere than they emit. According to the latest EPA inventory of greenhouse gas emissions and sinks,[2] agriculture and forestry emit approximately 7 percent of the U.S. total[3], but in 2005 offset 11.4 percent of the U.S. total.[4] EPA also estimates that agriculture and forestry have the potential to sequester 15 percent to 25 percent of total U.S. emissions.

Any application of the Clean Air Act in its current form will regulate agricultural and forestry emissions, but will not give credit to the amount of GHG sequestered in the soils. The CAA will not regulate net GHG emissions. It makes better sense for GHG regulation to encourage continued and increased sequestration of GHG by agriculture and forestry, rather than by regulating the relatively small percentage of emissions those sectors contribute.

The second unique factor that makes agriculture and forestry different from other sectors is that agriculture and forestry emit relatively little carbon dioxide and emit relatively more methane and nitrous oxide than other sectors. Methane is emitted primarily in beef and dairy operations, but is also emitted in rice cultivation. Nitrous oxide emissions are primarily from fertilizer applications and agricultural soil management activities, but can also result from manure management. Methane and nitrous oxide are more potent GHG than carbon dioxide, but neither one stays in the atmosphere as long as carbon dioxide. A regulatory scheme that is based upon emissions of "carbon equivalents" will therefore impact larger numbers of agricultural producers because it requires less emissions of methane or nitrous oxide to equal a similar amount of carbon dioxide emissions.

Third, many of the emissions associated with agriculture are natural processes for which there is no control technology or mechanism. For example, technology does not exist to prevent enteric fermentation from cows or rice crops. Application of CAA requirements for use of best available technologies has little or no relevance for agriculture in these types of situations.

Against this backdrop, the U.S. Department of Agriculture (USDA) stated in comments to the Office of Management and Budget that regulation of GHG under the current Clean Air Act would mean "dairy facilities with over 25 cows, beef cattle operations over 50 cattle, swine operations with over 200 hogs, and farms with over 500 acres of corn may

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[2] Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005, Environmental Protection Agency (2007)
[3] Id, ES-12
[4] Id. ES-6. Includes sequestration from landfills, urban trees and food scraps.

need to get a Title V permit."[5] For each, this is the threshold number to reach 100 tons of emissions of carbon equivalents per year that triggers the Title V permit requirements. By all standards, these are fairly small operations that will include most of the farms or ranches in the particular category. These are hardly the "large emitters" that proponents of the rule say they will target.

These numbers are only for the number of animals or the acreage in the particular operation. Not included in this total are any emissions from tractors or other farm machinery necessary to maintain operations. Inclusion of these emissions in a Title V program would reduce the size of regulated farms and ranches even more.

Not part of the USDA analysis is the potential impact of the PSD permitting program on farms and ranches. Using the same figures that were derived for the Title V program, any facility housing 25 dairy cows, 50 cattle or 200 swine would require a costly and burdensome PSD permit if it were to expand or be modified. Once GHG come under the Clean Air Act, EPA has no discretion—it must apply PSD to these facilities.

But these are not the only direct impacts to agriculture from Title V or other GHG regulation—these are the only examples that USDA used for their comments. USDA used the Simplified Emissions Inventory Tool (SEIT) [6]to calculate the numbers for dairy, cattle, swine and corn. Applying SEIT to other types of operations indicates that Title V would also apply to operations with 200 sheep, 100 horses and 200 goats. It also indicates that operations of 1000 acres of cotton, 1000 acres of wheat, 250 acres of soybeans, 350 acres of potatoes and 35 acres of rice would also require Title V permits solely by virtue of the GHG emitted from the units of production and not counting emissions from farm machinery needed to produce it.

The Title V permit costs can be significant. For example, a study done by the Mississippi Farm Bureau Federation found that Title V permits alone would cost rice farmers in the state more than $9 million.

This is the wrong approach, especially if the goal is to reduce overall carbon emissions. At least with regard to crop production and forestry operations, the goal should be to encourage farming practices that sequester carbon in the soils and trees instead of imposing additional costs for emissions. As indicated above, agriculture and forestry have the potential to sequester more carbon than they emit, and operations should be encouraged.

A more recent study confirms the significant impacts that agriculture will face from regulation under the current Clean Air Act. Mark and Portia Mills just released a study for the U.S. Chamber of Commerce which studied the impact of carbon dioxide

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[5] Letter to Susan E. Dudley, OMB from the Secretaries of Agriculture, Transportation, Commerce and Energy, July 9, 2008

[6] Copy attached

emissions under the Clean Air Act.[7]The study tries to determine the number of entities that would qualify as regulated "stationary sources" under the Clean Air Act that would trigger PSD requirements. The study used a threshold of 250 tons per year of carbon dioxide emissions, which is the upper level threshold for PSD regulation. The study examined only carbon dioxide emissions, and did not look at methane or nitrous oxide emissions which constitute the bulk of agricultural emissions.

The results are nevertheless striking. The report found "at 250 TPY for CO_2, a total of over one million businesses involved in manufacturing, operating buildings and services, and farming could become subject to new EPA regulations, monitoring, controls and enforcement." By contrast, the current PSD program addresses about 200 permits a year.

Significantly for agriculture, Mills finds that "About 20,000 farms emit enough CO_2 per year to become regulated stationary emissions sources. At the top of the list are greenhouses and nurseries, poultry and egg production, vegetable and melon farms, pig and dairy farms. (Limitations in primary data do not permit a complete analysis, and the number is likely an underestimate" (p. 3 of the report).

Based on CO_2 emissions alone, these farm operations would be subjected to the costly and time consuming PSD process in order to obtain a permit to modify existing structures or to build new structures.

Thus far we have discussed only the direct costs of Clean Air Act regulation on agriculture and forestry. Farmers and ranchers are also intensive users of fuel, fertilizer and energy, and costs for those products would rise as a result of GHG regulation. Modern agriculture is dependent on technologically advanced machinery at every stage of production. These costs would be passed on to farmers, ranchers and other consumers of these products. It is quite likely that the indirect cost increases of these products will more severely impact farmers and ranchers than direct CAA regulation.

This brief survey indicates that the direct and indirect impacts of regulating GHG under the current framework of the Clean Air Act will have significant adverse economic impacts to agriculture and forestry. Moreover, it will not just be the largest producers who will be affected. A large number of small-to mid-size operations would also be subject to very costly permit requirements and other impacts.

The proponents of regulation have said that it is not their intention to regulate these small agricultural producers. An endangerment finding, however, leaves the EPA no choice but to apply provisions like Title V and PSD because those requirements, among others, are automatically triggered by such a finding.

We agree with those people and most of the agencies in the federal government that the current Clean Air Act is the wrong mechanism to regulate GHG. Such regulation would bring unintended consequences that will severely burden an already teetering economy.

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[7] "A Regulatory Burden: The Compliance Dimension of Regulating CO_2 as a Pollutant," Portia M.E. Mills and Mark P. Mills. September, 2008. A copy is attached.

Air pollutants now regulated under the Clean Air Act are local in nature, and their emissions are localized. The sources of those emissions can be easily ascertained, and the localized nature of the emissions makes for easy control.

Greenhouse gases, on the other hand, are global in nature and extent. Emissions do not stay local, but are spread evenly around the earth. There are millions of sources of emissions in every part of the world. Control of one source or set of sources of emissions will have little or no effect, because emitters in other parts of the world will compensate for the reduced emissions and negate any controls. This can be illustrated by application of the NAAQS program, which has been an effective tool in cleaning the air. Unlike other situations, application of NAAQS will automatically place the entire country in non-attainment. The control measures traditionally put into place to bring an area into attainment will not work, because emissions reduced will be replaced by emissions coming from other parts of the world.

The net result is that the American economy, including agriculture, will suffer, with little or no benefit to be seen from Clean Air regulation.

We thank the committee for addressing this important issue, and we look forward to working with the committee to find better solutions.

