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Executive Summary

ACEEE recommends that the Committee give special focus to energy efficiency's role in climate policy, because of its enormous value as a climate solution and because of its unique characteristics in climate policy design and in the economic impacts of climate policy. We suggest that efficiency should be directly engaged in climate policy by (1) allocating or auctioning allowances and using the proceeds to acquire efficiency resources, and (2) implementing parallel energy policies that tap the maximum potential efficiency can contribute to reducing the cost of climate policy.

Our studies and others have shown that efficiency policies can reduce carbon emissions by up to one-third below reference case forecasts, with net savings to the economy. Yet because efficiency occurs downstream at the end-use level, it is not directly engaged through conventional cap-and-trade policy designs. As an indirect emissions reduction, reducing end-use energy does not assure a 1:1 reduction in upstream emissions. For this reason, efficiency must be tapped through a planned auction or allocation design, and must also be pursued through parallel, complementary policies.

We have studied the record of the economic modeling of climate policy, and find that some models fail utterly to capture the benefits of energy efficiency. By taking too aggregated and simplistic a view, and by overestimating the cost of efficiency, these models produce results that significantly overstate the likely costs of climate policy. Congress should broaden its investigation of climate policy's economic impacts, to better capture the effects of efficiency investment, and to provide a more balanced picture of the benefits and costs of climate policy action.

On the question of upstream vs. downstream regulation, we suggest that while the upstream, all-sectors approach has some appeal in its simplicity and nominal equity, it ignores key sectoral differences, and also does not address the indirect-reduction problem posed by end-use efficiency. We therefore suggest that a hybrid approach be used, setting overall carbon reduction targets, but also using allocation/auction strategies and complementary policies outside the cap. This approach will provide the greatest total carbon reduction at the lowest overall cost, and could produce a climate policy with positive economic impacts.

To reinforce our recommendations, we want to share with the Committee our real-world experience as a stakeholder in the Regional Greenhouse Gas Initiative, the first carbon-cap-and-trade policy to be adopted in this hemisphere. For more than two years, we participated as a stakeholder in the RGGI process, including extensive modeling of its power-sector and regional economic impacts. The modeling results are very encouraging. With a strong commitment to energy efficiency, the RGGI program produces significant carbon reductions with very little impact on energy prices, net economic benefits to the regional economy, and consumer energy bill savings averaging $100/year. That's why seven states signed the Memorandum adopting this policy: it will boost the regional economy while cleaning up the power generation sector. We offer the Committee RGGI as an example of how climate policy can be done right.

Submitter's Name/Affiliation: American Electric Power Service Corporation
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American Electric Power (AEP) Service Corporation appreciates the opportunity to provide comments on the White Paper. The paper contemplates a mandatory regulatory regime for greenhouse gases. While endorsing neither a mandatory regime nor any of the specific proposals in the White Paper, AEP believes it is important to fully engage and comment on discussions of public policy when requested by the Committee. AEP does not support mandatory greenhouse gas emission caps unless they are part of a binding international agreement that includes both developed and developing countries, such as China and India.

AEP believes that any mandatory U.S. greenhouse gas reduction program should be economy-wide and market-based, and allow for unfettered emissions trading. Emissions trading has been used to achieve significant, cost-effective reductions of sulfur dioxide and nitrogen oxides emissions in the U.S. Part of the success of these programs lies in the inclusion of all major emitting sources. Accordingly, AEP believes that the scope of regulation for greenhouse gases should be economy-wide across all the sectors, lowering the total costs of a greenhouse gas reduction program. Utility CO_2 emissions account for only 35-40% of greenhouse gas emissions in the U.S., so including other significant categories of emitters is very important in minimizing the economic impacts of a mandatory reduction program.

We also believe that "downstream" regulation for electric utilities at the power plant, rather than "upstream" regulation on fossil fuel production, is both more effective and administratively efficient. CO_2 reductions are most likely to occur at power plants, through improved production processes, fuel choices, or control technologies. In addition, electric companies already have continuous emission monitors (CEMs) that report annual CO_2 emissions and are already regulated downstream for SO_2 and NOx emissions, as well as engaging in emissions trading within our sector.

AEP feels strongly that the electric sector should receive emission allowances commensurate with its pro rata share of the emission caps in the legislation, whether emissions are regulated upstream or downstream. There should be no or very limited auctions or set asides of allowances. Because the electric sector is largely cost of service, and more than 80 percent of coal fired generation is currently rate regulated, providing less allowances to electric power companies will simply substantially raise electric rates to consumers.

Non-regulated sources of emissions or offsets should be allowed to opt-in and additional allowances should be created (commensurate with the emissions and/or reduction benefit) in order to capture all cost-effective reductions. AEP also supports providing revenues from the sale of backstop price credits to technology R&D and deployment incentives as well as adaptation assistance.

AEP supports linkage with other systems internationally, both in established markets such as the EU and those emerging in other countries around the world. Linkage will help minimize the costs of greenhouse gas reductions in the U.S. The White Paper appears to contemplate a two-step approach with the U.S. acting first followed by other nations. While not endorsing this approach, and believing a comprehensive binding international agreement is necessary, any alternative approach must include provisions to automatically suspend the program at an early point if other nations do not take similar actions.

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Submitter's Name/Affiliation: Steve Walsh/AES Corp.
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AES has provided responses to questions 2 and 3, as summarized below.

Question 2: *Should the costs of regulation be mitigated for any sector of the economy, through the allocation of allowances without cost? Or, should allowances be distributed by means of an auction? If allowances are allocated, what is the criteria for and method of such allocation?*

Allowances that may be allocated as early reduction credits or offsets should not come out of the cap, but should be in addition to the cap. Further, the use of offsets to meet regulatory targets should not be limited (as long as they do not come out of the cap).

Allowances should go to the entities that will bear the costs of complying with the program. Non-emitting sources will not have any additional costs resulting from a Greenhouse Gas (GHG) regulatory program, and in fact should be benefited by the program by increased energy prices. As such, they should not get an allowance allocation.

The electric power industry in the United States has to be considered as consisting of a number of segments (traditional rate-based utility power plants, contract power plants and merchant plants), each of which could be impacted differently by a GHG program. These differences should be factored into the design of any allowance allocation approach.

If it's an "upstream" program, fossil-fired power generators will have increased costs as an artifact of increased fuel prices that, depending on a number of factors, they may not be able to pass through in the price of their electricity. Therefore, should it be an "upstream" program a portion of the allowances should be allocated to fossil-fired electricity generators.

In a "downstream" program, where power plants would be directly regulated, allocations should be fuel-specific. Any allowance allocation method must factor in the need for states to maintain a fuel diverse generation portfolio. A heat input allocation method best provides for maintenance of fuel diversity. However, if an output based approach is adopted, cogeneration units should have a provision for the additional thermal equivalent (output) of their cogenerated steam.

Question 3: *Should a U.S. system be designed to eventually allow for trading with other greenhouse gas cap-and-trade systems being put in place around the world, such as the Canadian Large Final Emitter system or the European Union emissions trading system?*

The larger the geographic extent of the program, the greater the potential to minimize compliance costs to the extent possible and to effectively address the overall problem. Having a patchwork quilt of programs across the planet can only lead to inefficiencies and higher costs.

Submitter's Name/Affiliation: Kateri Callahan and Kara Saul Rinaldi, Alliance to Save Energy
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Executive Summary

The Alliance to Save Energy applauds the Committee on Energy and Natural Resources for its bi-partisan effort to explore development of a *m*andatory market-based greenhouse gas regulatory system in the U.S.. We appreciate the opportunity to provide input, which for the Alliance will center on mechanisms and policies to deploy energy efficiency as the quickest, cleanest, and cheapest means of reducing America's greenhouse gas emissions. We urge the Committee to take full advantage of the cost-effective benefits provided by the energy efficiency policies and measures, outlined in our responses to questions one and two. Development and implementation of a national regulatory system likely will require protracted debate and consideration. While this national dialogue ensues, the Alliance urges Congress also to enact policies and programs that advance energy efficiency which will make measurable progress toward the Committee's stated goal of lowering greenhouse gas emissions in the U.S.

The Alliance to Save Energy is a non-governmental organization dedicated to advancing energy efficiency worldwide. Formed as a bipartisan initiative between Senators Charles H. Percy and Hubert H. Humphrey in the wake of the OPEC oil embargo, the Alliance mission attracts leaders in the energy and environmental fields. The current Board of Directors offers valuable leadership and insight into our efforts to incorporate energy efficiency into climate change proposals at the federal, regional and state levels. Board members include sitting Members of the U.S. Congress, principals of leading businesses, consumer and environmental organizations, as well as key state policy makers from two of the states with comprehensive climate change initiatives - New York and California. The Alliance also enjoys support by more than 100 Associate members including Fortune 500 companies, trade associations, public interest groups and small businesses.

Should Congress adopt a so-called "cap and trade" program, the Alliance believes that an upstream, economy-wide approach with a significant allocation for energy efficiency is ideal, however, we recognize that Congress may choose to focus downstream on a single sector. Under either scenario, the Alliance warns against relying on the price of energy to drive efficiency, but rather recommends that Congress create specific mechanisms (through allowance allocation or auction) and policies to ensure market penetration of energy-efficient technologies. The Alliance maintains that the cost of regulation can be mitigated through energy-efficiency standards and incentives and the out-put based allocation of allowances.

The Alliance's responses to the Committee include recommendations to:

- create an allocation (set-aside) or auction of allowances that can be sold to fund energy efficiency programs and other public benefits; and,
- enact complementary energy-efficiency policy measures, in addition to any cap and trade program, that will help to reduce the costs and improve the standards of energy use.

The Alliance urges Congress to use the largely-untapped potential of energy efficiency to mitigate U.S. greenhouse gas emissions, strengthen the economy, enhance national security, and help slow climate change.

Submitter's Name/Affiliation: **Tim Curran, President and CEO, ALSTOM Power, Inc.**
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ALSTOM Power, Inc. is a leader in providing innovative, environmentally friendly power generation products and services. The company meets the needs of its customers around the world with turnkey integrated power plant solutions and associated services for a wide variety of energy sources, including hydro, nuclear, gas and coal. The company employs 4,000 people in the U.S. and recorded $2 billion in sales in the 2005 fiscal year.

ALSTOM believes that it is vital for long-term energy and economic security to develop a suite of technologies enabling the use of all forms of energy, including fossil fuels, in an efficient and environmentally sustainable manner. The long-term use of coal in a manner that is virtually free of emissions and cost competitive with other energy resources is an important component of this goal. ALSTOM believes the most certain path to achieve this future is a broad portfolio approach to research, development and deployment of clean coal technologies, including Advanced Coal Combustion.

To this end, ALSTOM supports the use of revenue from the auction of allocations in supporting research and development for a full range of carbon reduction technologies. In emphasizing the Senate committee's goal to achieve greenhouse gas reduction while preserving the U.S. economy, ALSTOM believes that technology should not be legislated, but should be determined by the market. In partnering with industry as it has done in the past, it is incumbent upon the government to fund all technologies that promise to achieve the goal of carbon management, ensuring that these technologies provide economic and reliable environmental solutions for our nation's existing fleet of power plants as well as for future plant development.

Design Elements of a Mandatory Market–based GHG Regulatory system
Executive Summary
Submitter's Name/Affiliation: Gary L. Rainwater, Ameren Corporation

Ameren Corporation ("Ameren") commends Senators Domenici and Bingaman and the Senate Energy and Natural Resources Committee for soliciting input on the important greenhouse gas ("GHG") regulatory design issues raised in "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System" (hereinafter referred to as the "White Paper"), released on February 2, 2006. In responding to and commenting on the questions raised in the White Paper, we neither endorse nor oppose the concepts.

Ameren provides energy services to 2.3 million electric and 900,000 natural gas customers over nearly 64,000 square miles in Illinois and Missouri. We have participated in the voluntary reporting of greenhouse gases since 1995. Ameren is a member of the Edison Electric Institute ("EEI"), and as a member, we support the comments that they are submitting on the design elements of a mandatory market-based GHG regulatory system.

We have prepared responses to all four questions and have also included a document on other issues. If created, we prefer a regulatory program that is sector-wide. Ameren believes that allocations should be given to affected industries who incur significant costs to comply with the regulatory program. We also believe that where possible that we should be able to trade with other systems and that comparable GHG actions must be taken by all nations. Most importantly, we believe that significant resources should continue to be directed at research and development efforts to identify carbon neutral technologies to ultimately resolve energy needs in concert with greenhouse gas emissions.

Submitter's Name/Affiliation: Paul Wilkinson/American Gas Association
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Executive Summary

The American Gas Association (AGA) represents 197 local energy utility companies that deliver natural gas to over 56 million homes, businesses and industries throughout the U.S. Our members are proud to provide a fuel to their customers that can help contribute to solving multiple environmental problems – from acid rain to air and water quality to smog and visibility issues and solid waste production. We believe that natural gas can also contribute to reducing greenhouse gas emissions through its efficient use in direct use applications.

Unfortunately, natural gas markets have become extremely tight over the past 5 years, and this market tightness is expected to continue until significant new sources of supply enter the market. Market conditions have resulted in dramatic natural gas price movements since the year 2000. In fact, residential natural gas prices are roughly 60 percent higher today than they were in 2000. Residential and commercial natural gas consumers have become strained financially to pay their bills, while many large volume industrial customers have been forced to shut down or relocate overseas where energy prices are less burdensome.

Ironically, reducing the pressure in natural gas markets – thereby allowing increased natural gas availability to contribute to environmental solutions – is often held hostage by misguided environmental opposition. There is opposition to environmentally benign drilling onshore and offshore, to the construction of liquefied natural gas receiving terminals and to the construction of gas pipelines and storage facilities.

On the demand side of the equation, we are seeing significant effort in terms of increased efficiency by natural gas consumers. In fact, residential and commercial natural gas consumption is 25 percent lower today per customer than it was in 1980. Unfortunately, supply has not kept pace with rising demand, particularly the demand for gas used for electricity generation. We are very concerned that a greenhouse gas reduction program will exacerbate the demand for large-scale gas-fired generation. We are very supportive of efforts to promote high efficiency, low carbon producing alternatives to gas-fired generation. These alternatives would allow more direct use of gas – the most efficient use of gas with the lowest carbon production. As an example, a residential natural gas hot water heater produces roughly 3 times less CO_2 than a comparably sized electric water heater. (Based on DOE assumed electricity generation mix.)