VOLUME VIII: CHAPTER 8

METHODS FOR ESTIMATING METHANE EMISSIONS FROM FLOODED RICE FIELDS

Review Draft

December 1998

Prepared by:
ICF Incorporated
1850 K Street, NW, Suite 1000
Washington, D.C. 20006

Prepared for:
Greenhouse Gas Committee
Emission Inventory Improvement Program

DISCLAIMER

This document was prepared for the Emission Inventory Improvement Program and the U.S. Environmental Protection Agency by ICF Incorporated, Washington, D.C. This report is intended to be a working draft document and has not been reviewed or approved for publication. The opinions, findings, and conclusions are those of the authors and not necessarily those of the Emission Inventory Improvement Program or the U.S. Environmental Protection Agency. Mention of company or product names is not to be considered an endorsement by the Emission Inventory Improvement Program or the U.S. Environmental Protection Agency.

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Peter Ciborowski, Environmental Protection Specialist, Minnesota Pollution Control Agency
Mike Fishburn, Program Analyst, Texas Natural Resources and Conservation Commission

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TABLES

1

INTRODUCTION

The purposes of the preferred methods guidelines are to describe emissions estimation techniques for greenhouse gas sources in a clear and unambiguous manner and to provide concise example calculations to aid in the preparation of emission inventories. This chapter describes the procedures and recommended approaches for estimating methane emissions from flooded rice fields. Companion chapters describe methods for estimating emissions of methane and other greenhouse gases (carbon dioxide, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride) from a variety of other sources.

Section 2 of this chapter contains a general description of the flooded rice field source category. Section 3 provides a listing of the steps involved in using the preferred method for estimating methane emissions from this source. Section 4 presents the preferred estimation method; Section 5 is a placeholder section for alternative estimation techniques that may be added in the future. Quality assurance and quality control procedures are described in Section 6. References used in developing this chapter are identified in Section 7.

2

SOURCE CATEGORY DESCRIPTION

2.1 EMISSION SOURCES

Most of the world's rice, and all of the rice in the U.S.,[1] is grown on flooded fields. When fields are flooded, aerobic decomposition of organic material gradually depletes the oxygen present in the soils and floodwater, and anaerobic conditions develop in the soils. At that point, methane is produced through anaerobic decomposition of soil organic matter by methanogenic bacteria. However, not all of the methane that is produced is released into the atmosphere. As much as 60 to 80 percent of the methane produced is oxidized by aerobic methanotrophic bacteria in the soils (Holzapfel-Pschorn et al., 1985; Sass et al., 1990). Some of the methane is also leached to ground water as dissolved methane. The remaining non-oxidized methane is transported from the soil to the atmosphere primarily by diffusive transport through the rice plants. Some methane also escapes from the soil via diffusion and bubbling through the floodwaters. Figure 8.2-1 graphically depicts the process of CH_4 production and its emissions.

Rice cultivation is a very small source of methane in the U.S. In 1996, methane emissions from this source are estimated to have been approximately 2.5 million metric tons of carbon equivalent (MMTCE) (U.S. EPA, 1998). This represents approximately 1 percent of total U.S. methane emissions from anthropogenic sources, and about 5 percent of U.S. methane emissions from agricultural sources.

This source category accounts for only some of the many agricultural and forestry activities that emit greenhouse gases. Table 8.2-2 summarizes the agricultural and forestry activities associated with emissions of CO_2, CH_4, and N_2O, and provides a roadmap indicating the chapter in which each activity is addressed.

2.2 FACTORS INFLUENCING EMISSIONS

The water management system under which rice is grown is one of the most important factors affecting methane emissions. Upland rice fields are not flooded[2], and therefore are not believed to produce methane. In deepwater rice fields (*i.e.*, fields with flooding depths greater than approximately 3.3 feet), the lower stems and roots of the rice plants do not transport CH_4, thus blocking this primary pathway of CH_4 emissions. Therefore, while deepwater rice growing areas are believed to emit methane, the quantities released are likely to be significantly lower than in areas with more typical, shallow flooding depths. Also, some flooded fields are drained periodically during the growing season, either intentionally or accidentally. If water is drained

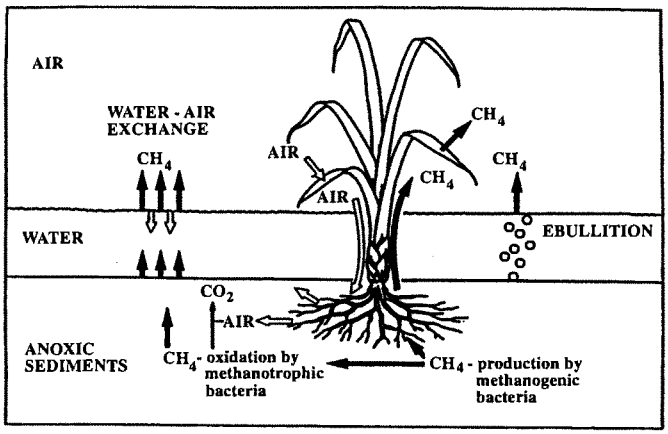
[1] Seven states grow rice: Arkansas, California, Florida, Louisiana, Mississippi, Missouri, and Texas.

[2] Note that all rice-growing areas in the U.S. are continually flooded; none are either upland or deepwater.

and soils are allowed to dry sufficiently, methane emissions decrease or stop entirely. This is due to soil aeration, which not only causes existing soil methane to oxidize but also inhibits further methane production in the soils.

Other factors that influence methane emissions from flooded rice fields include soil temperature, soil type, fertilization practices, rice cultivar selection, and other cultivation practices (*e.g.*, tillage, seeding, and weeding practices). Many studies have found, for example, that methane emissions increase as soil temperature increases. Several studies have indicated that some types of nitrogen fertilizer inhibit methane generation, while organic fertilizers enhance methane emissions. However, while it is generally acknowledged that these factors influence methane emissions, the extent of the influence of these factors individually or in combination has not been well quantified. Thus, the method for estimating emissions is based on a range of measured emissions per unit area of rice field flooding per day.

Figure 8.2-1 Methane Emissions from Rice Cultivation



Source: Schütz, et al. (1988)

Table 8.2-2. GHG Emissions from the Agricultural and Forest Sectors
A check indicates emissions may be significant.

Activity	Associated GHG Emissions and Chapter where these Emissions are Addressed					
	CO_2	Chapter	CH_4	Chapter	N_2O	Chapter
Energy (Farm Equipment)	✓	1	✓	13	✓	13
Animal Production: Enteric Fermentation			✓	6		
Animal Production: Manure Management						
Solid Storage			✓	7	✓	7
Drylot			✓	7	✓	7
Deep Pit Stacks			✓	7	✓	7
Litter			✓	7	✓	7
Liquids/Slurry			✓	7	✓	7
Anaerobic Lagoon			✓	7	✓	7
Pit Storage			✓	7	✓	7
Periodic land application of solids from above management practices					✓	Not included [a]
Pasture/Range (deposited on soil)			✓	7	✓	9
Paddock (deposited on soil)			✓	7	✓	9
Daily Spread (applied to soil)			✓	7	✓	9
Animal Production: Nitrogen Excretion (indirect emissions)					✓	9
Cropping Practices						
Rice Cultivation			✓	8		
Commercial Synthetic Fertilizer Application					✓	9
Commercial Organic Fertilizer Application					✓	9
Incorporation of Crop Residues into the Soil					✓	9
Production of Nitrogen-fixing Crops					✓	9
Liming of Soils	✓	9				
Cultivation of High Organic Content Soils (histosols)	✓	Not included [a]			✓	9
Cultivation of Mineral Soils	✓	Not included [a]				
Changes in Agricultural Management Practices (e.g., tillage, erosion control)	✓	Not included [a]				
Forest and Land Use Change						
Forest and Grassland Conversion	✓	10				
Abandonment of Managed Lands	✓	10				
Changes in Forests and Woody Biomass Stocks	✓	10				
Agricultural Residue Burning			✓	11	✓	11

[a] Emissions may be significant, but methods for estimating GHG emissions from these sources are not included in the EIIP chapters.