The two key issues we would like to comment on at this time are the appropriate approach to greenhouse gas regulation and the point of regulation. First, we see the economy-wide carbon tax approach described in the White Paper as being detrimental to all natural gas consumers and largely ineffective in terms of reducing greenhouse gas emissions. We favor a sectoral approach, and note that a sectoral approach could be economy-wide. Secondly, the point of regulation under a carbon tax-type approach as outlined in the White Paper should be upstream of the local gas utility. A gas utility point of regulation would not influence carbon-producing behavior, it would be complex and cumbersome with overlapping regulatory authorities, and it would put the gas utility at risk for non-recovery of the tax.

Submitter's Name/Affiliation: American Iron and Steel Institute
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The U.S. steel industry has demonstrated that mandatory programs are not required to accomplish significant reductions in energy and corresponding greenhouse gas emissions and that voluntary programs can work. According to EPA's draft Inventory of U.S. Greenhouse Gas Emissions and Sink from 1990 to 2004, the U.S. steel industry has reduced carbon dioxide emissions by 39% since 1990 and methane emissions 23% over the same timeframe. These improvements are achieved by improving technology over time and are only possible if the industry is financially viable and can invest in development and deployment of new energy-efficient technology. Voluntary programs such as Climate VISION, the Asia Pacific Partnership for Clean Development and Climate, and EPA's Climate Leaders program should be given a chance to show continued progress before an allocation system is imposed.

Increasing energy costs, which represent about 20% of the cost of steelmaking, threaten the viability and competitive position of the American steel industry and force a strategic U.S. industry to consider relocation or investments in other countries of the world. Energy costs in the U.S. are already at large premiums when compared to major steel-producing nations and additional increases will exacerbate the problem and widen the competitive disadvantages. Moreover, other factors, such as the importance of an industry to a growing economy and national security, need to be considered above and beyond energy needs of a given sector. Based on the experience of the EU in its attempt to comply with its Kyoto Protocol obligation, it is evident that its GHG emission trading scheme has driven up carbon credit prices and energy costs for some industry sectors (including steel) and the power industry. Those costs threaten the viability of the European steel industry to the point that companies are looking to other nations to expand steelmaking capacity.

The broader the program the less chance there is for creating winners and losers. However, even with an economy-wide approach, some industries that are energy-intensive will suffer unless adjustments are made to accommodate those industries. Moreover, economic growth is tied inexorably to energy, and therefore any approach that raises energy costs will depress the economy and adversely affect markets for commodities like steel that are linked closely to general economic health and growth. It is little comfort for special consideration to be given to a sector when the economy on which it depends is adversely impacted.

Given the choice of an allocation or auction system, the steel industry prefers an allowance system that provides generous allotments or exempts the industry altogether to reflect the industry's progress to date, its inherent energy-intensive nature, and its strategic position as an industry to support the nation's economic growth and national security. Auctions pit industries against industries and disadvantage those sectors that are less able to afford to compete in the auctions or need greater credits to meet limits. If a regulatory approach is chosen, there is less administrative burden to limit the program to as few as possible, which suggests a program geared to upstream energy producers. Finally, a significant increase in government funding assistance is essential to promote development of more energy-efficient technology and to put the U.S. government's investment on par with the EU and Asia.

Submitter's Name/Affiliation: Robert Shults/APX, Inc.
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APX Inc (APX) is pleased to offer these comments to the Senate Energy and Natural Resources Committee (Committee) in order to facilitate the April 4th Climate Conference on the design elements of a mandatory market-based greenhouse gas regulatory system. APX is responding to Question 3 and raising an additional topic related to the design of a mandatory market-based program. As a provider of solutions to many potential market participants, APX is policy neutral and is therefore not in a position to respond to the other three main questions. The company's vast relevant experience in developing and administering environmental tracking programs does however make it uniquely qualified to comment on the methodology for administering any such program.

APX is a leader in developing and operating certificate-based environmental tracking systems. APX began operating a certificate-based Generation Information System for the New England Power Pool (NEPOOL GIS) in April of 2002 and is currently administering the system under a five-year contract with NEPOOL. In 2001, APX also implemented the Texas Renewable Energy Credit (Texas REC) program for the Electric Reliability Council of Texas (ERCOT), and trained and advised ERCOT on the operation of the Texas REC program. Most recently, APX implemented the PJM Generation Attributes Tracking System (PJM GATS), and provides ongoing technical support and knowledge transfer services. In addition, for five years APX operated a renewable energy certificate-trading platform, the APX "Green Ticket" market, in co-operation with the California Energy Commission (CEC).

Environmental tracking systems and services such as the NEPOOL GIS, PJM GATS and Texas REC are one of APX's core business lines. Our baseline and customized systems are widely recognized as the "best practice" for enabling renewable energy trading programs, and are the only systems in production in North America capable of supporting high-volume, multi-state programs. The company has committed substantial resources toward developing these systems and is currently working to advance the deployment of our certificate-based environmental tracking systems in a number of other regions.

APX recommends that the climate conference consider a centralized certificate-based accounting and verification methodology for tracking greenhouse gas attributes to ensure an auditable, flexible program capable of meeting the needs of all stakeholders. By replicating the existing certificate-based programs which are used today to track emissions and generation attributes, the green house gas program would ensure that each of the individual regulatory bodies are able to establish, account for, and report on the attributes in a centralized system. A certificate-based program would also facilitate the exchange of information and trading with other greenhouse gas systems throughout the world, and would minimize double-counting issues. In addition to providing stakeholders with significant flexibility, centralized certificate-based accounting and verification technology has been developed and proven, thereby providing significant cost savings to any such program.

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Avista Corporation is an electric and natural gas utility headquartered in Spokane, Washington that serves over 600,000 customers in Washington, Idaho and Oregon. Avista has a low-emission electric generation portfolio. Approximately 58% of its generation is from hydropower, 25% from natural gas, 13% from coal and 3% from biomass.

Avista does not have a position on the issue of federal regulation of greenhouse gas (GHG) emissions. However, should Congress act on legislation to establish a "cap and trade" regime or other regulatory system applicable to GHG emissions, Avista believes it is critical that the costs of such a system be distributed equitably across the utility industry and the entire economy.

Avista does not support a system where allowances to emit GHG are allocated exclusively on the basis of historic emissions. Under such a system, utilities that have invested primarily in GHG intensive coal-fired generation would likely get a disproportionate amount of GHG allowances. To the extent such a utility has older, less-efficient coal-fired generation, it could increase the efficiency of its generation through technology improvements, thereby creating a surplus of GHG allowances, and sell the excess allowances at a considerable profit. By contrast, under this system a low GHG emission utility such as Avista would receive a proportionately small amount of GHG allowances. Moreover, in order to serve load growth, which is likely to be served in part by GHG-intensive fossil resources such as coal, Avista would have to purchase additional allowances, perhaps from a predominately coal-fired utility.

The ironic result would be that the GHG regulatory compliance costs of a low-emission utility such as Avista could be higher than the costs incurred by a high-emission utility if allowances are distributed solely on the basis of historic emissions. A better approach would be to distribute any electric generation allowances based on a hybrid system that takes into account both historic emissions and electricity output. This would assure that the burden of GHG regulation is distributed equitably across the electric generation sector and not disproportionately borne by relatively low-emission utilities such as Avista.

Submitter's Name/Affiliation: Robert Gramlich, American Wind Energy Association
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

EXECUTIVE SUMMARY

1. Who is regulated and where?

- What is the most effective place in the chain of activities to regulate greenhouse gas emissions, both from the perspective of administrative simplicity and program effectiveness?

A national CO_2 emission cap-and-trade system should ensure that the electric sector is provided a clear and direct signal to invest in clean and efficient generation, as inadequate incentive would steer to investment in toward additional carbon-based fuel generation, imposing unnecessary carbon dioxide and greenhouse gas risk on the U.S. AWEA believes that the electric sector can significantly reduce emissions most cost effectively by including renewable energy sources in the allocation of allowances or allowance value under a cap-and-trade program.

2. Should the costs of regulation be mitigated for any sector of the economy, through the allocation of allowances without cost? Or, should allowances be distributed by means of an auction? If allowances are allocated, what is the criteria for and method of such allocation?

There are a variety of allocation methods that can be utilized to ensure that renewable energy sources are involved in the market for emission reductions in a cap-and-trade program. These methods include:

- Allocation of allowance revenue value under an auction.
- Set-aside of allowances for renewable energy sources
- Output based allocation of allowances

We believe that an allocation of emissions allowances to electric generators based on output provides the strongest incentive for clean and efficient generation to be developed.
An allocation of allowances to renewable resources through an output-based approach will provide added incentive for increased development in the industry, and will encourage investment by generation-owning entities to choose renewable energy generation as a method of emission reductions. Without an allocation of allowances, investment in renewable energy may actually be discouraged since it would be excluded from the emission reduction market created by the cap-and-trade program.

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

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My comments are as follows; I have not responded directly to Questions 1-4.

As a professor of Atmospheric Science at the University of Washington and a scientific consultant on matters of climate change, I am delighted that you are addressing the global warming problem, which will be one of the major issues confronting the world's population in the 21st century. We have a problem in rates; the greenhouse gas concentrations are rising at an alarming rate, as are world population and the need for energy. We must move very quickly to avoid a global catastrophe.

A few small comments:

You do not state particular goals for the system, but as you know current research indicates that global mean temperature changes of more than two degrees or so are both likely (if we do not gain control of GHG emissions) and to be feared. Accurate ongoing monitoring of all elements of the climate system is essential and should be tied to the workings of the GHG regulatory system---i.e., the market may have to be jump started.

The NCEP document suggests using CO2 intensity (emissions/GDP) as the metric for the market. This is not the metric the climate system uses and is of course misleading; intensity can decrease significantly while emissions increase.

Submitter's Name/Affiliation: Rev. Jim Ball, Ph.D., Evangelical Environmental Network and Evangelical Climate Initiative
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While I write as an individual, my comments are meant to be consistent with the views expressed by the leaders affiliated with the Evangelical Climate Initiative (ECI) and the ECI's statement, *Climate Change: An Evangelical Call to Action* (see www.christiansandclimate.org). I serve as one of the spokespersons for the ECI. I am also Executive Director of the Evangelical Environmental Network (EEN). The policy principles of our ECI statement are consistent with the Sense of the Senate Resolution on climate change. In my submissions I address questions 1, 2, and I also submit an "Additional Topic."

1. The Ethical Importance of a Robust Price Signal: Targets and Timetables

As I suggest in "Additional Topics," from an ethical perspective, the most important aspect of any climate change legislation is that it begins to put our country on a greenhouse gas (GHG) emissions trajectory that leads to real reductions in the future that reduces or mitigates as much as possible the impacts of climate change in a manner that does not do significant harm to our economy. Any mandatory policy solution must provide a robust enough price signal to the marketplace to immediately effect investment decisions related to GHG emissions, helping to put the U.S. on a GHG emissions path to significantly mitigate the impacts of climate change on the most vulnerable. Targets and timetables must be robust enough to influence investment behavior sufficient to deal with the problem, but not so stringent as to cause significant economic harm.

2. Allocation and Distribution of Set-Aside Permits

I suggest that two basic categories be created, a "Technology" category and an "Adaptation" category. (Early deployment/reduction would fall under the Technology category, while consumer protection would fall under Adaptation.) Within these categories, sub-categories could be created that would have fixed minimum amounts for which their programs would be funded.

Given the current political support for alternative energy R&D, I suggest that the "Adaptation" category be given 75% and the "Technology category be given 25%. These funds should be allocated directly to something like a non-profit research consortium or a non-profit corporation, chartered by the federal government, which would then finance technology development and deployment projects as well as projects under my "Adaptation" category.

Given our profound concern for the poor as expressed in our ECI statement, I would propose four sub-categories under my Adaptation category: 1) consumer protection for low-income families; 2) transition assistance for dislocated workers and communities; 3) adaptation and mitigation assistance for least developed countries; 4) adaptation research and policies for least developed countries as well as for low-income populations in the U.S.

Both of these ethically important considerations – the needs addressed via the "Adaptation" subcategories as sketched above and the need for a robust price signal to spur proper investment and innovation – argue for an initial safety valve price higher than $7 per ton.

Submitter's Name/Affiliation: Lisa Jacobson, Executive Director, Business Council for Sustainable Energy
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On behalf of the members of the Business Council for Sustainable Energy, we are pleased to provide comments to the White Paper, *Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory Program*. The Council also requests the opportunity to share our views in greater detail during the Committee-sponsored conference on this topic to be held on April 4, 2006.

The Council was created in 1992 by companies and trade associations in the energy efficiency, renewable energy, natural gas, electric utility and independent power industries. Our membership spans the energy spectrum and includes companies such as NiSource, Green Mountain Energy, Sempra Energy, Brookfield Power, Sacramento Municipal Utility District (SMUD), PPM Energy, Enel North America, GE Wind and American Standard/Trane as well as industry trade associations representing the wind, solar, hydropower, energy efficiency, natural gas and insulation industries.

Our comments on the White Paper focus on the incorporation of clean energy generation and energy efficiency into a national greenhouse gas regulatory system. Inclusion of clean and efficient energy options -- both for demand reduction and expansion of domestic clean generation -- will help cost-effectively reduce greenhouse gas levels while supporting the U.S. economy and enhancing our national security.

The Council has provided comments on White Paper questions 2 (allocation issues) and 3 (linkages with other greenhouse gas trading programs). In response to question 2, the Council supports allowance allocation policy for the power sector that recognizes the environmental attributes of clean energy technologies and creates market signals for clean generation and energy efficiency. Specifically, the Council:

- Supports an updating output-based allocation method
- Supports the following criteria for allowance allocation policymaking
    - allowance allocation should reduce the carbon intensity of electric generation
    - allowance allocation should reduce energy demand
    - allowance allocation should provide benefit to the economy
    - allowance allocation should promote private investment
- Supports directing auction revenue or allowance set aside resources to generators of clean base load generation as well as investors in energy efficiency projects
- Supports set asides for credit for early action and new entrants
- Recommends allocating allowances without cost to electric generators unable to pass through costs to users -- on an output basis
- Supports extension of EPACT 2005 clean energy technology incentives and other consumer protections to mitigate compliance impacts throughout society

In response to question 3, the Council supports consistency and linkages with credible non-U.S. greenhouse trading programs to reduce compliance costs and maintain the nation's economic competitiveness. Linkages should be based on a comparable environmental commodity, based on transparent and verifiable transactions and accounting.

Submitter's Name/Affiliation: BP America, Inc.
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BP is appreciative of the opportunity to respond to your White Paper on "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System". We commend members and staff of the Senate Energy Committee for their continued efforts to address the Climate Change issue and to encourage input and dialogue. It is important that this dialogue take place.

BP supports a precautionary approach toward climate change, even though we recognize that our understanding of climate science is incomplete. BP believes that the U.S. should adopt a number of additional policies, at the federal level, to mitigate the growth of greenhouse gas (GHG) emissions.

Our key points are summarized below and are expanded upon within our detailed response:

- Development of a suite of parallel GHG policies are necessary to address climate change.
- Emissions trading (ET) is one market based policy which allows for cost effective GHG emission reductions. It is presently not a suitable option to address all sectors of the economy.
- A 'Cap and Trade' program for large, stationary emitters (including the petroleum refining sector) should be developed and taken as a first step to address a major portion of U.S. GHG emissions. Because it is of vital importance for a successful ET system to match the point of regulation with the emitter, we support a "downstream" point of regulation. This U.S. system should be compatible with existing and developing GHG trading systems to facilitate the creation of a global market.
- Emission allowances should be allocated free of charge in order to mitigate the costs of regulation and maintain simplicity.
- Specific policy options for the transport sector need to be developed. These approaches (goal-based, and preferably market-based) should be comprehensive in their treatment of this sector, and need to recognize the key variables such as vehicle selection, fuel choice, and consumer behavior. They also need to be integrated with existing and future policies and regulations.
- Transitional incentives outside of but parallel to an ET program should be developed to stimulate the development of new technology at a scale where it can compete in the market and have a material effect on GHG emissions. Incentives should not only focus on facility construction, but on the need to encourage sustainable production of lower carbon energy.
- Policy options which address the material emissions from the remaining sectors should be developed, for example through measures to improve energy efficiency in buildings.
- A policy objective should be to avoid traditional, prescriptive regulation in favor of market-based approaches.

Submitter's Name/Affiliation: **Roger Caiazza**
Contact:
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Phone: **315-622-3257**

I am submitting written comments limited to one aspect of the market-based greenhouse gas regulatory system, namely question 2: allowance auctions. My analysis[1] of the CAIR NOX allocations showed that past success of a cap and trade program does not guarantee future success if there are significant departures from earlier successful programs. The Acid Rain Program, the NOX Budget Program and all the other cap and trade emission control programs I am familiar with have had very limited auction components. I believe that changing to an auction distribution for all or a significant portion (say > 20%) of the allowances is significant enough of a change that the approach must be considered experimental. My comments are limited to this issue.

[1] "Factors Affecting the Viability of the Cap and Trade Approach, Paper presented at the 9th Annual Electric Utilities Environmental Conference, January 23-35, 2006, Tucson, AZ.

Submitter's Name/Affiliation: James Johnson, Patricia Hoyte / Caiteur Group Inc.
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Executive Summary

In February 2006, Senators Peter V. Domenici and Jeff Bingaman published a climate change white paper which laid out some key questions and design elements of a national greenhouse gas program in order to facilitate discussion and the development of consensus around a specific bill. They limited consideration to "mandatory market-based systems" contemplated by the Sense of the Senate Resolution of June 2005.

Caiteur Group Inc., through its policy research think-tank arm Caiteur Group Climate Change Institute, specializes in Climate Change Business Implementation Frameworks, Climate Change Data Management, Modeling, and Information Technology Strategy, and Climate Change Risk Management. We are pleased to provide our views on the Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System with this response, as follows:

On Question 1, *Who is Regulated and Where*, we propose that the regulation be aimed at large emitters, at point of emissions using a time-tiered sector specific approach.

On Question 2, *Should the Costs of Regulation be Mitigated for any Sector of the Economy*, we propose that cost mitigation be limited only to regulated sectors under the GHG program using allocation of free allowances. We also recommend that additional credits be made available to the general public via auctions.

On Question 3, *Should a U.S. System be Designed to Eventually Allow for Trading with Other GHG Cap-and-Trade Programs around the world*, we recommend linkages to other trading systems using a mandatory-to-mandatory system approach for better controls and more liquidity.

On Question 4, *"Encourage Comparable Actions by Other Nation"*, we recommend evaluations and reviews with other nations based on status: OECD, Large Emerging Emitter, and Developing Country, including the use of incentives and programs that leverage the capacity of world bodies.

Respectfully submitted,

Patricia Hoyte
CEO, Caiteur Group Inc.
Co-chair, Caiteur Group Climate Change Institute

James Johnson
SVP, Caiteur Group Inc.
Co-chair, Caiteur Group Climate Change Institute

Submitter's Name/Affiliation: California Climate Action Registry
Contact: Diane Wittenberg, President
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The California Climate Action Registry's submittal responds to the following white paper questions about the design of a mandatory market based greenhouse gas regulatory system:

Question 1: Who is regulated and where?
The Registry believes that a portfolio approach that combines a cap on large emitting sectors along with other measures, such as wide-ranging performance efficiency standards (appliances to vehicles), may be most successful.

Question 1a: Is the objective of building a fair, simple and rational GHG program best served by an economy wide approach, or by limiting the program to a few sectors of the economy?
While a full blown economy wide cap and trade approach would be ideal from the perspectives of equity and efficiency, it would be administratively challenging. A more realistic approach might be to focus regulation on a selection of large emitting sectors and apply performance efficiency standards to those sectors that would be difficult to cap.

Question 1b: *What is the most effective place in the chain of activities to regulate GHG emissions, both from the perspective of administrative simplicity and program effectiveness?*
Given lingering questions about the extent to which certain industries might be able to transfer costs along the value chain in a regulatory program focused upstream, and the impact that those costs might have on customer behavior, a more selectively applied downstream approach might be a more effective approach.

Question 2d: What portion of the allocation pool should be reserved for an early reduction credit program and an offset program?
Early action and offsets, if measured rigorously, are both sources of low cost reductions that should be considered for inclusion in a regulatory program. Awarding credit through an allocation of allowances could be a way to accomplish this.

Question 3: Should a US system be designed to eventually allow for trading with other GHG cap and trade systems being put into place around the world?
Establishing linkages with other systems around the world would be an effective way to address concerns about leakage or competitiveness, and to reduce the overall costs of regulation.

Is there an additional topic related to the design of a mandatory market based program that you would like to address?
Rigorous quantified and verified greenhouse gas emissions data should be a fundamental underpinning of any federal regulatory program. The experience the Registry has gained in operating such a reporting program has generated several lessons that could be of importance in designing such a program.

Submitter's Name/Affiliation: Yvonne McIntyre, Calpine Corporation
Contact: Yvonne McIntyre, Director of Federal Relations
Email: yvonne.mcintyre@calpine.com
Phone: (202) 589-0909

Calpine Corporation, founded in 1984, is a major North American power company, capable of delivering nearly 27,000 megawatts of clean, reliable and fuel-efficient electricity to customers and communities in 21 U.S. states and three Canadian provinces. The company owns, leases and operates integrated systems of fuel-efficient natural gas-fired and renewable geothermal power plants.

Calpine has chosen to respond to Question 1, including clarifying questions 1a and 1b, and Question 2, including clarifying question 2f.

Calpine has long supported the adoption of mandatory limits of greenhouse gas emissions to address the Climate Change problem. We believe that an economy-wide regulatory system would be the most effective way to control greenhouse gas emissions, from both an economic and environmental perspective. However, due to the complexity and possible economic impacts of such a regulatory system, it remains unclear whether Congress would support the adoption of such a sweeping program. Because we feel that immediate steps must be taken to begin addressing Climate Change, we therefore support the adoption of a cap-and-trade program with offsets for the electric generating sector as a prudent first step in addressing greenhouse gas emissions. Such a program could serve to demonstrate the merits and viability of a broader economy-wide approach. An electric industry cap-and-trade program with offsets would allow reductions to occur throughout the economy, reducing the overall costs of compliance and spurring innovation. We would also encourage Congress to consider pursuing options for designing an economy-wide approach. A single sector approach could be readily integrated into a broader economy-wide program, and ultimately an economy wide approach will be necessary to stem the rise in greenhouse gas emissions.

On the matter of allowance allocations, Calpine believes that an allowance allocation system should be designed to recognize clean, efficient, low and non-emitting technologies as well as to drive innovation and the deployment of new, highly efficient generating technologies. While an auction system may be the fairest means of distributing allowances because the cost of allowances becomes a result of true need, the political viability for such a system is very questionable. Therefore, we support an updating, output-based allocation approach as the most sensible and rational basis for distributing emissions allowances to the electric generating sector because it encourages efficiency and innovation. An output-based allocation system, where the number of allowances that a company receives is based on the amount of electricity generated, rather than the amount of fuel used (as it is with heat-input), provides an incentive for a company to improve the operating efficiency of its fleet. Updating allocations encourages the development of new, innovative technologies by providing a mechanism for new power projects to be integrated into the program on an equal footing. This approach is in contrast to a "grandfathering" approach, where companies receive a constant stream of allowances without regard to their operating efficiency, and new power projects are forced to purchase their allowances from the market.

Submitter's Name/Affiliation: Michael E. Canes/LMI
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Save as Summary_NAME (and insert your name or affiliation).

Summary of Comments (Michael E. Canes)

The White Paper raises several important questions concerning a Cap & Trade system to constrain U.S. greenhouse gases (GHGs). However, it does not consider the costs of such a system nor whether better alternatives are available. In fact, a C&T system would be very costly and is inferior to a tax system as a means to artificially constrain U.S. GHGs. However, neither is warranted at this time as present U.S. policy towards reducing GHGs is working and can be strengthened further. Data show that the U.S. is among world leaders in reducing the GHG intensity of its output, and these reductions have continued through 2005. Moreover, rapid immigration into the U.S. suggests that this country has achieved even more concerning GHG reduction than the simple statistics indicate. The U.S. government should continue to invest in the creation and implementation of low carbon and energy efficiency technologies, and should seek to enlarge its voluntary partnership programs with U.S. firms. Also, it can itself seek to reduce GHGs from its operations and can encourage state and local governments to do the same.

Mike Sandler, Program Coordinator
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Community Clean Water Institute (CCWI) has worked on climate protection programs in Northern California since 2001. Thank for the opportunity to comment on this issue.

1. Who is regulated and where?

We encourage the government to issue Individual Emissions Entitlements (emissions rights) directly to the nation's citizenry. Emissions are a human right, and allowances should be allocated to individuals. **Our primary recommendation is to make the initial allocation directly to citizens as Individual Emissions Entitlements. We encourage the government (or a Sky Trust formed by the government) to issue emissions rights directly to the nation's citizenry.**

- Is the objective of building a fair, simple, and rational greenhouse gas program best served by an economy-wide approach, or by limiting the program to a few sectors of the economy?

Answer: Economy-wide approach.

- What is the most effective place in the chain of activities to regulate greenhouse gas emissions, both from the perspective of administrative simplicity and program effectiveness?

Emissions allowances should allocated to individuals who "cash" them at banks or brokerages. Regulated firms must them purchase them on the open market. The scarcity rent is thereby returned to the citizens, who are the owners of the Commons.

2. Should the costs of regulation be mitigated for any sector of the economy, through the allocation of allowances without cost? Or, should allowances be distributed by means of an auction? If allowances are allocated, what is the criteria for and method of such allocation?

Answer: Definitely by auction. A basis for this system is the Alaska Permanent Fund.

- How should these allowances or funds be administered?

Emissions allowances should allocated to individuals on a per capita basis who "cash" them at banks or brokerages. Regulated firms must them purchase them on the open market. The scarcity rent is thereby returned to the citizens, who are the owners of the Commons. Most other programs of cap and trade will result in windfall profits to oil companies, and a small piece of scotch tape for consumers who are subject to price hikes.

Answers to Questions 3 and 4 also attached.
Additional information can be found at http://www.ccwi.org/issues/bigpicture.htm.

Submitter's Name/Affiliation: Center for Clean Air Policy
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Overall Trading System Design: We recommend for consideration use of a hybrid approach in which a downstream system for power plants and large industrial sources is combined with upstream caps on oil refiners, natural gas processing plants and fuel distribution companies. Such a system combines the political advantages of a downstream approach (for example, a downstream program is more familiar and it is easier to require reductions from large sources than from small ones) with fairly broad coverage via an upstream cap for small sources in the residential, commercial and transportation sectors. For details on this hybrid approach, please see, "An Upstream/Downstream Hybrid Approach to Greenhouse Gas Emissions Trading" located at http://www.ccap.org/publications_climate.htm#AIRLIEPUB .

Allowance Allocation: From a purely economic standpoint, the preferred allocation method is an auction in which revenues are recycled to lower taxes. This method minimizes the overall costs to the economy. However, an auction with revenue recycling is criticized by many in industry as requiring them to pay twice—once for the greenhouse gas mitigation or other compliance activities and once for the purchase of allowances. Also, use of all auction revenues to lower taxes removes a powerful opportunity to simultaneously advance the technologies needed to move to a less carbon-intensive economy, and later, to adapt to future climate conditions. Therefore, while we would encourage the use of an auction and tax rebates to account for a portion of the overall allocation, we believe that the development of winning legislation and effective climate strategy will include allocations to industry and consumers as well as a sizeable dedicated allocation for the advancement of climate-friendly technologies.

Linkages with Other Systems: Climate change is a global problem that requires a global solution. Linkages across systems are needed to encourage the most cost-effective control strategies. There is the potential for such linkages to benefit the US to the extent that lower cost opportunities are available elsewhere. Advantages to US industry from linkages may include greater liquidity and greater certainty in the availability of allowances at a prevailing international market price.