3

OVERVIEW OF AVAILABLE METHODS

Methane emissions from rice cultivation can be estimated based on the acreage of rice grown (i.e., flooded) in a state,[3] estimates of the average number of days flooded, and emission factors for the amount of methane emitted per acre-day of flooding.

Note that ranges (low and high values) are used both for the average number of days that rice fields are flooded, and for the methane emissions per acre-day of rice flooding. To develop an estimated range of emissions, the low estimate will be based on the low values for both variables; the high estimate will be based on the high values for both variables.

The methodology described in this chapter is used in developing the U.S. Inventory of Greenhouse Gas Emissions (U.S. EPA 1998). As in the U.S. Inventory, this methodology uses the 1995 IPCC methodology (IPCC 1995). The 1997 IPCC methodology (IPCC 1997) is not used because it requires the use of seasonal emission factors which are not available for the U.S. Seasonal emission factors have not been developed for the U.S. because (1) season lengths are variable both within and among states, and (2) flux measurements have not been taken under all growing conditions in the U.S.

[3] Wild rice is not included in these calculations because it is considered a grain, not a rice variety.

4

PREFERRED METHOD FOR ESTIMATING EMISSIONS

To estimate methane emissions from flooded rice fields, the following steps are required: (1) obtain data on the area of rice fields flooded; (2) estimate the range in the number of acre-days of rice field flooding, and (3) develop the estimated range of emissions. These steps are outlined in detail below.

Step (1) Obtain Required Data

- *Required Data.* The information needed to calculate methane emissions from flooded rice fields is the total area harvested for the study year, and the length of the growing season (both low and high). Table 8.4-1 provides the range of average flooding season lengths by state.

- *Data Sources.* State agencies responsible for overseeing the agricultural sector should be consulted. Agricultural statisticians in each of the seven states in the U.S. that produce rice can be contacted to determine water management practices and flooding season lengths in each state. Alternatively, rice acreage for the major rice producing states can be found in the U.S. Department of Agriculture's annual *Crop Production* report (USDA 1998).

- *Units for Reporting Data.* Rice area flooded should be reported in acres, while the length of the growing season should be in days.

Step (2) Calculate the Number of Acre-Days of Rice Flooding

Within a state, different fields of rice may be flooded for different lengths of time. The number of acre-days flooded annually is equal to:

(the number of acres within a certain cropping cycle length **x** the number of days in that cropping cycle) + (the number of acres with another cropping cycle length **x** the number of days in that cropping cycle) + [continue for all cropping cycle lengths].

The method presented in this chapter uses a simpler approach, based on low and high estimates of the average number of days that rice fields in a given state are flooded.

The climatic conditions of southwest Louisiana, Texas, and Florida allow for a second or "ratoon" rice crop in those areas. This second crop rice is produced from regrowth on the stubble after the first crop has been harvested. Emission estimates for these states should include this additional acre-days for the ratoon crop.

Rice fields for the second crop typically remain flooded for a shorter period of time than for the first crop. Recent studies indicate, however, that the methane emission rate of the second crop may be significantly higher than that of the first crop. The rice straw produced during the first harvest has been shown to dramatically increase methane emissions during the ratoon cropping season (Lindau & Bollich, 1993). It is not clear to what extent the shorter season length and higher emission rates offset each other. As scientific understanding improves, the emission estimates can be adjusted to better reflect these variables. At this juncture, it is recommended that the methane emission factors and flooding season lengths provided here for the primary rice crop be applied to the ratoon crop as well.

Table 8.4-1. Rice Field Flooding Season Lengths by State

State	Flooding Season Length (days)	
	Low	High
Arkansas	75	100
California	123	153
Florida[a] primary ratoon	90	120
Louisiana[a] primary ratoon	90	120
Mississippi	75	82
Missouri	80	100
Texas[a] primary ratoon	60	80

[a] These states have a second, or "ratoon," cropping cycle which may have a shorter flooding season than the one listed in the table. It is recommended that the user apply the same growing season length for both the ratoon and primary cropping cycles.

To calculate acre-days of rice flooding:

- Determine the area flooded for the study year. Those states that have a ratoon crop (Texas, Louisiana, and Florida) should include the area used for this crop in this calculation. Acreage for ratoon cropping has been estimated to account for about 30 percent of the primary crop in Louisiana, 40 percent in Texas (Lindau and Bollich, 1993) and 50 percent in Florida (Schudeman, 1995).

Example In 1996 in Louisiana the primary area harvested was 533,000 acres of rice. The area used for the ratoon crop in Louisiana is 30 percent of the primary area. Therefore, the total area flooded for the length of a growing season may be calculated as follows:

533,000 acres x .30 = 159,000 acres for the ratoon crop

159,000 acres for the ratoon crop + 533,000 acres for the primary crop = **692,000 acres** of rice flooded for the length of a growing season.

- Multiply the area flooded for the length of a growing season by the average number of days in a growing season (low and high estimates) to obtain the range in the number of acre-days that rice was flooded.

  Low Estimate: Area Flooded (acres) **x** Length of Growing Season (days, low estimate) = Acre-days (low estimate)

  High Estimate: Area Flooded (acres) **x** Length of Growing Season (days, high estimate) = Acre-days (high estimate)

Example The number of acre-days that rice was grown in California in 1996 is calculated as follows:

Area Flooded

= 500,000 acres

Low

500,000 acres **x** 123 days = **61,500,000 acre-days**

High

500,000 acres **x** 153 days = **76,500,000 acre-days**

Step (3) Estimate Methane Emissions

The default methane emission factors were obtained from field studies performed in California (Cicerone et al., 1983); Texas (Sass et al., 1990, 1991a, 1991b, 1992); and Louisiana (Lindau et al., 1991; Lindau and Bollich, 1993). A range based on the minimum and maximum emission rates measured in these studies -- 0.43 kg CH_4/acre/day to 2.28 kg CH_4/acre/day -- can be applied

to the areas and season lengths in each state.[4] Since these measurements were taken in rice growing areas of the U.S., they are representative of rice soil temperatures and water and fertilizer management practices typical of the U.S.

- For the low estimate, multiply the number of acre-days that rice was grown (low estimate) by the low estimate of the emission factor (0.43 kg CH_4/acre-day).

  Low Estimate: Number of Acre-Days (low) x 0.43 kg CH_4/acre-day
  = CH_4 Emissions (low) (kg CH_4)

- For the high estimate, multiply the number of acre-days that rice was grown (high estimate) by the high estimate of the emission factor (2.28 kg CH_4/acre-day).

  High Estimate: Number of Acre-Days (high) x 2.28 kg CH_4/acre-day
  = CH_4 Emissions (high) (kg CH_4)

- Divide the results by 1,000 to obtain methane emissions in metric tons. Then multiply by 12/44 (the ratio of the molecular weight of carbon to the molecular weight of CO_2) and by 21 (the global warming potential of methane) to obtain methane emissions in metric tons of carbon equivalent.

Example California's methane emissions from flooded rice fields in 1996 are calculated as follows:

(a)	Avg. Acre-Days	Emissions Coefficient	CH_4 Emissions
low:	61,500,000 acre-days	x 0.43 kg CH_4/acre-day =	26,500,000 kg CH_4/yr
high:	76,500,000 acre-days	x 2.28 kg CH_4/acre-day =	174,600,000 kg CH_4/yr

(b)

low: 26,500,000 kg CH_4/yr ÷ 1000 kg/metric ton x 12/44 x 21 = **152,000 MTCE CH_4**
high: 174,600,000 kg CH_4/yr ÷ 1000 kg/metric ton x 12/44 x 21 = **1,000,000 MTCE CH_4**

[4] Two measurements from these studies were excluded when determining the emission coefficient range. A low seasonal average flux of 0.24 kg/acre-day in Sass et al. (1990) was excluded because this site experienced a mid-season accidental drainage of floodwater, after which methane emissions declined substantially and did not recover for about two weeks. Also, the high seasonal average flux of 8.25 kg/acre-day in Lindau and Bollich (1993) was excluded since this emission rate is anomalously high, compared to other flux measurements in the U.S., as well as in Europe and Asia (see IPCC, 1997).

5

ALTERNATE METHODS FOR ESTIMATING EMISSIONS

No alternate methods have yet been approved by the Greenhouse Gas Committee of the Emission Inventory Improvement Program.

6

QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance (QA) and quality control (QC) are essential elements in producing high quality emission estimates and should be included in all methods to estimate emissions. QA/QC of emission estimates are accomplished through a set of procedures that ensure the quality and reliability of data collection and processing. These procedures include the use of appropriate emission estimation methods, reasonable assumptions, data reliability checks, and accuracy/logic checks of calculations. Volume VI of this series, *Quality Assurance Procedures*, describes methods and tools for performing these procedures.

From field experiments it is apparent that methane emissions from rice fields are affected by many factors. The factors clearly identified by these field experiments are: (1) water levels throughout the growing season; (2) temperature; (3) fertilizer application; (4) soil type; (5) the cultivated variety (cultivar) of rice grown; and (6) agricultural practices such as direct seeding or transplanting. Data show that higher temperature, continuously flooded fields, some types of organic fertilizers, and certain cultivars lead to higher emissions. At present, however, there are insufficient data to incorporate most of these factors. Nonetheless, estimates can be improved substantially by incorporating the current knowledge on the first two factors, namely water levels and temperature. For some states, the effects of organic and mineral fertilizers could be included.

Application of the commercial nitrogen fertilizers ammonium sulfate or urea has generally been found to reduce CH_4 emissions, especially if the fertilizer is deeply incorporated into the soil. This is believed to be due to suppression of CH_4production as a result of the addition of sulfate or ammonium ions. Application of organic fertilizers (*e.g.*, rice straw, composted rice straw, animal wastes), whether or not in combination with mineral fertilizers, has been found to enhance CH_4emissions in most cases. The organic fertilizers provide an additional carbon source for the production of CH_4in the soil.

Water management also influences CH_4emissions since it is only through continuous flooding that paddy soil remains sufficiently anoxic for methane production to occur. Cultivar selection is likely to affect CH_4emissions through two mechanisms: (1) root exudation and (2) gas transport. Many studies have observed two or three maxima in CH_4emissions during the growing season with the last one or two peaks occurring during the reproductive stage of the rice plants. These latter emission peak(s) may be due to peaks in CH_4production that result from the plants providing soil organic bacteria with organic root exudates or root litter at this time (Schütz et al., 1989). The degree of root exudation that occurs is believed to vary between cultivar types. The rice plant also affects CH_4emissions through gas transport mechanisms. Downward oxygen transport through the plant (and subsequent oxidation of CH_4in the rhizosphere) and upward methane transport probably varies between cultivars. Gas transport mechanisms may also play a

role in controlling the latter emission peaks, *e.g.*, methane transport may be more efficient during the reproductive stage of rice plants than at other developmental stages (Sass et al., 1990).

States are encouraged to go beyond the basic method provided here and add as much detail as scientifically justified, based on laboratory and field experiments on how the above factors may influence emissions. For example, states may wish to develop their own emission coefficients, especially if wetland rice is a major crop.[5] Also, where data are available on fertilizer type used, states may wish to incorporate this information into their calculations.[6] If additional detail is included, then state emission inventories should be fully documented, indicating sources for all values used in the calculations.

6.1 DATA ATTRIBUTE RANKING SYSTEM (DARS) SCORES

DARS is a system for evaluating the quality of data used in an emission inventory. To develop a DARS score, one must evaluate the reliability of eight components of the emissions estimate. Four of the components are related to the activity level (e.g., the acre/days of rice field flooding), and the other four are related to the emission factor (e.g., the amount of methane emitted per acre/day of rice field flooding). For both the activity level and the emission factor, the four attributes evaluated are the measurement method, source specificity, spatial congruity, and temporal congruity. Each component is scored on a scale of one to ten, where ten represents a high level of reliability. To derive the DARS score for a given estimation method, the activity level score is multiplied by the emission factor score for each of the four attributes and divided by ten; the results are then averaged. The highest possible DARS composite score is one. A complete discussion of DARS may be found in Chapter 4 of Volume VI, *Quality Assurance Procedures*.

The DARS scores provided here are based on the use of the emission factors provided in this chapter, and activity data from the US government sources referenced in the various steps of the methodology. If a state uses state data sources for activity data, the state may wish to develop a DARS score based on the use of state data.

[5] As discussed above, because of the large variability in methane emissions over the growing season, states should use seasonally-averaged daily emission coefficients (*i.e.*, the seasonal average of average daily emission coefficients based on semi-continuous measurements taken over an entire growing season). See Braatz and Hogan (1991) for a description of appropriate emission measurement techniques.

[6] See IPCC (1997) for information on how to incorporate such data into the calculations.

TABLE 8.6-1

DARS SCORES: CH_4 EMISSIONS FROM FLOODED RICE FIELDS

DARS Attribute Category	Emission Factor Attribute	Explanation	Activity Data Attribute	Explanation	Emission Score
Measurement	2	The emission factor is based on reported values for field measurements of methane emissions from rice fields. The measurements varied widely.	7	The number of acre-days of rice cultivation is estimated based on harvested acreage and low and high estimates of the length of the growing season. The DARS formula does not apply to this scenario.	0.14
Source Specificity	10	The emission factor was developed specifically for flooded rice fields.	5	The activity measured, acre-days of rice cultivation, is somewhat correlated to the emissions activity.	0.50
Spatial Congruity	5	The emission factor was developed for the U.S. as a whole. Field measurements varied between states by as much as two orders of magnitude.	10	States use state-level activity data to estimate state-wide emissions.	0.50
Temporal Congruity	7	The emission factor is based on daily average emissions, presumably over a portion of the growing season. Daily emissions are assumed to vary moderately over the course of a growing season.	10	States use annual activity data to estimate annual emissions.	0.70
				Composite Score	**0.46**

7

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Emission Source Category	Emission Factor Origin / Explanation
Indirect Emissions: Purchased Electricity	EIA / Emission Factor of .606 MT CO2/MWh is the national average electricity emission factor for CO2
Indirect Emissions: Purchased Heat, Steam, and Chilled Water	EIA / Emission Factor of .606 MT/ MWh is the national average electricity emission factor for CO2, 0.178 MT/MMBTU is calculated from .606 based on 3413 BTU = 1 KWh taken from EIA 1605(b) Instructions for Form EIA-1605
Stationary Combustion	All Factors for all fuels are taken from the Technical Guidelines.
Mobile Fuel Combustion - Miles Travelled Method	Derived From EPA estimates
Mobile Fuel Combustion - Fuel Consumptions Method	1605(b) Technical Guidelines
Aluminum Production	IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
Lime Production	Technical Guidelines
Limestone Use	Technical Guidelines
Semiconductor Manufacture	IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
Adipic Acid Production	Technical Guidelines
Ammonia Production	Technical Guidelines
Cement Production	Technical Guidelines
Hydrogen Production	No Factor provide at this time
Iron and Steel Production	Technical Guidelines
Methanol Production	Technical Guidelines
Nitric Acid Production	Technical Guidelines
Soda Ash Production	Technical Guidelines
Soda Ash Use	Technical Guidelines
Magnesium Production	The factor is the GWP for SF6 as the emissions are equal to the amount of SF6 consumed (Tech. Guidelines)
Other (Insert Here)	User will input their own factor
Carbon Black Production	Technical Guidelines
Ethylene Production	Technical Guidelines
Ethylene Dichloride Production	Technical Guidelines
Styrene Production	Technical Guidelines
Coal Mine Methane - Underground Mines	? (Most likely the IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories)
Coal Mine Methane - Surface Mines and Post-Mining Operations	Technical Guidelines
Oil and Gas Industries	IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
Waste and Wastewater	IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
HCFC-22 Production	Technical Guidelines
Other Industrial Use of Hydrofluorocardbons, Perfluorocarbons, and Sulfur Hexafluoride	Factors are based on Consumption of Gases, so the factors are GWP values taken from IPPC Third Editions
Agricultural Emissions	Provided by USDA.