Maintaining Competitiveness: Finally, in response to concerns that a mandatory control program will place US industry at a competitive disadvantage to industries in developing countries while failing to achieve climate goals, we suggest use of an active approach in which the US works with developing countries to develop equivalent targets for major energy and heavy industry sectors (e.g., electricity, cement, steel, oil refining, pulp and paper, metals) using a sector-based approach (see www.ccap.org/international/Sector%20Proposal~4-pager.pdf for details on this concept). This approach establishes a process for setting sector targets that use consistent, bottom-up technology based assessments at the start to achieve consistent levels of effort for the industrial sector in developed and developing countries.

Submitter's Name/Affiliation: **Chicago Climate Exchange**
Contact: **Paula DiPerna, Executive Vice President,**
Email: **pdiperna@theccx.com** **Phone: 312-554-3350**

Chicago Climate Exchange ("CCX") appreciates the opportunity to provide input on: Question 1 (Point of Regulation); Question 2 (Allocation); Question 3 (International Linkage).

CCX is the world's first, and North America's only operating, active and legally binding greenhouse gas ("GHG") emission reduction and trading system. CCX is the only rules-based, independently audited market for U.S. reductions in all six GHGs, with price transparency, registry and clearing provided through a comprehensive mechanism. Total emissions under management since 2003 makes CCX the world's second largest live GHG market (second only to Germany). CCX's 140 members represent a cross-section of the US economy, including leading companies such as Ford, DuPont, IBM, Baxter, American Electric Power, Tampa Electric, Dow Corning; cities such as Portland, OR, Chicago, IL and Oakland, CA; and the State of New Mexico. CCX is the world's only GHG reduction market incorporating standardized emission offsets for forestry, agriculture and methane. CCX's CEO, Dr. Richard L. Sandor, formerly served as Vice-Chairman of the Chicago Board of Trade and directed the first auctions for USEPA SO_2 emission allowances in 1993. Our input reflects decades of unique, real-world, and workable experience in developing environmental and commodity markets, including our European Climate Exchange and Chicago Climate Futures Exchange subsidiaries.

Use Trading System Designs that Have Repeatedly Proven Successful

CCX experience demonstrates that a GHG cap-and-trade system that allows emitters to manage annual reduction commitments – a design used in other proven trading systems (US SO_2 and NOx, EU CO_2) – gives clear signals that lead to direct internal action and trading responsibility and attendant opportunities. This design:

- Maximizes the benefits of emissions trading, as proven in the SO_2 program, and allows carbon pricing and trading to stimulate financing of capital improvements.
- Maximizes entrepreneurial response and rewards environmental innovation.
- Can cover a major portion of emissions from all six types of greenhouse gases, can be integrated with upstream systems for other emissions, and allows opt-in by small sources.
- Can bring significant benefits to the agriculture and forestry sectors, assuming carefully screened and specified rules with attendant scientific validity and verification.

Use Simple and Broad Emission Reduction Schedules, Credit Early Action and Projects

CCX experience suggests a workable system should:

- Include the maximum diversity of sectors using simple, percentage reduction schedules.
- Employ very small allowance auctions to provide price information. Like the SO_2 auctions, returning auction proceeds *pro rata* to emitters reduces compliance burdens.
- Fully recognize standardized and verified early reductions, as this will maximize ongoing capital investment, avoid undermining prior investment, and boost market liquidity.
- Include project-based mitigation activities, such as methane capture, and carbon sequestration by farms, forests and ranchlands, which produce multiple global and local benefits, help finance sustainable agricultural practices, and have proven workable.

Effectiveness of the above is being demonstrated by CCX members today. The environmental and economic benefits being generated are of national and global significance.

The input provided herein reflects the views and experiences of Chicago Climate Exchange only, and not necessarily those of its members, vendors or partner organizations.

Submitter's Name/Affiliation: Cinergy Corp.
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Executive Summary

Question 1 --- Who should be regulated and where?

- Consistent with the recommendations of NCEP and the principles underlying the Sense of the Senate resolution, a greenhouse gas reduction program must encompass the entire economy.
- Congress should act now but reductions should gradually occur over time.
- Cinergy favors an upstream regulatory approach that would be more efficient and administratively simpler.

Question 2 --- How should allowances be allocated?

- Utilities, especially in the early years of the program, will need a large allowance allocation to mitigate electricity price increases.
- The point of allocation does not have to be the same as the point of regulation. Congress should consider separating the determination of caps from the question of who receives allowances.
- Proposals to auction all allowances would hit energy intensive industries and coal-reliant states the hardest. This would hit the Midwest particularly hard.
- Some allowances could be earmarked toward stimulating new technology.

Question 3 --- Should GHG trading systems be linked?

- In the long term, the ideal GHG trading system is an international one.
- In the short term, linkage with other trading systems is less important than creating a solid domestic economy-wide market.
- Use of a safety valve to keep costs low in the near term provides a greater benefit than linkage to the European emissions market.

Question 4 --- Should a mandatory program be conditioned on actions by other nations?

- Cinergy supports establishment of a mandatory GHG regulatory program now. However, climate change can only be addressed effectively if all the major emitters of the world are working together. While it's important for the U.S. to start now, our commitment must not place us at a competitive disadvantage Let's get started now but understand there is a point where we will not venture until all the critical emitters are participating.

Submitter's Name/Affiliation: Citizens' Alliance for Responsible Energy (C.A.R.E.)
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Phone: (505) 798-6959

Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

The Citizens' Alliance for Responsible Energy (C.A.R.E.), based in Albuquerque, NM, is a 501(c)(3) group dedicated to assuring all Americans a secure and affordably produced supply of responsibly produced energy.

C.A.R.E. is answering **Questions 1, Clarifying Question 1b, and Clarifying Question 2e**. We are also submitting an **addition** that outlines an alternative model that uses emissions indexing as a basis for a cap-and-trade system.

Our response to **Question 1** advocates building a detailed body of apolitical scientific proof before moving to impose an emissions control system that could have very serious long-run effects on our economy and national security. The U.S. national laboratories are well positioned to take up this challenge and are more likely to produce objective work than studies funded by interested parties. We also make the case that America already has technologies capable of arresting much of our GHG emissions growth without placing a straightjacket on the economy. Nuclear energy is well-commercialized, and clean coal is on the verge of becoming a viable emissions reduction solution as well. These two technologies can address 40 percent of our CO2 emissions. High oil prices and research breakthroughs are making emissions neutral cellulosic ethanol into a viable substitute for gasoline, which would allow us to sharply reduce transportation sector CO2 emissions—accounting for 30 percent of the present U.S. total.

Our response to **Clarifying Question 1b** expands on the basic concerns in our response to **Question 1**. A tightly binding cap-and-trade system would have deep economic effects whether it was implemented as an "upstream" system or a "downstream" one. We believe that consumers' interests would be best served by conducting a comprehensive economic and scientific study of the implications we outline in our response. Once the system is in place, it will be far more difficult to address problems and make changes. It would be much better to identify potential problems ahead of time, in order to shape more effective GHG control legislation.

We use **Clarifying Question 2e** to address our concerns about how the proposed cap and trade system might affect domestic energy production. One of our key questions is how energy from different sources will be regulated. Will imported oil and gas also be subject to carbon content based regulations? The answers to these questions will be game-changers and deserve to be addressed in detail before any possible legislation moves forward.

Finally, we include an **Addition** that outlines an alternative proposal for a cap and trade system based on an emissions index that allows annual expansion, but at a much lower rate than the historical average emissions growth since 1990. We believe that such a system would reduce CO2 emissions at a lower economic cost by forcing efficiency improvements, technological innovation, growth of carbon allowance trading, but also leaving room for the economic expansion that will be required as millions of new workers join the U.S. labor force over the next 10-15 years.

Submitter's Name/Affiliation: Clean Air Task Force
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

CATF has answered the following questions:

1
2
2.a.
4.c.
Additional comments

Summary of answers:

1.a. and 1.b References timing issues in Additional Comments Page

2. As noted in CATF's response under the "Additional Comments" page, it is important that allocation issues not stymie movement forward on overall carbon limits. The allocation of emissions rights ultimately has not effect on the overall environmental costs and benefits of action. Allocation, while important, is a distinctly subsidiary question.

2.a. Low carbon RD & D is unlikely to be fully accomplished by a centralized, federal "Manhattan Project" model, given the diversity and scope of innovation required. Regardless of allocation or funding source, thought must be given to the nurturing of dispersed and distributed innovation. A reverse auction for technology development and commercialization is one example of such an approach.

4.c. CATF believes that effective technology transfer and collaboration is likely to be a far greater spur to multi-lateral cooperation than any number of "trigger" mechanisms placed in legislation. One obvious area of focus of such efforts, however, would involve US and/or OECD payment to demonstrate and monitor wide scale geologic carbon storage in the next 10-15 years in developing countries (as well as OECD countries) so that this option can be tested on a large scale operational basis.

Additional comments. CATF appreciates Senators Bingaman and Domenici moving this legislative discussion forward, hopefully to action soon. A physical window is closing for the protection of Earth's climate system that requires the beginning of large scale technical change immediately but not the completion of that change. It is more important to get started in the right direction than to have mapped the entire journey.

Submitter's Name/Affiliation: Michael J. Bradley, Executive Director, The Clean Energy Group's Clean Air Policy Initiative
Contact: Michael J. Bradley
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Phone: 978-369-5533

Founded in 1997, The Clean Energy Group is a coalition of electric generating and electric distribution companies that share a commitment to responsible environmental stewardship. Several of the Clean Energy Group companies participate in the Clean Air Policy Initiative, which supports the adoption of national multi-pollutant power plant legislation. The participants in the initiative include Calpine Corporation, Entergy Corporation, Exelon Corporation, Florida Power & Light Company, PG&E Corporation, and Public Service Enterprise Group. Our comments were prepared in consultation with these six companies.

In response to the white paper, we have addressed Question 1, including clarifying questions 1a and 1b, and Question 2, including clarifying questions 2d and 2f.

The members of the Clean Energy Group's Clean Air Policy Initiative support the adoption of a cap-and-trade program for the electric generating sector as a prudent first step in addressing U.S. greenhouse gas emissions assuming a fair and cost-effective program design. We agree that an economy-wide regulatory system would be effective in controlling greenhouse gas emissions; however, it remains unclear whether Congress would support the adoption of such a sweeping program. We believe that a sector-specific cap-and-trade program (with offsets) could serve to demonstrate the merits and viability of a broader economy-wide approach. An electric industry cap-and-trade program with offsets would allow reductions to occur throughout the economy, reducing the overall costs of compliance and spurring innovation. Taking such action would be a prudent first step in light of the long-term capital planning decisions that are being made by electric generating companies today. We would encourage House and Senate members to consider options for designing an economy-wide approach, while continuing to advocate the adoption of a sector-specific cap-and-trade program. A single sector approach could be readily integrated into a broader economy-wide program, and ultimately an economy wide approach will be necessary to stem the rise in greenhouse gas emissions.

In terms of distributing allowances, we advocate an updating output based allocation approach as the most equitable and most rationale basis for apportioning emissions allowances to the electric generating sector because it encourages efficiency and innovation. An updating output based allocation encourages the development of new, innovative technologies by providing a mechanism for new power projects to be integrated into the cap-and-trade program on an equal footing. Also, by calculating the number of allowances that a company receives based on its output or electricity production, it has a financial incentive to improve the operating efficiency of its fleet. This approach is in contrast to a fixed, grandfathering approach in which companies receive a constant stream of allowances without regard to their operating efficiency, and new power projects are forced to purchase their allowances from the market. In the absence of an equitable distribution of allowances, such as an output based allocation, we would support an alternative allocation approach, such as an auction, to ensure a fair distribution of the burden under a national greenhouse gas program.

Summary
Seth Kaplan, Conservation Law Foundation

Submitter's Name/Affiliation: Seth Kaplan, Director Clean Energy & Climate Change Program, Conservation Law Foundation
Contact: Seth Kaplan
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Phone: 617-285-9569

Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

I provide very brief comment on the key question of allowance allocation and the critical need to auction allowances to fund energy efficiency and consumer rebates.

Submitter: Mike Burnett, Executive Director, The Climate Trust
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Executive Summary

Thank you for giving The Climate Trust the opportunity to comment on the climate change white paper published by Senator Pete Domenici and Senator Jeff Bingaman. We would like to commend the Senators and the Committee on Energy and Natural Resources for showing leadership in addressing climate change, one of the most crucial issues of our time.

As your work progresses, we ask that the Committee and other stakeholders please consider The Climate Trust as a resource for developing high-quality, project-based emissions reduction programs and policy.

The Climate Trust is a non-profit organization whose sole mission is to implement high-quality, project-based emissions reduction projects and to advance sound offset policy. The Climate Trust is the leading non-profit buyer of offsets in the US and has put into place a diverse and high-quality offset project portfolio that reduces GHG emissions and seeks to invest in innovative technologies. The Climate Trust's offset portfolio consists of $4.4 million invested in 11 projects and 1.7 million metric tons of CO_2-equivalent with $5 million to be allocated to up to four new projects in the coming months.

The Climate Trust's comments are focused on offsets, our primary area of interest and expertise (Question 2). We make the following recommendations:

1. **Early Reduction Credits.** Project-based emissions reductions achieved as a result of state regulatory requirements should be awarded early reduction credits. However, we urge caution on a broad early reduction credit program.
2. **Offset Pilot Program.** We support the proposal for an Offset Pilot Program similar to the Oregon Carbon Dioxide Standard and The Climate Trust. The Climate Trust offers recommendations for a pilot including the importance of quality and the potential for our involvement in the process.
3. **Offsets: An Alternative Compliance Mechanism.** The Climate Trust recommends that offset be used as an alternative compliance mechanism in addition to internal reductions, trading of allowances, and purchasing of auctioned allowances. High-quality offset projects provide cost-effective GHG reductions while stimulating economic and technological development and providing environmental co-benefits.

In addition, we briefly comment on technological incentives, adaptation assistance and consumer protection.

The Climate Trust stands ready to share our unique experience with the Senators, the Committee on Energy and Natural Resources, and other stakeholders to help design and implement the Offset Pilot Program.