Methane Emissions from Rice in Mississippi

240,000 acres of rice produced in Mississippi (msucares)

Low Estimate = 240,000 x 75 = 18,000,000 acre/days
High Estimate = 240,000 x 82 = 19,680,000 acre/days

CH4 Emissions in kg per year in Mississippi
Low Estimate = 18,000,000 x 0.43 kg CH4/acre-day = **7,740,000 kg CH4/yr**
High Estimate = 19,680,000 x 2.28 kg CH4/acre-day = **44,870,400 kg CH4/yr**

Methane Emissions in Metric Tons of Carbon Equivalent per year (MISSISSIPPI)
Low: 7,740,000 kg CH4/year / 1000 kg/metric ton x 12/44 x 21 = **44,329 MTCE CH4**
High: 44,870,400 kg CH4/yr / 1000 kg/metric ton x 12/44 x 21 = **256985 MTCE CH4**

Our Title V permit is $36/ton now so the low estimate would cost around $1,595,844 and the high estimate would be $9,251,460

*MTCE: Metric Tons of Carbon Equivalent per year

Senator INHOFE. One of the things they talk about in the study done by Mississippi Farm Bureau Federation found that Title V permits alone would cost rice farmers in the State more than nine million dollars, so this we want to be part of the record.

You know, Mr. Chairman, I normally don't bring this up, but since this is probably, hopefully, the last meeting of this nature that we're going to have this year before we adjourn, just let me say this.

I know you three, the majority witnesses, you're very nice people, and I know that you rejoice in this notion that somehow all science is settled and now we can get beyond that and see what we can do to resolve these problems, when, in fact, and I don't blame—I see a sense of panic sometimes in some of these people, because one by one, people who were leaders, Claude Allegro is perhaps the leader, leading scientist in France, who was wanting everyone to sign the Kyoto Treaty. He's now clearly on the other side of the issue now.

David Bellamy from the U.K. was—was one of the top people that was—that was pushing for the—the—the ratifi—Kyoto Treaty. He's now clearly on the other side. Nir Shaviv from Israel, the same thing. And you can go over and over and talk about these people and groups of scientists that have come and said, look, we were wrong on this thing. They're—and besides that, we're in a period of cooling right now, anyway.

So, all these things are going on. And I would also have to say that when you talk about the—the U.S. CAP, it's true there are a lot of businesses in the industries in America and a lot of members of the U.S. Chamber, I would say, Mr. Kovacs, who would stand to make a lot of money if we were to pass a bill like the Lieberman-Warner bill, and I would—I, at one time, I listed all the members and how much they could stand to make on this thing, and I won't do that today, but, nonetheless, we know that's there. The Chairman was talking about to you—well, let me finish that line of reasoning.

There are really three reasons that they could only garner thirty eight votes out of one hundred votes in the U.S. Senate to—to pass if there—if there had been a final passage vote of the Lieberman-Warner. That's one of the reasons. Science is coming in and creating it and certainly it's not settled.

The second one is the cost and I, you know, you can debate that, and I just disagree with you in a friendly way. I say to Ms. Nichols, every evidence I have seen shows how costly this would be.

And third, the fact that you can't do it in isolation. Mr. Bookbinder, I think it would be wonderful if everybody wanted to do this and would go to Copenhagen and they'd hold hands and say, well, we're all going—we're all going follow America, America's the leader. That isn't going to happen.

You know these countries that are where we're having job losses right now. The—the—the National Association of Manufacturers estimated it at some nine and a half million more manufacturing jobs would go to countries like India, China, Mexico, places where they could go ahead and continue if this bill were to pass. Studies have been made and they're legitimate studies. So, you know, that is out there.

And, so, I just want to get on the record that there is not unanimity. I see a lot of panic but not unanimity in this—in these assertions. Now, as far as the U.S. CAP's concerned. about half of those companies were opposed to the Lieberman-Warner bill. About half of them—they actually weren't there in >05, I don't believe, when they had the—the McCain-Lieberman bill. But, the groups—the companies that were supporting them, many of those had an opportunity to—either they're making turbans or doing something else. So, the—Mr. Kovacs, how many businesses does the Chamber represent?

Mr. KOVACS. Within the Federation, it's about three point five million.

Senator INHOFE. And about how many of them, in your view, have never been subject to Clean Air Act permitting requirements before?

Mr. KOVACS. I mean, EPA tells us right now that there are roughly about 15 thousand that are subject to Clean Air Act permitting——

Senator INHOFE. Uh-huh.

Mr. KOVACS [continuing]. requirements.

Senator INHOFE. In your testimony, you indicated that many of the EPA suggested regulatory options would reshape business models and long-term planning for manufacturers' part supplier and vendors. How so?

Mr. KOVACS. The way the Clean Air Act works is that the second that an endangerment finding is made, literally upon implementation of that, which is regulation, PSD permits are required immediately for any new construction, so, literally, that day, the day that regulation starts, permits would—would be required or they could not commence construction or a modification of the—of an existing facility.

Senator INHOFE. Uh-huh. In your testimony, you indicated that Title V would include a citizen's suit provision. Now, can you elaborate on the impacts of this provision, what they would have on businesses?

Mr. KOVACS. Well, right now, Title V applies to the 15 thousand entities that would be regulated by the Act. Under Title V, because the tonnage requirements is only a hundred tons, it would roughly be about 1.2 entities that would have to get a Title V operating permit. An operating permit's just filing paper, but to get it, you're—the citizen's are entitled to bring a citizen's suit literally against each one of the operating permits.

Senator INHOFE. Yes. What do you think of that, Mr. Lewis?

Mr. LEWIS. Yes, I mean, the PSD program is potentially a suffocating blanket on development, and because of the paperwork that you have to go through, there's—just—if you look at EPA's handbook on BACT, Best Available Control Technology, it—it's just—it's a five-step process, very complicated.

So—so, it's—it's a great impediment to a small business constructing or renovating a new facility, even before it gets to installing the control technology, but this—this I think gets to Mr. Bookbinder's point. He asked, well, who would bring a lawsuit to—to apply a strict letter of the law application of PSD to the courts? And I would say, anybody who doesn't like development in his

backyard. Anybody who is upset that Walmart is going to ruin the character of our town will now have a pretext under the Clean Air Act to bollux up that kind of development. So, I think this is—the fear here is real. It's not something to trivialize.

Senator INHOFE. You know,—do you suspect there are a lot of people out there that just—you mentioned development—they don't want development anyway?

Mr. LEWIS. Yes, it's called NIMBY—Not In My Backyard—or BANANAS—Build Absolutely Nothing Anywhere Near Anything. I mean, this is—this is, certainly, a force in local politics, and we all know that people who are clever can figure out how to use litigation under national law to—to change, you know, local development patterns, and, so, I think that would be—I mean, that's the obvious answer to Mr. Bookbinder's question, who would—who would ever want to do this.

Senator INHOFE. But they want to control that. You know, back years ago when I was mayor of the city of Tulsa, there's a guy that was, and it was a republican mayor of San Diego at that time, who had brought in a guy whose name of Dr. Robert Freilich, and I say that to the Chairman, who was going to come in and—and—and put circles around, you know, where—what you could do in these different areas. And they had actually hired him to come and do a plan for the city of Tulsa.

Then I became Chairman of Tulsa, and I just asked a simple question. What about property rights? Do people care about property rights anymore? What do you think, Lewis?

Mr. LEWIS. Well, I know I care, and my wife cares so deeply that she lives in Seal Beach, California. She—she's one of Senator Boxer's constituents, actually, and she is now spending most of her time trying to fight the city council there, which is attempting to, we think, illegally revise the Codes so as to prevent anyone from building a third story on—on—on their own properties. So, yes, I mean, there is this mentality out there that your home and your property is everyone else's business but yours.

Senator INHOFE. Yes, that's right, and this is—you know, one of the problems we have in this Committee is we're from different states. You know, I mentioned I was in Shady Point, Oklahoma, yesterday. Those people don't understand what we could be talking about.

So, you pull coal out of the—that currently supplies fifty 3 percent of the energy needed to run this machine called America, you pull it out of the mix, then how do you run the machine? You know, they—and how do I answer these people? It's difficult to do. Well, I have to say the end of that story was, Dr. Robert Freilich—we did ask him kindly to leave, and he hasn't been back since. So, we had very much concern—let me go a little bit longer because——

Senator WHITEHOUSE. Very briefly, if you don't mind, Senator, because we do have to conclude the hearing and get on to other things.

Senator INHOFE. OK, one last thing. Let me ask you this, Mr. Kovacs. You also have a lot of membership in the agricultural community. Do you—how do you think, just in what kind of answer—

if you want to give a brief answer or elaborate—this would affect your ag constituency and mine?

Mr. KOVACS. I think whether it's ag or industry or commercial, the one point that we—to take it out of the politics and put it in to just the reality and that is, David Bookbinder had said, well, who's going to litigate? The fact is, we all agreed on the CARE decision, and now the D.C. Circuit overturned it.

There is absolutely—there—there—during the Massachusetts versus EPA decision, there was a northeast coalition that was trying to get a NAAQS implemented for CO_2 . The fact is, we don't have any control over this. Someone is going to sue, and everyone—everyone has an equal chance of being impacted.

We're not saying they're all going to be impacted, but what we're saying is, as long as this question remains open, and it shouldn't remain open. David and I agreed. These entities shouldn't be regulated by EPA. But it isn't closed, and if Congress doesn't make the decision, then the courts will.

Senator INHOFE. Thank you, Mr. Chairman. We're still in our Senate Arms Committee, so we'll go down to that one.

Senator WHITEHOUSE. Thank you. I want to thank the witnesses. We're going to conclude in just a moment because I know it—it's 12:30 already. I did want to react to one thing and ask one question. Ms. Nichols, you—you said in your statement that at this point, we all agree that global warming is a national and international crisis, I think was your words. Yes.

I just want to point out that you may be in one of the five buildings in the United States of America in which that's not agreed. This one, the headquarters of Exxon Mobil, the headquarters of the Chamber of Commerce, the Competitive Enterprise Institute, and I'll allow one more for its player to be named later, but I think most people do get it.

And I would note that we had a very interesting witness not too long ago in this Committee, sitting where you are now, who is the chairperson of the organization of all of the health directors of all of the states, and they came in with a very, very powerful substantive statement on the importance of addressing global warming. And just because of what I'm accustomed to around here, I asked her, well, what about the minority report? Should we see that also? She said, there is no minority report.

And I said, you mean the health directors from Oklahoma, from Ohio, from Wyoming, from Idaho, from Tennessee, from Georgia, from Missouri, all of my colleagues here are unanimously agreed to this? And she said, yes. I said, well, how can you explain the difference between people in this building who can't seem to get their heads around this problem with unanimity at your point?

And she very politely said, well, each of us did take an oath to protect the health of the people of our states. So, I think that you may be in one of the few buildings in which people still aren't accepting that this is an important public responsibility we have.

But I do think the American public gets it, and I just wanted to remark on—on that. Mr. Burnett, you talked about the cost of an action, and as you heard in the discussion today, those who wish to ignore this subject run up always the concern about the cost of action. It doesn't strike me that inaction comes free.

And I would be interested in—from any witness, any study, or analysis that you're aware of that we should be looking at in this committee, that tries to calculate the cost of inaction. I can look forward to a day when we will be in a relatively similar situation to the one we're in right now on this financial crisis. And people will look back and say where were you.

And I want to make sure that, when that day comes, I can say, look, I made every argument at my disposal for this thing, so it would be helpful to get information on how to make that economic argument. It strikes me that the—there's an internal cost-shifting issue. And some people will be winners and some people will be losers as a result of a cap and trade system. And it is our responsibility to even that out in well-crafted legislation.

But one thing we know is that reducing our reliance, particularly on foreign oil, will put an end to, or at least reduce, an absolute hemorrhage of our national assets out into the hands and pockets of other nations in what has been described as the greatest transfer of wealth in the history of human kind. And we are on the losing end of that right now.

If nothing else happens, it strikes me that putting an end to that makes our economy stronger and better off. And then we have the internal question of how you reallocate, but that's the way I see it, and Mr. Burnett if you'd let me know if you have any sources to help flesh out the question of the cost of inaction.

Mr. BURNETT. I appreciate the question, Senator, and I would be happy to provide for the record specific sources or—or studies of this sort, but——

Senator WHITEHOUSE. For the record is fine.

Mr. BURNETT. There are basically—I would phrase it as two costs of inaction. The first is that if we do nothing now, we will have to do more later.

Senator WHITEHOUSE. Uh-huh.

Mr. BURNETT. And that will cause a more—a more significant steeper change——

Senator WHITEHOUSE. Sort of like compound interest to put it in economic terms.

Mr. BURNETT. That—that's right. There's many very inexpensive opportunities now, and we should be pursuing those inexpensive opportunities so that we can begin a transition and begin developing the new technologies for a low-carbon economy.

The second cost of inaction are the four costs that I described in my testimony. It's the cost of adapting to climate change. It's the cost because not everybody in society will be able to adapt, and it's the cost to our infrastructure and our natural systems. The natural systems can't adapt at the rate that we're experiencing climate change.

And, finally, other countries will not be able to adapt, and this will impose real security costs on the U.S. and other countries in—that—that have to deal with those security situations as reflected in the recent national intelligence estimate by this Administration. Ms. Nichols, did you want to say something? I'm sorry, I——

Ms. NICHOLS. I was just going to add that the—the most comprehensive study that I know of the cost of inaction was the one that was done by the Stern Commission in Great Britain. It's con-

troversial in various respects, but one thing, in addition to what Mr. Burnett said that I think is striking is a world in which many poorer countries are either under water, suffering from disease, or otherwise unable to make their own economies work is a world in which, for example, U.S. farmers would be less well off because they won't have people to export their products to.

We really are interconnected, and there's no question that a need is there to act globally. What we're talking about here is really looking at measures that the U.S. could take today that are within the realm of what would help us protect ourselves, and I think that's where perhaps there are some differences, whether we think there's any cost at all that's justifiable if there's a benefit that we would experience here directly.

The fact is that we've seen it time and time again that our regulatory system is capable of taking into account the absurdities that people worry about and—and making sure that we don't implement them that way, but, I guess, If you want to justify inaction, you can find reasons to do it.

Senator WHITEHOUSE. Yes. Well, if I—I'm from Rhode Island and we are the Ocean State. I'm told by a friend who's doing some research on my—on one of my predecessors in the Senate from Rhode Island, Theodore Francis Green, that he was once asked, how big is Rhode Island, anyway? And he said, well, that depends. High tide or low tide?

So, when you have a State where that's the kind of way you answer that question, these risks are very, very real risks, and I very much appreciate the—if you want to take a minute and draw us to a conclusion, Mr. Lewis.