Submitter's Name/Affiliation: **Conectiv Energy**
Contact: **M. Gary Helm**
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Phone: **(302) 451-5077**

On behalf of Conectiv Energy (CE), I respectfully submit the attached comments concerning the February 2nd Climate Change White Paper titled *"Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System."* CE is a wholly-owned subsidiary of Pepco Holdings, Inc. CE, through its subsidiary companies, owns and operates electric power generating plants in the five Mid-Atlantic States of Delaware, Maryland, New Jersey, Pennsylvania and Virginia. CE has a total generation capacity of more than 4,000 MW that includes coal-, oil-, and gas-fired generation, as well as renewable energy and is committed to conducting its activities with respect and care for the environment.

Following is a list of the White Paper questions that Conectiv is addressing in this submittal, as well as a brief summary of our responses to these questions.

Question 1. Point of Regulation

Clarifying Question 1a. - Is the objective of building a fair, simple, and rational greenhouse gas program best served by an economy-wide approach, or by limiting the program to a few sectors of the economy?

CE Response - CE believes that the objective of creating a fair and rational greenhouse gas program is best achieved through a mandatory program that is applied to GHG-emitting sources economy-wide rather than just to a narrow group of industrial sectors. While regulating a large number of sources could make the program more complex, this will not necessarily be the case if an upstream approach is taken to regulating GHG emissions.

Clarifying Question 1b. - What is the most effective place in the chain of activities to regulate greenhouse gas emissions, both from the perspective of administrative simplicity and program effectiveness?

CE Response – CE believes that regulating GHG emissions upstream for all fuels and sectors will allow a cap-and-trade program to address the largest number of sources in a cost-effective manner, and may serve to limit unanticipated consequences such as double-counting emissions. It will also provide for a consistent regulatory approach across all fuels and regulated sectors.

Question 3: International Linkage

Clarifying Question 3a. - Do the potential benefits of leaving the door open to linkage outweigh the potential difficulties?

CE Response – CE believes that any future GHG program should be designed to accommodate linkage with other trading programs, thereby allowing for offsets between U.S.-based sources and those in other countries where reductions may be obtained at a lower cost.

Submitter's Name/Affiliation: Congressional Budget Office
Contact: Donald Marron, Acting Director
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If policymakers decide to limit emissions of carbon dioxide, the primary greenhouse gas, through a cap-and-trade program, they face a choice about where in the production process to implement the regulation. An "upstream" cap would offer two significant advantages and one potential disadvantage over a "downstream" cap:

- An upstream cap would create economywide incentives for households and businesses to reduce their consumption of carbon-intensive goods and services. As a result, it would reduce emissions at a lower cost than if the cap (and resulting incentives for reduction) had been restricted to one downstream sector, such as the electricity sector.
- The costs and complexity of implementing an upstream cap, which would require regulating a limited number of suppliers of fossil fuels, would be significantly less than that of a comprehensive downstream system, which could potentially entail regulating millions of emitters.
- An upstream cap may not provide an incentive to adopt post-combustion technologies that facilitate the capture and sequestration of carbon emissions. Such an incentive could be created by a downstream system that determined allowance requirements on the basis of monitored emissions. An upstream system could provide incentives for sequestration if firms were allowed to meet their allowance requirements by paying for downstream sequestration.

Capping greenhouse gas emissions would impose costs throughout the economy: entities would pay for those costs in the form of higher prices, reduced profits, and lower wages. At the same time, the pool of allowances would have substantial value to those who hold them. Policymakers would need to decide whether to sell the allowances to regulated firms, to give them away, or to implement a combination of the two.

Selling allowances rather than giving them away would not increase the overall economic costs of the cap-and-trade program but would provide an opportunity to use the allowance revenue to reduce other economic distortions. For example, policymakers could use the new source of revenue to reduce existing taxes that tend to slow economic growth (that is, taxes on productive inputs such as capital and labor); to decrease the federal debt; or to fund other government objectives (which otherwise would rely on taxes on productive inputs). As a result, the level of economic activity could be higher if policymakers sold some of the allowances than if they allocated them all at no cost.

Alternatively, policymakers could give some allowances (at no cost) to select firms or individuals to offset the costs that they would incur under the new regulations. Decisions about compensation are complicated by several factors:

- Determining who bears the costs of the cap is difficult. Regardless of whether allowances are sold or given away, the costs of the cap are distributed throughout the economy based on underlying supply and demand conditions.
- Decisions about allocating allowances can increase the overall costs of achieving the cap if they are linked to decisions that influence current emissions. Basing decisions about allowance allocations on historic amounts of production, consumption, or emissions would avoid that problem.
- The costs of the cap would extend beyond firms and consumers to the federal government. Provided that policymakers wanted the government to at least break even under the cap, they would need to reserve a share of the allowances to offset the government's program-induced costs.
- Workers in carbon-intensive industries, such as coal, cement, or aluminum, would be adversely affected if the cap reduced production of those goods. Allocating allowances (at no cost) to firms in affected industries would be likely to benefit the firms' shareholders but not the firms' workers.

Finally, the inclusion of a safety valve in the cap-and-trade program could help keep the economic costs of the program in line with the expected benefits of reducing emissions.

Submitter's Name/Affiliation: Peter B Danzig, PhD ***/Computer Networking Entrepreneur and Professor***
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Save as Summary_NAME (and insert your name or affiliation).

Since emissions are cumulative and remain in the atmosphere for a millennium, it's crucial to cut emissions quickly. The longer we wait, the more steeply we'll need to cut them in the future to hit any particular climate target. The US needs to achieve 75% global GHG reductions by 2050 to keep global climate from warming an expected 2-3 degrees C. My thesis is that it's essential to promote regulatory mechanisms in a mandatory market-based scheme, or else we will be unable to increase energy efficiency and drive the steep emission reductions needed.

Hybrid Regulation and Market Approach

Energy infrastructure financed today remains in place for fifty or more years. Since emissions are cumulative and remain in the atmosphere for up to a millennium, it's crucial to improve energy efficiency today to defer the need for new energy infrastructure until such time that we can de-carbonize it. California's experience demonstrates that regulatory agencies can reduce GHG emissions at negligible economic cost. California use half as much electric power per person as the rest of the nation due to the cumulative actions of the California Energy Commission. If the rest of the nation follows California's lead, we can halve GHG emissions from the country's electric sector solely by driving efficiency. I suggest a hybrid market based system that allows state energy commissions to create carbon credits, properly audited, through their regulatory actions. Then these commissions can sell credits to energy producers, in an upstream based approach.

I am concerned that a pure market approach, without agencies to consolidate small opportunities, may fail to capture efficiency gains made possible by regulation. Let me present an example. California recently regulated the reflectivity of roofing material. The new roofing materials drop home air conditioning needs by 10-15% without significantly increasing roofing cost or decreasing choice of roofing color and texture. How can we capture this opportunity in a pure market based system? Certainly individual consumers cannot sell micro-carbon credits, based on their choice of roofing material. We need agencies to drive industries to increase the energy efficiency of its products; otherwise industries lack market pressure to design more efficient products. Suppose a state regulates its rooftops. It estimates their carbon value using the mechanisms established by this legislation, sells these credits, and passes these on as consumer and builder rebates?

Submitter's Name/Affiliation: National Carbon Offset Coalition (NCOC)
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The NCOC is responding to question 2d Set Aside programs. It is the position of the NCOC that terrestrial based carbon sequestration projects can provide the United States significant early reduction offsets. Terrestrial offsets can provide a bridge to the development of new technologies, create a potential new source of revenue for landowners, state and tribal governments, provide significant local environmental and social benefits while providing an example of a positive response to climate change for any public awareness program developed to speak to the issue.

The measurement, monitoring and verification (MMV) issues cited in the Climate Change White Paper are being addressed by organizations such as the NCOC in regional terrestrial carbon sequestration field tests and a large scale national demonstration program can and should be implemented

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Submitter's Name/Affiliation: William Tokash/Debbie Stowell, DOMANI
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

DOMANI, a sustainability consulting firm with offices in Denver, Chicago, and New York, has compiled a response that focuses on Question 1, regarding Point of Regulation, and Qualifying Question 1a, regarding the objective of Congress's program (i.e., should the program be economy-wide in focus or limited to a few select sectors).

In short, our response suggests that Congress consider a hybrid downstream-upstream approach to a greenhouse gas program. Such an approach will balance manageability with broad applicability, while also creating sufficient incentive to change behaviors at the end-use level of the energy value chain. In addition, DOMANI suggests that the program include an aggressive emissions credit "opt-in" component whereby smaller "unregulated" sources would be able to monetize energy efficiency reductions or other "offsets" should they choose to. This approach will likely be more efficient than a cost cap at keeping the cost of carbon low and influencing end-user behavior.

Submitter's Name/Affiliation:
Dr. Blair Henry, President, Northwest Council on Climate Change
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Phone: 218-230-4024

Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

I respectfully submit

1. Key Missing Element - Declaring a Specific Goal - Establishing a specific global and national goal is absolutely critical here in the beginning – and no such goal exists today. Proposed goals range today from stabilizing atmospheric CO2 concentrations to levels ranging between 350 and 550 parts per million volume (ppmv) - currently 377 ppmv. Some related proposals range from maximizing the increase in average global surface temperature since the year 1750 from 0 to 3° C (or 5.4°F) – already up over 1.5°F.

2. Question 1 - Targeted Emissions – Approximately 85% of all U.S. greenhouse gas emissions come from only three fossil fuels – coal, oil and natural gas – used in only two sectors – electricity and transportation. The primary sources of these fuels is likely limited to less than 100 companies and could more easily be addressed at that upstream level.

3. Question 3 - Trading
To (a) Ensure all trading is legitimate, uniform, transparent and verifiable (b) Minimize the impact on the U.S. economy and (c) Acknowledging all greenhouse gas emissions end up in the global inventory regardless of geographic source, I respectfully recommend the nurturing, developing and using a legitimate, uniform, transparent and verifiable international market of emissions trading..

4. Question 4- Participation by Other Countries
I respectfully suggest the United States design a model that other countries will want to participate in – either through incentives or through penalties. Based on actual political experience to date, I believe it is highly imprudent and dangerous for the United States to make its participation conditional based upon the actions, or inactions, of others.

Thank you!!
Dr. Blair Henry
blairhenry@nwclimate.org
218-230-4024
[end]

Submitter's Name/Affiliation: Skiles W. Boyd/DTE Energy
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DTE Energy is not currently advocating a mandatory climate change program. We support voluntary activities to reduce, avoid or offset emissions and will continue to take reasonable actions to further reduce the impact of our operations. However, in the event the federal government decides to pursue development of a mandatory program we offer the following comments for consideration.

U.S. climate policy must be scientifically valid, environmentally effective, economically efficient and politically viable to provide long-term benefits. It must provide a path for success for the majority of parties involved and must not be unreasonably disruptive to the economy. This is a high standard, but one we believe is necessary to achieve a lasting agreement.

Climate change is not just an electric generation issue. It affects the transportation industry and all energy users. DTE Energy believes that any successful climate change policy needs to balance environmental and economic concerns. It requires paced implementation. And it must be achievable at a reasonable cost. A thoughtful, measured approach will help minimize the unintended consequences of moving forward too quickly and cutting emissions too deeply.

Any approach to address global climate change must maintain a diverse mix of energy sources. For the foreseeable future, coal must continue to play a major role as the most abundant and affordable power plant fuel in the U.S.

Longer term, technology will drive meaningful change. Financial incentives will speed this process. It is only with major technology breakthroughs that GHG emissions can be significantly reduced. These breakthroughs may come in the form of geological sequestration, advanced nuclear energy, renewable energy, or development of a hydrogen-based energy system.

Biological sequestration and other emission offset activities will play an important role in bridging the gap to the development of improved technology. While it often takes years to significantly contribute to removal of carbon dioxide from the atmosphere, we believe biological sequestration is an appropriate near-term action. Accounting practices should be modified to encourage its use.

Any approach must include developing countries along with developed countries. Without full participation, emission decreases in one country will be negated by emission increases in another. We understand the economies of developing countries may warrant different climate change approaches and goals. But every nation must participate in this effort at some level.

DTE Energy endorses the detailed comments submitted by the Edison Electric Institute and Generators for Clean Air.

Submitter's Name/Affiliation: **Duke Energy Corporation**
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Executive Summary of Responses by Duke Energy Corp. to Questions Posed in the February 2006 White Paper Entitled "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System"

The key points in Duke Energy's responses to the White Paper are summarized below:

Question 1 – Who is Regulated and Where?

- A GHG regulatory program should be *economy-wide*. A "comprehensive and effective national program" on climate change, as endorsed by the Sense of the Senate resolution, must have economy-wide coverage. Exclusion of sectors or GHGs from a program would be unfair and economically inefficient, and would reduce program effectiveness.

- For CO_2 emissions, the point of regulation should be *upstream*. An upstream approach allows maximum coverage of a GHG policy. Downstream and other approaches would likely result in more limited coverage, fragmented program approaches, economic inefficiency and greater administrative complexity and costs.

Question 2 – What Should Be Done with Allowances?

- Some allowances should be allocated as necessary to mitigate significant economic dislocations resulting from GHG policy. The critical inquiry is determining which entities incur significant costs as a result of the climate policy, not which ones are directly subject to the regulatory requirements.

- Point of regulation and receipt of allowances should be delinked. Decisions on who receives allocation of allowances can and should be independent of decisions on the point of regulation. For instance, with an upstream system, certain downstream fuel consumers, although not directly regulated, may bear significant burdens without judicious allocation of allowances.

- Some allowances should be auctioned, with revenues used, for instance, to support research, development and demonstration of new, innovative technologies.

- Offset projects should earn credits from outside the allowance pool.

Additional Topics – Safety Valve and Sustained Gradual Emission Limits are Essential; Carbon Tax Should Also be Considered as a "Mandatory Market-Based System.".

- A U.S. policy should reduce emissions *gradually* over a long time horizon, beginning the effort in the near term.

- A GHG program should provide price certainty, *e.g.*, through a *safety valve* mechanism.