Mr. LEWIS. Thank you, Senator Whitehouse. You described the unanimity of all of these health officials on the point that global warming is a clear and present danger to human health.

I would just like to note that means that it is very unlikely that EPA would be able to get away with this—this strategy that they outline in the ANPR of only establishing a welfare or secondary NAAQS under the NAAQS program, having made an endangerment finding about carbon dioxide.

They would have to make a health base primary NAAQS rulemaking, and that means that they would basically have 10 years at most to try to, what? Lower atmospheric carbon dioxide levels below where they are today? An impossible task, even complete deindustrialization of the United States would not accomplish that in 10 years.

Senator WHITEHOUSE. Understood. But you seem to have missed the forest for the trees.

Mr. BURNETT. No, what I'm saying is that the proposed—that—that the claim that we don't have to worry about letting the dominos fall and cleanup——

Senator WHITEHOUSE. Your larger claim though is that we don't have to anything about this.

Mr. BURNETT. No, I never said that. You are putting words in my mouth. I never said that.

Senator WHITEHOUSE. I thought you said that precisely to what should be done.

Mr. BURNETT. No. The question to me was, do I support legislation like McCain-Leiberman or Leiberman——

Warner?

Senator WHITEHOUSE. What would you do?

Mr. BURNETT. My answer is no.

Senator WHITEHOUSE. What would you do?

Mr. BURNETT. Well, right now there are a ton of voluntary programs which, apparently, everybody thinks is inaction, which cost a lot of money. I think we need to do a lot of research. I think there are some deregulatory measures like, for example, we have the highest capital costs penalty under—in our tax system of almost any industrialized country for replacing new equipment—for replacing old equipment with new equipment.

A change in the tax code would—would rapidly accelerate the turnover of capital stock, which is one of the best ways of improving energy efficiency and lowering emissions, at least per unit of GDP.

Senator WHITEHOUSE. Have you read the Tragedy of the Commons?

Mr. BURNETT. Have I read——

Senator WHITEHOUSE. The Tragedy of the Commons.

Mr. BURNETT. Of course. Of course.

Senator WHITEHOUSE. Do you believe that it is——

Mr. BURNETT. There is always—there is always a potential for tragedy in any commons——

Senator WHITEHOUSE. Yes.

Mr. BURNETT [continuing]. but one must understand that regulation creates its own kind of commons, which is the politicization of a resource that also creates the risk of tragedies. My point is not that there are no risks of climate change, but that as I understand the science, the risks of climate change policy far outweigh the risks of climate change itself.

Senator WHITEHOUSE. I think you are in a very, very, very small and eccentric group in having that understanding, and it seems to me that it's extraordinary to imagine if you concede that the Tragedy of the Commons is a legitimate economic principle, it is impossible to see how purely voluntary actions could ever get our arms around the problem. That's the very principle that is at the heart of the Tragedy of the Commons.

Mr. BURNETT. Well, the alternative at this point in time, is to force us to act—to act in a way that assumes we have the technological capability to do something that we in fact can't do. We do not now know how to meet the world's energy needs without fossil fuel.

Senator WHITEHOUSE. There is a great deal that we can do, and I am optimistic about our ability to do it. We are now well over time. I appreciate the witnesses and the hearing is adjourned. There are 2 weeks to add additional testimony to the record.

[Whereupon, at 12:37 p.m., the hearing was adjourned.]

[Additional material submitted for the record follows.]

United States Environmental Protection Agency | Office of Air and Radiation Office of Policy | November 1999 EPA-410-R-99-001

EPA

The Benefits and Costs of the Clean Air Act 1990 to 2010

EPA Report to Congress

November 1999

Pope et al. study is applied in the present analysis, the effect of the potential mis-specification of exposure due to migration in the underlying study is to underestimate PM-related mortality reduction benefits attributable to the CAAA.

Also, Pope et al. only included PM when estimating a C-R function. Because PM concentrations are correlated with the concentrations of other criteria air pollutants (e.g., ozone), and because these other pollutants may be correlated with premature mortality (see Appendix D), the PM risk estimate may be overestimated because it includes the mortality impacts of these confounders. However, in an effort to avoid overstating benefits, and because the evidence associating mortality with PM exposure is stronger than for other pollutants, the 812 Prospective analysis uses PM as a surrogate for PM and related criteria pollutants.

Although we use the Pope study exclusively to derive our primary estimates of avoided mortality, the C-R function based on Dockery et al. (1993) may provide a reasonable alternative estimate. While the Dockery et al. study used a smaller sample of individuals from fewer cities than the study by Pope et al., it features improved exposure estimates, a slightly broader study population (adults aged 25 and older), and a follow-up period nearly twice as long as that of Pope et al. We present an alternative estimate of the premature adult mortality associated with long-term PM exposure based on Dockery et al. (1993) in Chapter 8 and in Appendix D. We emphasize, however, that the estimate based on Pope et al. (1995) is our primary estimate of the effect of the 1990 Amendments on this important health effect.

Health Effects Modeling Results

This section presents a summary of the differences in health effects resulting from improvements in air quality between the Pre-CAAA and Post-CAAA scenarios. Table 5-3 summarizes the CAAA-related avoided health effects in 2010 for each study included in the analysis. The mean estimate is presented as the Primary Central estimate, the 5th percentile observation from the statistical uncertainty modeling is presented as the Primary Low estimate, and the 95th percentile observation is presented as the Primary High estimate of the number of avoided cases of each endpoint.[11] To provide context for these results, Table 5-3 also expresses the mean reduction in incidence for each adverse health effect as a percentage of the baseline incidence of that effect (extrapolated to the appropriate future year) for the population considered (e.g., adults over 30 years of age). In general, because the differences in air quality between the Pre- and Post-CAAA scenarios are expected to increase from 1990 to 2010 and because population is also expected to increase during that time, the health benefits attributable to the CAAA are expected to increase consistently from 1990 to 2010. More detailed results are presented in Appendix D.

Avoided Premature Mortality Estimates

Table 5-3 summarizes the avoided mortality due to reductions in PM exposure in 2010 between the Pre- and Post-CAAA scenarios. As this table shows, our Primary Central estimate implies that PM reductions due to the CAAA in 2010 will result in 23,000 avoided deaths, with a Primary Low and Primary High bound on this estimate of 14,000 and 32,000 avoided deaths, respectively. The Primary Central estimate of 23,000 avoided deaths represents roughly one percent of the projected annual non-accidental mortality of adults aged 30 and older in the year 2010. Additionally, Table 5-4 summarizes the distribution of avoided mortality for 2010 by age cohort, along with the expected remaining lifespan (i.e., the life years lost) for the average person in each age cohort. The majority of the estimated deaths occur in people over the age of 65 (due to their higher baseline mortality rates), and this group has a shorter life expectancy relative to other age groups. The life years lost estimates might be higher if data were available for PM-related mortality in the under 30 age group.

[11] The Primary Low, Primary Central and Primary High health benefit estimates represent points on a distribution of estimated incidence changes for each health effect. This distribution reflects the uncertainty associated with the coefficient of the C-R function for each health endpoint. More information about C-R function uncertainty and the uncertainty modeling that generates the results distributions is presented in Appendix D.

Table 5-3
Change in Incidence of Adverse Health Effects Associated with Criteria Pollutants in 2010 (Pre-CAAA minus Post-CAAA) – 48 State U.S. Population (avoided cases per year)

		2010			% of Baseline Incidences for the mean estimates [a]
Endpoint	Pollutant	5th %	mean	95th %	2010
Mortality					
ages 30 and older	PM	14,000	23,000	32,000	1.00%
Chronic Illness					
chronic bronchitis	PM	5,000	20,000	34,000	3.14%
chronic asthma	O_3	1,800	7,200	12,000	3.83%
Hospitalization					
respiratory admissions	PM, CO, NO_2, SO_2, O_3	13,000	22,000	34,000	0.62%
cardiovascular admissions	PM, CO, NO_2, SO_2, O_3	10,000	42,000	100,000	0.86%
emergency room visits for asthma	PM, O_3	430	4,800	14,000	0.55%
Minor Illness					
acute bronchitis	PM	0	47,000	94,000	5.06%
upper respiratory symptoms	PM	280,000	950,000	1,600,000	0.86%
lower respiratory symptoms	PM	240,000	520,000	770,000	3.57%
respiratory illness	NO_2	76,000	330,000	550,000	10.44%
moderate or worse esthma[c]	PM	80,000	400,000	720,000	0.24%
asthma attacks[c]	O_3, PM	920,000	1,700,000	2,500,000	1.04%
chest tightness, shortness of breath, or wheeze	SO_2	290	110,000	520,000	0.003%
shortness of breath	PM	26,000	91,000	150,000	1.69%
work loss days	PM	3,600,000	4,100,000	4,600,000	0.94%
minor restricted activity days / any of 19 respiratory symptoms[d]	O_3, PM	25,000,000	31,000,000	37,000,000	2.15%
restricted activity days[c]	PM	10,000,000	12,000,000	13,000,000	1.00%

[a] The baseline incidence generally is the same as that used in the C-R function for a particular health effect. However, there are a few exceptions. To calculate the baseline incidence rate for respiratory-related hospital admissions, we used admissions for persons of all ages for International Classification of Disease (ICD) codes 460-519; for cardiovascular admissions, we used admissions for persons of all ages for ICD codes 390-429; for emergency room visits for asthma, we used the estimated ER visit rate for persons of all ages; for chronic bronchitis we used the incidence rate for individuals 27 and older; for the pooled estimate of minor restricted activity days and any-of-19 respiratory symptoms, we used the incidence rate for minor restricted activity days.

[b] Percentage is calculated as the ratio of avoided mortality to the projected baseline annual non-accidental mortality for adults aged 30 and over. Non-accidental mortality was approximately 95% of total mortality for this subpopulation in 2010.

[c] These health endpoints overlap with the "any-of-19 respiratory symptoms" category. As a result, although we present estimates for each endpoint individually, these results are not aggregated into the total benefits estimates.

[d] Minor restricted activity days and any-of-19 respiratory symptoms have overlapping definitions and are pooled.

Non-Fatal Health Impacts

We report non-fatal health effects estimates in a similar manner to estimates of premature mortalities: as a range of estimates for each quantified health endpoint, with the range dependent on the quantified uncertainties in the underlying concentration-response functions. The range of results for 2010 only is characterized in Table 5-3 with 5th percentile, mean, and 95th percentile estimates which correspond to the Primary Low, Primary Central, and Primary High estimates, respectively. All estimates are expressed as new cases avoided in 2010, with the following exceptions. Hospital admissions reflect admissions for a range of respiratory and cardiovascular diseases, and these results, along with emergency room visits for asthma, do not necessarily represent the avoidance of new cases of disease (i.e., air pollution may simply exacerbate an existing condition, resulting in an emergency room visit or hospital admission). Further, each admission is only counted once, regardless of the length of stay in the hospital. "Shortness of breath" is expressed in terms of symptom days: that is, one "case" represents one child experiencing shortness of breath for one day. Likewise, "Restricted Activity Days" and "Work Loss Days" are expressed in person-days.

Avoided Health Effects of Other Pollutants

This section discusses the health effects associated with non-criteria air pollutants regulated by the Clean Air Act Amendments of 1990. It first discusses the effects of pollutants known as "air toxics", and then summarizes the effects associated with stratospheric ozone depleting substances.

Avoided Effects of Air Toxics

In addition to addressing the control of criteria pollutants, the Clean Air Act Amendments revamped regulations for air toxics — defined as non-criteria pollutants which can cause adverse effects to human health and to ecological resources — under section 112 of the Act. Among other changes, the 1990 Amendments establish a list of air toxics to be regulated, require EPA to establish air toxic emissions standards based on maximum achievable control technology (MACT standards), and include a provision that requires EPA to establish more stringent air toxic standards if MACT controls do not sufficiently protect the public health against residual risks. Control of air toxics is expected to result both from these changes and from incidental control due to changes in criteria pollutant programs.

Table 5-4
Mortality Distribution by Age in Primary Analysis (2010 only), Based on Pope et al. (1995)[a]

Age Group	Proportion of Premature Mortality by Age [b]	Life Expectancy (years)
Infants	not estimated	–
1-29	not estimated	–
30-34	1%	48
35-44	4%	38
45-54	6%	29
55-64	12%	21
65-74	24%	14
75-84	30%	9
85+	24%	6

[a] Results based on PM-related mortality incidence estimates for the 48 state U.S. population.
[b] Percentages may not sum to 100 percent due to rounding.

DAVID A. PATERSON
GOVERNOR

ALEXANDER B. GRANNIS
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233-1010

Statement of Pete Grannis
Commissioner, New York State Department of Environmental Conservation
to the Senate Committee on Environment and Public Works
Hearing on Regulation of Greenhouse Gases under the Clean Air Act
September 24, 2008

Dear Chairman Boxer, Ranking Member Inhofe, and distinguished Members of the Committee:

I am writing to express my general support for the testimony on September 23, 2008 of my colleague, California Air Resources Board Chairman Mary Nichols, regarding the authority of the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gases under the Clean Air Act (CAA). Global climate change is probably the single most important challenge facing humanity today. A comprehensive and coherent response to this challenge will of necessity involve a variety of activities undertaken by all levels of government. Although New York supports comprehensive stand alone climate change legislation, the CAA already provides EPA and, by extension, the states with a number of valuable tools for addressing climate change.

Like California, New York State has undertaken a number of innovative actions to address climate change, including participating in the groundbreaking Regional Greenhouse Gas Initiative, which will hold the first-in-the-nation auction of carbon dioxide emission allowances this Thursday, September 25. These activities and multiple other actions taken by the states demonstrate that existing laws can be used effectively to begin addressing climate change. However, state action alone is not sufficient. Due to the scope of the climate change problem, action at the federal level is needed, and it is needed now.

I agree with Chairman Nichols that the CAA can function as a critical bridge to begin the urgent task of reducing greenhouse gas emissions on the federal level, and that the CAA should remain a valuable component of comprehensive federal climate policy in the future. Specifically, as Chairman Nichols explains in her testimony, the CAA can serve two valuable roles, even if a federal cap-and-trade program is enacted. First, given that EPA has authority to regulate greenhouse gases under the CAA now, EPA can begin the task of developing a federal response to climate change without waiting for Congress to enact comprehensive climate change legislation. Second, even if Congress enacts a cap-and-trade program for greenhouse gas emissions, the CAA can serve as a valuable supplement, enabling EPA to enact regulations that fill gaps in the federal legislation, or improve its effectiveness.

I agree with Chairman Nichols that the authority provided EPA by the CAA is flexible, enabling EPA to develop cost-effective measures tailored to the need being addressed. It can also be implemented in a sensible stepwise manner, with the initial focus placed on the power generating and transportation sectors that are responsible, collectively, for most of the nation's greenhouse gas emissions. Given EPA's freedom to move forward in a flexible and sensible manner to make best use of the tools it has available, the "parade of horrors" conjured up by the opponents of carbon regulation is just a baseless diversionary tactic.

The federal-state partnership embodied in the CAA has proven to be effective in reducing air pollution across the United States. New York is ready to work with EPA to make best use of the tools provided by the CAA to reduce the emissions that contribute to climate change.

Thank you for holding this hearing, and please feel free to contact me with any questions you may have on this important topic.

Sincerely,

Pete Grannis
Commissioner

cc: Hon. Charles E. Schumer
Hon. Hillary Rodham Clinton

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