- The Committee also should consider a *carbon tax* approach. A well-designed carbon tax policy is a sound market-based climate change policy, providing economy-wide coverage, price certainty, gradual timing and administrative simplicity. Most economists believe a carbon tax approach is more economically efficient and less administratively complex than a cap-and-trade program.

March 13, 2006

Submitter's Name/Affiliation: Ed Mongan, DuPont
Contact: Michael Parr
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Phone:202-728-3617

Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***
DuPont is pleased to respond to the four questions posed. Our experience with GHG reductions have included a 72% global reduction in our own GHG emissions and having held our energy use flat over the last decade while expanding our global production by 36%.

The actions required to address global warming are global, broad, long term, and raise significant economic challenges, from increased energy prices to distorting competitive pressures. Response will be a decades-long proposition; significant capital stock turnover and the development, demonstration and commercialization of new technologies will be required. A long term perspective, with flexibility to respond to unintended consequences, will be required.

For any potential US GHG program, an economy-wide approach is needed with all sectors participating to generate adequate GHG reductions. The differing elasticities and price sensitivities of the various economic sectors can produce significantly differing responses to price signals, both in terms of GHG reduction responses and competitive impacts. These make a pure upstream approach, while theoretically appealing, impractical.

While some posit that an upstream allocation is the simplest approach and therefore preferable to a more downstream and sectorally tailored approach, it is not clear that it is simpler. The economic dislocations caused in an upstream system by differential ability to respond to the resulting price signals requires rather complex downstream allocations or other mechanisms in response. It is not necessarily the case that an upstream system would, in reality, be less complex than a downstream allocation coupled with standards-based approaches for buildings and transportation.

A judicious blend of cap and trade for the manufacturing sector (including utilities) combined with hybrid efficiency/GHG standards-cap and trade systems for other sectors such as transportation and buildings may be a practical way to strike the needed balance. Large energy consumers such as the utilities and manufacturing should be allocated credits based on historical emissions.

We strongly endorse the concept of early reduction credits. The full basket of gases should be included in any system.

Any US GHG reduction program should be developed in a manner that expressly encourages the major developing economies to begin to implement policies of their own, as they will be the source of the greatest growth in GHG emissions absent such efforts. Linkage is important. The global economy needs to be able to seek the lowest cost reductions consistent with achieving the overall level of reductions needed in an economically sustainable fashion. These developing economies response to global climate change can also provide significant markets for US products and technologies.

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

The additional comments submitted are a collaborative effort and are submitted on behalf of the Competitive Enterprise Institute, FreedomWorks, the American Legislative Exchange Council, and the Free Enterprise Action Fund.

Our analysis of the premises underlying the White Paper concludes that the White Paper is based on several assumptions ("findings") which are not supported by the best available scientific and economic evidence. The White Paper thereby short circuits discussion of these underlying issues in order to arrive at the questions about how best to design a mandatory cap-and-trade regulatory regime to limit greenhouse gas emissions. In our view, a scrupulous assessment of the underlying assumptions would conclude that no mandatory reduction of greenhouse gas emissions is warranted by the evidence at this time. The additional comments review the first finding in detail and also discuss the assumption that the impacts of global warming are predicted to be adverse or negative.

Submitter's Name/Affiliation: William L. Fang/Edison Electric Institute
Contact: Same
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Phone: 202-508-5617

Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Under "Additional General Topics," the Edison Electric Institute (EEI) notes our support for voluntary technology- and carbon intensity-based approaches to the global climate change issue, and endorses robust budget support and implementation of the Energy Policy Act of 2005 (EPAct 2005). Our comments also emphasize the critical international dimensions of the climate change issue and the importance of investment overseas in technologies and best practices. We highlight a number of principles that should be used to evaluate proposals addressing the climate issue. While endorsing neither a mandatory cap-and-trade regulatory regime nor any of the specific proposals or concepts in the White Paper, our response raises some key factors that the Committee should bear in mind as it contemplates greenhouse gas (GHG) regulatory schemes, including: the stringency and nature of the targets and timetables; the availability of viable and cost-effective technologies; the incorporation of a safety valve; the availability of offsets; and the fact that a GHG emission trading system would be far more costly, complex and difficult to administer than the Clean Air Act title IV acid rain program.

In our comments in response to Question 1, assuming a cap-and-trade regime were mandated, we would strongly support an economy-wide approach. A sector-based approach would tend to focus costs unnecessarily and unfairly on one or more sectors of the economy. Regarding the most effective place in the chain of activities to regulate GHG emissions, we give two examples of different approaches but do not endorse either. It is important to note that the decision about the point of regulation is independent from the decision about allowance allocations.

In our comments in response to Question 2, EEI would strongly support allocations over auctions in any regulatory scheme. We provide a detailed explanation of our reasoning for supporting this approach. In addition to the set-aside for technology R&D and incentives, a substantial portion of the revenues raised by the safety valve should be segregated and devoted solely to climate technology RDD&D. The program should also contain provisions for credit for early action, baseline protection or both. There will be trade-offs and winners and losers under any cap-and-trade system, and it is important to recognize that the government cannot "compensate" everyone and eliminate all losers under a mandatory GHG regulatory regime.

In our comments in response to Question 3, we note that a safety valve should be instituted, even at the cost of linkage with other systems, since it would yield the far more important benefit of cost certainty. Regardless, the program should include robust offsets provisions. We also highlight a number of issues that need to be addressed for systems to interlink and benefit the partners involved and not lead to adverse impacts, including making the targets harder to reach.

In our comments in response to Question 4, we note that without comparable action by our key competitors – both developed and developing – U.S. mandatory reduction efforts would adversely affect U.S. trade and industrial competitiveness while doing little to address overall GHG emissions. In developing a mandatory U.S. program, it is important to ensure that it not be more stringent than binding actions by key emitting nations. It should also include a review

Submitter's Name/Affiliation: William L. Fang/Edison Electric Institute
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mechanism to ensure that U.S. actions would not be undertaken in isolation. Our response also raises a number of issues that should be considered in any evaluation review process, and notes that the timing of such an evaluation should be dependent on the specific targets and timetables of the programs being pursued by major emitting nations In addition, a GHG-intensity metric should be used to compare efforts across nations. We note that technology transfer to developing countries can achieve large near-term emission reductions by closing the gap in emissions intensity between developing and advanced economies, such as through the Asia-Pacific Partnership on Clean Development and Climate.

Executive Summary
Submitter's Name/Affiliation: Eugene Peters / Electric Power Supply Association

Submitter's Name/Affiliation: Electric Power Supply Association
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

The Electric Power Supply Association (EPSA) appreciates this opportunity to participate in the efforts of the Senate Energy and Natural Resources Committee to develop rational and effective policies to address the public concerns about global climate change. EPSA is the national trade association representing competitive power suppliers, including generators and marketers. These suppliers, who account for 40 percent of the installed capacity in the United States, provide reliable and competitively priced electricity from environmentally responsible facilities.

Any effort to regulate or reduce emissions of greenhouse gases is likely to have far reaching and intense economic impacts. However any climate change program is designed and implemented, the electric power supply industry is likely to bear a substantial burden. Our industry has steadily evolved over thirty years of regulatory reform and competitive innovation. This process is still underway. Across the United States, multiple regulatory models are employed and a range of rate-regulated and competitive firms interact on an hourly basis.

The Congress needs to understand that any program which imposes new costs and responsibilities on our industry will have serious competitive implications. There will be winners and losers. Congress needs to investigate seriously the competitive impact of these proposals and ensure a balanced program which encourages new ideas, economic efficiency and innovation, allows for new industry entrants and recognizes the diversity of market participants.

Our comments reflect these concerns. Accordingly, our submission focuses on the questions posed in section 2, which considers the costs of regulation and the possible use of emissions allowances. We believe that consumers will be best served by policies built around and supportive of competitive principles. This applies to R&D initiatives as well as the key regulatory mechanisms. In addition, Congress must be sensitive to the fact that providers of the same product – electricity – from the same resources face different economic pressures and costs simply because of the presence (or absence) of rate regulation.

EPSA recognizes the seriousness of the Committee's efforts and stands ready to assist the Congress as it moves forward to seek real policy solutions.

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Executive Summary

Entergy Services, Inc. ("Entergy") is hereby respectfully submitting comments on clarifying questions 2a (regarding Technology R&D and Incentives) and 2f (regarding Allocations for Downstream Electric Generators). With respect to both questions, the same commitment to fuel neutrality should be followed to the extent that either revenues are allocated to funds to encourage technology innovation and early deployment or that permits or allowances for carbon dioxide (CO_2) emissions are distributed within the electric sector. In brief, the fuel neutrality concept provides for economic rewards, incentives and penalties for generators based on their emissions. It codifies the principal that the polluter must pay for its actions, and recognizes the efficient, low emitting generator, through market price signals. It also balances in a sound manner important air-quality goals and the need for electricity, an essential service and the grist for the national economy. Thus, the visible price signal created by a fuel-neutral revenue allocation scheme provides the incentive to encourage cleaner, efficient new generation choices using market forces, rather than direct regulatory intervention.

With respect to the allocation of funds to encourage technology development, the allocation of such resources for the development of electric-generation facilities should be managed by those with expertise in electric-system reliability and market-pricing or rate concerns – most often the various state departments of public service. These agencies or departments – with a public mission to serve electricity consumers – are well positioned to allocate funds in manner that advances air quality goals, while ensuring, to the maximum extent practicable, that negative impacts to state and related electric-system function and electricity pricing are minimized.

Entergy supports an electric-output-based, fuel-neutral allocation for any CO_2 emission allowances or permits within the electric sector. Under this allocation methodology, the electric output (measured in MWH's) of electric generating facilities would be the basis of the allocation. Allocating allowances based on the electric-output rather than CO_2 emissions of generating facilities will help ensure that there are sufficient allowances – both with respect to *availability* of the allowances necessary for power stations to operate and the *price* of those allowances – for a cap-and-trade program to function effectively.

Providing allowances to all generators will lower the compliance cost for the most heavily impacted generators and will foster the liquidity and transparency of the CO_2 market. Further, the broader scope of participation created by allocating allowances to all generators, rather than just emitters, frees the market to provide for the lowest cost of compliance, and in turn, the least negative financial impact on ultimate consumers.

Submitter's Name/Affiliation: Environmental Defense
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Environmental Defense thanks Chairman Domenici and Senator Bingaman for the opportunity to comment on their white paper, *Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System.* We applaud the Senators' commitment to establish a mandatory system to limit U.S. releases of greenhouse gases into the atmosphere. As the Senators understand, the time for additional study and exploratory voluntary programs is over. It is time to determine the best policy design to meet the challenge of climate change by unleashing the power of innovation and extending incentives to reduce greenhouse gas emissions throughout the economy.

The Goal. The first principle of effective climate policy is establishing a clear emissions target related to the problem we are trying to solve. That problem is the increasing concentrations of greenhouse gases in the Earth's atmosphere, which are causing an accelerated warming of the planet. Alarmingly, Americans are now learning that this warming is producing effects around the globe far faster than most had expected. Therefore, we need to cap U.S. emissions of greenhouse gases sooner rather than later. A formula that would allow emissions to continue to rise for the next 15 – 20 years (albeit at a slower rate) is inconsistent with the goal of stabilizing the GHG concentrations in the Earth's atmosphere before there are irreversible, dramatic effects. Therefore, Environmental Defense urges the Senators to establish fixed limits on total greenhouse gas emissions, to take effect not later than 2010, so we do not continue to make the task of stabilizing concentrations even harder, more economically disruptive, and possible only at a higher level of concentrations (see response to Feinstein 1).

Innovation. Concerns about the potential cost to the economy from any sort of emission target are understandable – and should be a factor in determining the best overall policy. There are many policy design decisions that can help manage costs while maintaining a firm emission limit (see Additional). Environmental Defense believes the most powerful tool is the ingenuity of the American people responding to incentives from our market economy. A stable and predictable emissions limit creates the demand for emission reduction and offset technologies. Market demand and innovative entrepreneurs will provide a better mix of technologies that any government bureaucrat could choose. Similarly, the fundamental elements of emissions trading and banking in a competitive market serve to grind down cost far better than could any government program.

Agency Action. While it discusses the form of climate policy, Congress should use its oversight role to ensure Federal Agencies take sensible measures to enable emission reduction or adaptation measures such as:

- Establish standards and procedures for calculating and awarding emissions offsets from agricultural and forest practices to sequester carbon;
- Establish standards and safeguards for the geologic sequestration of carbon;
- Conduct regional studies on potential infrastructure impacts of climate change and associated adaptation strategies and costs.

Submitter's Name/Affiliation: Bob Epstein, Environmental Entrepreneurs
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

As co-founder of Environmental Entrepreneurs (E2 – www.e2.org), I would like to offer general comments on how climate legislation should be framed to best meet the challenges of global warming, in addition to responses to two of the Senate Energy and Natural Resources Committee's questions.

As business leaders, E2 supports strong global warming legislation and urges the establishment of mandatory, long-term goals for the reduction of global warming pollution as it will markedly increase economic benefits and market innovation versus legislation with only weak, short-term targets. Short-term targets do not provide businesses the long-term certainty and stability needed for effective and efficient planning and management, nor do they provide the market signal necessary to spur the innovation needed to develop the technologies, products, and systems required to effectively address climate change. In contrast, an established long-term emission reduction pathway enables companies to determine the best mechanisms for technology investments, allowing markets to function efficiently. In addition, if global warming remains an unresolved political issue, businesses will have to continue managing new legislative proposals, while still running the risk of crash reductions being imposed at a later date.

Ambitious and effective global warming legislation should include, in addition to long-term emission targets, the idea of "borrowing" as a cost-control device. Currently, proposed climate legislation as offered by Senator Bingaman (S.A. 868) during the energy bill debate last June would allow for a $7/metric ton of CO_2 "safety valve" to safeguard against unanticipated costs. Much like the offsets prescribed by other pieces of climate legislation, this safety valve would allow mandatory caps to be broken, but lacks a process to account for excess emissions. However, allowing emitters to borrow on future emissions allowances and repay this debt with interest would help to preserve long-term caps while stabilizing costs and insulating companies from potential price spikes.

In regards to the committee's specific inquiries, we offer responses to your first two questions:

1. We assert that a successful greenhouse gas reduction program would benefit from an economy-wide approach, which would send market signals across the economy as a whole and spur new economic innovations and growth.
2. We also assert that the effectiveness of global warming legislation would be increased if carbon allowances were directed towards developing and deploying clean technologies in an effort to further fund technologies that reduce global warming pollution.

Thank you for your consideration of our comments. If the committee would find it beneficial to have one of our members testify at the April 4th hearing, we would be happy to provide someone.

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The Electric Power Research Institute (EPRI) has been actively engaged in climate policy research for almost 20 years. Our role is not to advocate specific policies, but to examine the implications of alternative policy choices so that we can inform public debate and private decision making. Two key perspectives guide our comments, the first being the critical importance of economic efficiency – achieving an environmental goal at least cost. Allowing emission reductions to be made when and where they are most economic along with inclusion of all greenhouse gases are fundamental tenets of economic efficiency.[1] The second key perspective is the realization that current policy proposals are an early step in addressing the issue of climate change. The ultimate effectiveness of a climate policy will be determined by its ability to provide the technologies necessary for making the transition to a low greenhouse gas emitting economy and how it evolves over the coming decades into a coordinated, international effort.

Question #1: Who is regulated and where? Economic analyses suggest that a cap-and-trade system should have as broad coverage as possible for at least three reasons: 1) to achieve any specified near-term greenhouse gas emissions target at lowest cost, 2) to make stabilization of greenhouse gases feasible, and 3) to allow the longer-term fundamental transformation of the energy system that is required to stabilize concentrations of greenhouse gases in the atmosphere. The point of regulation is: 1) not important from the perspective of environmental effectiveness, 2) not particularly important from the standpoint of economic efficiency (as long as coverage is the same), 3) very important in determining administrative feasibility, complexity and cost, and 4) independent from the decision about permit allocation.

Question #2 relates to allocation of permits without cost. Allocation of allowances without cost: 1) is unlikely to impact significantly the cost of the policy, 2) can partially or wholly offset large redistributions of income created by the policy but will likely require a significant fraction of permits,[2] and 3) should likely be revisited over time. While economic literature provides many insights into choices that affect cost-effectiveness, it provides little guidance about how costs should be allocated.

Question #3 relates to the importance of linkage with other trading systems. Climate change is a global issue. The potential benefits of integrating a U.S. trading system with other climate policies being implemented around the world are huge – it fosters engagement and cooperation with other countries, it can potentially provide substantial savings in policy cost, and it does not weaken the environmental integrity of a program.

Question #4 asks whether legislation should condition U.S. actions on comparable actions by others. The sequencing of country participation is both a strategic decision and one of equity. However, it is clear that stabilization of emissions, much less atmospheric concentrations, cannot occur without substantial participation by developing countries.

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[1] See Appendix A for a description of when, where, and what flexibility.

[2] There are a few published studies that suggest that companies' lost profits can be compensated by allocation without cost of a small fraction (e.g., 5-10%) of total permits. These theoretical findings depend on a number of idealized assumptions that are not likely to hold. Implementing such an approach is problematic.

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Appendix A

Economic analyses have shown that, whereas sizable emission reductions may entail substantial economic costs, the size of the costs can be reduced by measures designed to ensure economic efficiency. Specifically, providing flexibility as to "when", "where", and "what" gases are reduced can lower the costs of meeting stabilization goals.

When: Since climate change is a century-scale, cumulative emissions issue, flexibility in the timing of emissions reductions is critical for economic efficiency. Figure A-1[3] shows how an atmospheric CO2 concentration target may be achieved through either a rapid or a gradual transition to lower-emitting technology. An approach that permits gradual reductions initially with steeper reductions later has the smallest economic impact because a smooth transition minimizes the premature retirement of capital and allows time for the development and deployment of more advanced technologies that hold the promise of providing large, relatively inexpensive reductions by mid-century. To ensure that these options are available, however, public and private investment in energy technology development and deployment must be increased substantially over current levels in the very near term.

Where: Since the atmosphere is a commons, it does not matter where emissions are reduced. Policies offering flexibility in where emissions reductions occur yield significant economic benefit. Many of the lowest-cost potential emissions reductions are in developing nations like China, where substantial growth in generation capacity is planned, much of the current energy technology is dated and inefficient, and coal plays a large role both in direct use and in the generation of electricity. Policies employing "where" flexibility would enable the United States and other developed countries to obtain some credit for assisting developing nations in reducing emissions, helping achieve an agreed-upon international environmental goal at lower cost. See Figure A-2.

What: There are six categories of greenhouse gases (GHGs). While there is an understandable focus on CO2, reducing emissions of methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) is also important. Methane, for example, leaks from natural gas pipelines, landfills, and coal mines. The economics of capturing this wasted gas can be attractive. Figure A-3 highlights the economic advantages of including other GHGs in climate policymaking.[4]

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[3] Studies typically present quantities of CO2 in either "tons of CO2" or in "tonnes (metric tons) of carbon". Our responses present results in the same units as the source material from which they are drawn. To convert from tonnes of carbon to tons of CO2, multiply by about four (e.g., global emissions of 6 billion tonnes of carbon are equivalent to 24 billion tons of CO2). Conversely, to convert $/tonne of C to $/ton of CO2, you divide by four (e.g., $240/tonne C is roughly equivalent to $60/ton of CO2).

[4] These economic efficiencies are unlikely to be realized if reduction targets are set based upon total GHG emissions, but procedures are in place for counting only CO2 emissions reductions – as is the case for some proposed policies.

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Finally, we note that there is an important distinction between the three flexibility mechanisms and the question of "who" pays. The issues of when, where, and what pertain to cost-effectiveness. Science and economics can contribute considerably to this debate. The issue of who pays is a question of equity and a matter for the political process. Nevertheless, it is essential that all major emitting countries participate. Analyses have consistently shown that developed countries cannot reach stabilization without the help of developing countries. See Figure A-4.

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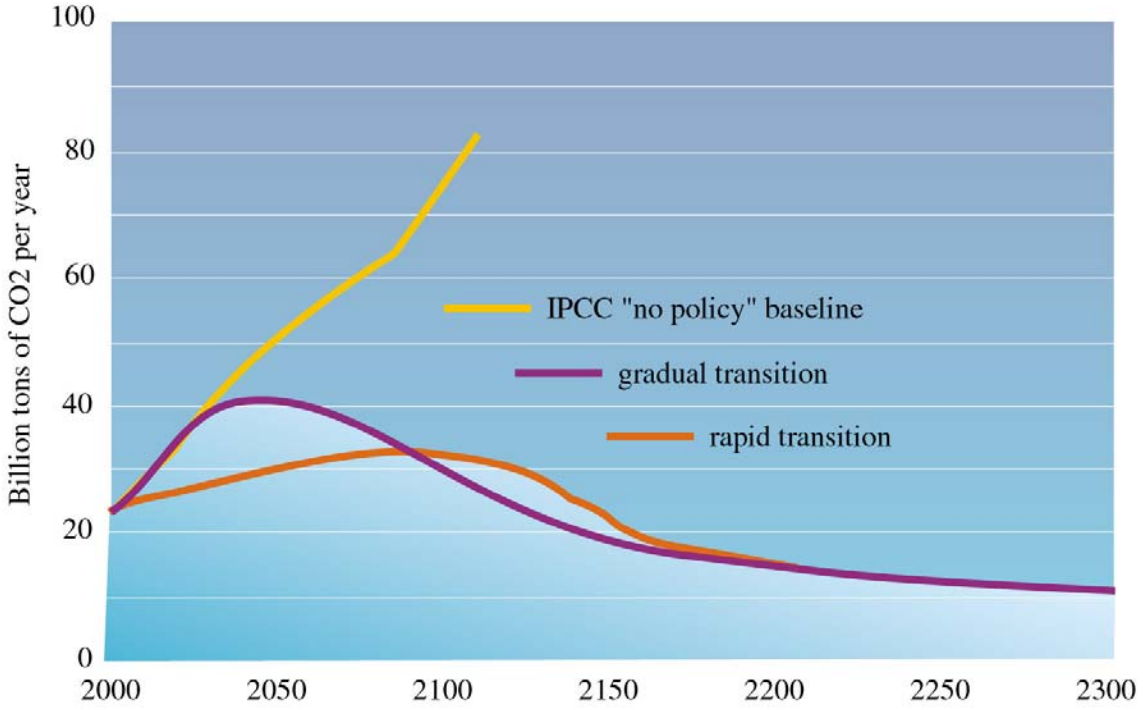
Figure A-1. Alternative emissions profiles for stabilizing atmospheric concentrations at 550 ppm. A concentration target may be achieved via many alternative emissions pathways. The environmental implications of alternative pathways to a concentration target are similar, but flexibility in the pace of the transition may have significant economic benefits. Flexibility in timing reduces premature retirement of capital stock and allows time for improving low- and no-emission technology choices.



Source: Wigley, T., R. Richels and J. Edmonds, 1996: Economic and environmental choices in the stabilization of atmospheric CO2 concentrations. *Nature*, **379**, January 18.

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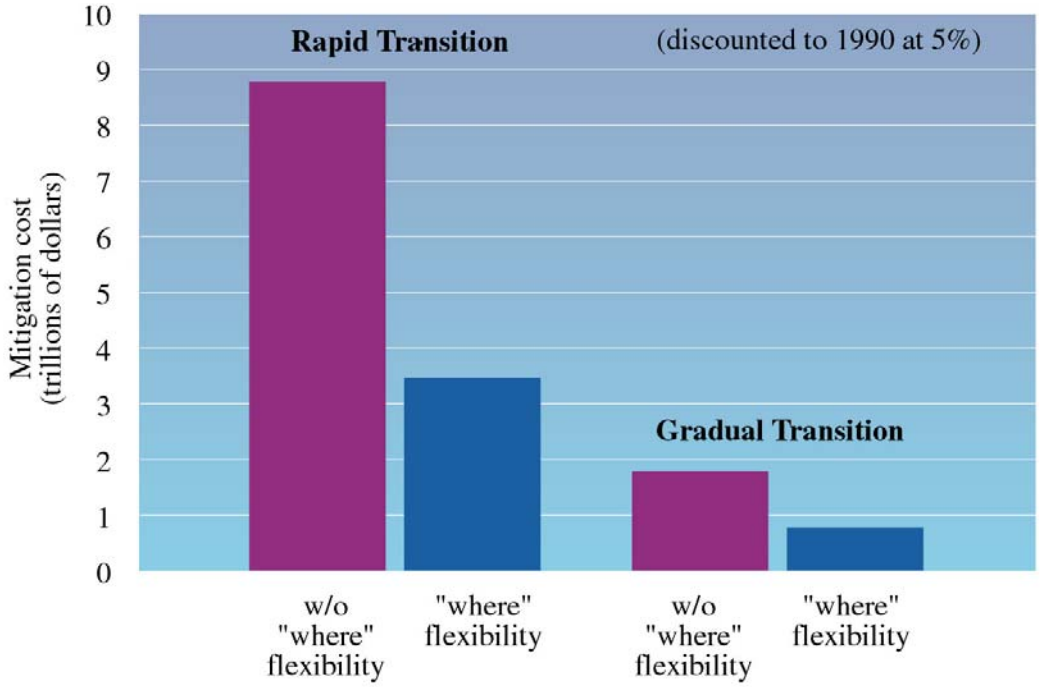
Figure A-2. Global costs of stabilizing concentrations at 550 ppm. While the environmental effects of a rapid transition or a gradual transition to a concentration target are likely to be very similar, the costs of the two pathways differ dramatically – illustrating the benefits of "when" flexibility in climate policy. Policies offering flexibility in "where" emissions are reduced offer additional economic efficiencies.



Source: Manne, A. and R. Richels, 1997: On stabilizing CO2 concentrations – Cost-effective emissions reduction strategies. *Environmental Modeling and Assessment*, **2**, 251-265.

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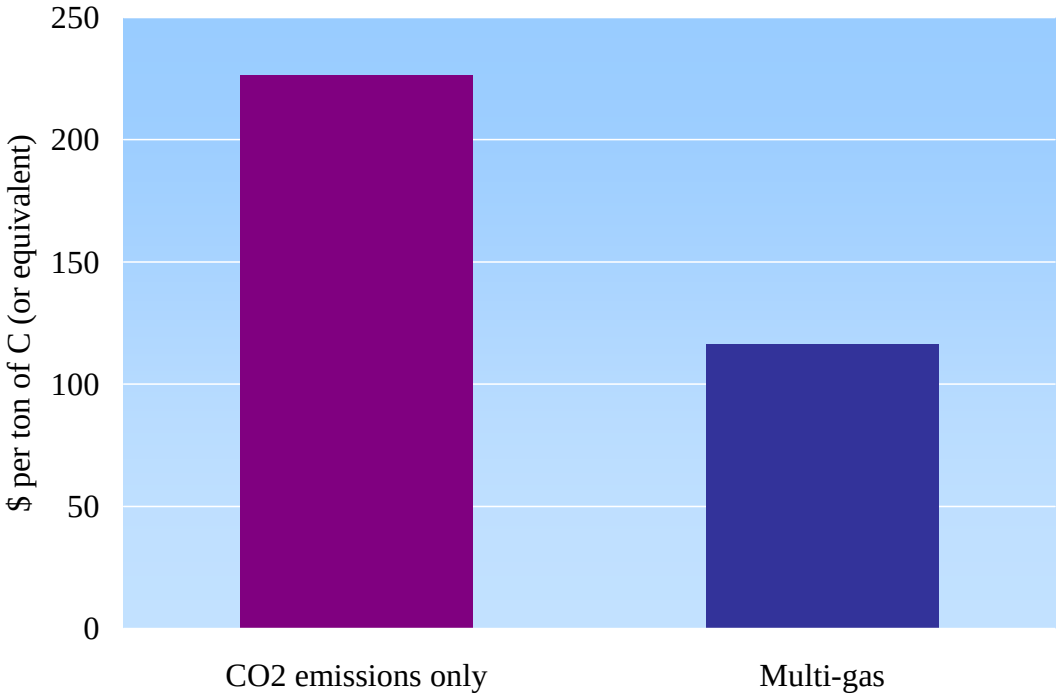
Figure A-3. Global cost of emission rights under a Kyoto policy for a CO2-only approach and a multi-gas approach.



Source: Manne, A. and R. Richels, 2000: A multi-gas approach to climate policy – with and without GWPs. FEEM Working Paper 44.2000, Social Science Research Network.

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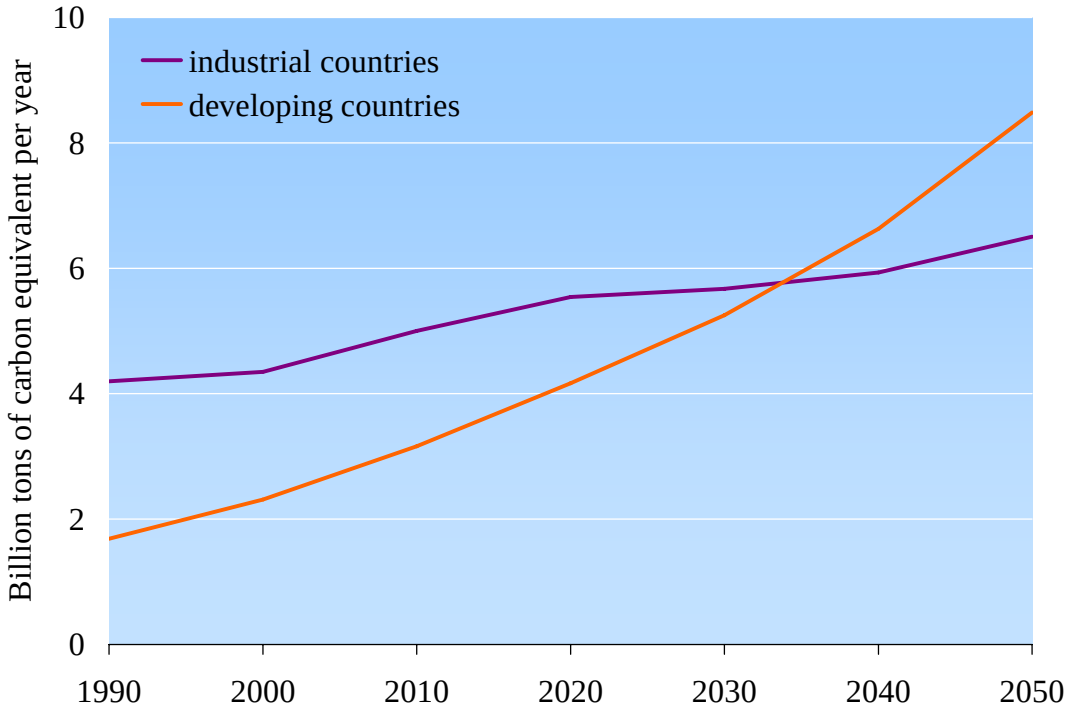
Figure A-4. Growth in carbon emissions by region. If current trends continue, developing world greenhouse gas emissions will surpass those of industrialized countries in the next several decades.



Source: National Commission on Energy Policy: 2004. *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges*. Washington, DC. (Figure 2-5 (Global GHG Emissions) from A. Manne and R. Richels, 2004.)

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Executive Summary

Question 1

An economy-wide program is the best approach to reducing U.S. GHG emissions. This approach would avoid economic distortions across fuels and within domestic sectors. While some may argue that limiting the programs to select downstream sectors would be more expedient, it would likely displace or shift emissions rather than reduce overall U.S. or worldwide emissions. An economy-wide program will reduce GHG emissions from the lowest cost sources within the economy, causing the least economic disruption.

Upstream point of regulation for GHG emission reductions best assures administrative simplicity and program effectiveness. Upstream point of regulation assures that carbon from all fossil fuel sources is included, and lessens the administrative burden by limiting the number of regulated entities. While seemingly attractive in certain sectors, downstream or hybrid point of regulation is inherently more complicated from an administrative perspective and increases the potential for economic distortions among fuel sources and among economic sectors.

Question 2

To assure that the sudden adoption of a mandatory greenhouse gas program would not impose an undue economic burden on energy end users, policy makers should design a program that gradually transitions from free emission allowances to an auction. An example would be a program that begins by distributing 90% of allowances for free to mitigate fossil fuel price increases and un-reimbursed program costs during a defined transition period. The remaining 10% of allowances would be sold at auction, with the auction proceeds used to fund other public policy objectives, such as research and development, low income assistance, adaptation development, etc. Over time (say 40 years), free allowances would be phased out, and the percentage of auctioned allowances would grow to 100%.

There is no single set of criteria or method that would satisfactorily allocate free allowances across the entire economy. Allocations would have to be performed by an administrative agency that had the authority and resources to consider a wide variety of regional, industry and company specific factors. There nonetheless are a number of common principles that the agency should apply in performing allocations, suggestions for which are enumerated in our response.

In the electricity and natural gas sectors, allowances should be allocated to state regulated electric and gas distribution companies, rather than electrical generators, to assure that end users and consumers, who will see the price of greenhouse gas regulation in their energy bills, get the benefit of the free allowances. As a general principle, free allowances should not be given to other entities to further other public policy objectives. Limiting the distribution of free allowances in this way would protect against both windfalls and undue economic burdens.

Questions 3 and 4 – See the attached documents for responses to these questions.

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The U.S. Public Interest Research Group (U.S. PIRG) is the national advocacy office of the state PIRGs, a network of state-based, citizen-funded organizations that advocate for the public interest. Two key aspects of our mission are to protect the environment and safeguard consumers in the marketplace.

While we appreciate the opportunity to respond to the questions posed by Senators Domenici and Bingaman, the senators fail to ask the fundamental question of what level of emission reductions should a program to limit global warming emissions achieve and on what timeline. If a goal of the regulatory program envisioned by the senators is to "avoid destructive interference with the world climate system,"[1] then environmental effectiveness and ecological certainty must be central design elements of the program.

Almost 15 years ago, the U.S. and most nations of the world agreed to the United Nations Framework Convention on Climate Change, with the ultimate objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that prevents "dangerous anthropogenic interference" with the climate system.[2] Avoiding dangerous consequences requires substantial near-term emission reductions; otherwise, we will not be able to stabilize greenhouse gas concentrations at or near 400 parts per million, which research suggests is needed to avoid dangerous climate change.[3]

Unfortunately, the "Climate and Economy Insurance Act," which Senator Bingaman filed last year as an amendment to the Energy Policy Act of 2005 (H.R. 6), would allow global warming pollution to increase by 35 percent over the next 20 years.[4] Even if Congress used the bill's fast-track mechanism to strengthen the program in future years, the structure of the bill limits its ability to ever achieve the near-term emission reductions. Indeed, the Energy Information Administration (EIA) recently analyzed more stringent emissions intensity targets and permit prices than those included in the Bingaman legislation and found that emissions would increase through 2030 in all but one scenario. Under every scenario, emissions failed to fall below today's levels through 2030, the final year of EIA's analysis.[5]

Congress should reject this approach and instead develop and support a science-based solution that reduces emissions from today's levels and puts the country on the path to achieve the long-term emissions reductions needed to stop the worst effects of global warming.

[1] Senators Pete V. Domenici and Jeff Bingaman, *Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System*, 2 February 2006, 2.
[2] United Nations, *United Nations Framework Convention on Climate Change*, Article 2, 1992. See also Michael Oppenheimer and Annie Petsonk, "Article 2 of the UNFCCC: Historical Origins, Recent Interpretations," *Climatic Change*, 73, 195-226, 2005.
[3] Mike Meinshausen, "What Does a 2°C Target Mean for Greenhouse Gas Concentrations? A Brief Analysis Based on Multi-Gas Emission Pathways and Several Climate Sensitivity Uncertainty Estimates," in Hans Joachim Schellnhuber et al. (eds.), *Avoiding Dangerous Climate Change*, (Cambridge: Cambridge University Press, 2006), 266-279.
[4] See U.S. PIRG, *The Climate and Economy Insurance Act: An Environmental Critique*, March 2006, available at http://uspirg.org/uspirg.asp?id2=22623.
[5] U.S. Department of Energy, Energy Information Administration, *Energy Market Impacts of Alternative Greenhouse Gas Intensity Reduction Goals*, March 2006, Table 2b, page 12.

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FirstEnergy supports a voluntary, technology-based approach to climate change. FirstEnergy is committed to achieving future voluntary CO_2 reductions through fuel diversity, sequestration, increased use of renewables, energy efficiency programs and electrotechnologies. In the absence of specific CO_2 reduction targets or implementation timelines, we are planning and acting thoughtfully and with foresight. We are taking steps to reduce our future levels of CO_2 emissions by altering our generation portfolio – from adding renewable energy sources to increasing our non-emitting nuclear generating capacity.

FirstEnergy has addressed each of the four questions posed in the Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System presented by Senator Pete V. Domenici and Senator Jeff Bingaman. Any approach to reducing greenhouse gas emissions needs to be implemented economy-wide to be fair, effective and send market signals necessary to make real progress in controlling greenhouse gas (GHG) emissions globally. In terms of the electric generation sector, FirstEnergy believes that an output-based, generation-neutral methodology in which allowances are allocated based on the total megawatt hours of energy produced irrespective of fuel source will encourage greater efficiency as well as encourage non-emitting generation over the long term. Under such an approach, allowances would be allocated to reflect the economic value of a generating unit's output, thereby, encouraging the use of non-emitting generation technologies, including renewables and nuclear, and overall efficiency in our industry sector.

A U.S.-only GHG regulatory system may not lead to implementation of cost-effective foreign reductions which have been widely identified or have any meaningful impact on global greenhouse gas emissions. Participation by all key emitters, in all industries, in all countries contributing to global greenhouse gas emissions, is crucial to positively impact any effects on the climate. An effective program must support international cost-effective reductions and include developing countries. Such a program should consider a variety of design elements necessary to address economic efficiency, competitiveness and compatibility.

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The Honorable Senators Pete V. Domenici and Jeff Bingaman and Senate Energy staff members are to be commended for production of a comprehensive and thoughtful white paper.

Climate change is a complex, controversial, global issue. Responding to this issue will fully test the trade offs between energy security and environment, and between traditional regulatory and market-based approaches, which are already inherent throughout the US energy system.

A mandatory market based system must be carefully designed so as to minimize undue distortion across the dynamic and interconnected US energy value chains and within the overall economy. "Mandatory" participation in a market-based approach is a paradoxical concept. The design of such a system must avoid classic pitfalls such as overt redistribution of income and other distortions to the detriment of properly functioning free and competitive markets.

It may be better for the Senate to consider a broad based carbon tax, well designed with pooled revenues directed through market-based mechanisms toward critical activities that mitigate GHG while ensuring US energy security.

While there are many arguments that could favor a GHG program, climate research should also continue. Scientific evidence and understanding of long term climate change, short term weather events, and the role of atmospheric chemistry relative to other variables continues to evolve. Public policy must continue to be sensitive to new and contradictory information.

The US energy system is amazingly diverse with regard to energy sources and technologies. However, no reasonable forward outlook is available to suggest that US, or global, reliance on fossil fuels will deviate far from present allocations. The US, North America, Western Hemisphere, and many other prominent energy supply regions hold abundant resources of fossil fuels, any or all of which can be used with minimal environmental disruption to meet energy needs and provide ample energy security until the next energy technology future is reached.

The use of fossil fuels will require appropriate mechanisms for disposition of GHG emissions. Importantly, and missing from the white paper, is that the only large scale CO_2 storage option presenting minimal risk to environmental values and quality and safety of life appears to be geologic storage. Issues remain with indemnifying liability as well as providing appropriate measurement, monitoring and verification (MMV).

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The New Jersey Board of Public Utilities ("NJBPU") commends the U.S. Senate and this Committee for seeking effective and affordable solutions to global climate change and, specifically, for recognizing that a federal system of mandatory limits aimed at slowing – and then reducing – emissions from fossil fuels is a key step in responding to the dangers of global warming. By leading the nation in examining the international problem of greenhouse gas emissions, the U.S. Senate is recognizing a crucial fact: The problem of greenhouse gas emissions is best addressed at a federal level. This has proven true not only with regard to global warming, but also, for example, with the U.S. Department of Energy's successful mandatory acid rain controls.

The NJBPU thanks the Committee for allowing it to submit these comments. Because of our expertise both as a regulator of the electric industry and as a founding member of the Regional Greenhouse Gas Initiative ("RGGI"), our comments focus on allocation approaches for carbon dioxide allowances in a "cap-and-trade" program for electric generators. Although our comments may overlap with various topics discussed in the clarifying questions, our response is meant as a general response only to Question 2. The NJBPU's comments are summarized below:

- The cost of complying with a carbon constraint will increase the cost of wholesale power, since fossil-fired units are typically the marginal unit. In a market-based structure, this increase in wholesale power prices will increase revenue for all generators, even those that are not subject to the cap-and-trade program.

- Allocating all allowances to generators will not reduce the aggregate cost of complying with a carbon constraint, nor will it save electricity ratepayers money. In a competitive market, generators subject to a cap-and-trade program factor in the cost of grandfathered (free) allowances into their bid price, since these allowances have a value and can be sold in the allowance market. The decision to generate would use up allowances, and therefore imposes an "opportunity cost"; allowances that are expended cannot be sold in the market and therefore potential revenue is lost. As a result, grandfathering of allowances does not result in lower electricity prices relative to other allocation mechanisms.

- Because of the above facts, a public benefits allocation can reduce the aggregate cost of complying with a carbon cap, and increase program effectiveness by providing unprecedented integration of support for end-use energy efficiency into a generator-focused cap-and-trade program. This would facilitate integration of supply-side and demand-side efforts to address the reduction of carbon emissions through a comprehensive, least-cost approach, without requiring utility ratepayers to bear the cost of increased funding for energy efficiency programs. Recycling allowance revenue into programs that reduce electricity load growth will result in greater emissions reduction benefits achieved at lower cost, thereby reducing the impact on electricity customers.

writer for “Business and the Environment”
formerly with Massachusetts Department of Telecommunications and Energy

1. Who Is regulated and where?

I believe the program should be simple, comprehensive, and fair.

The economy-wide approach is much to be preferred. Regulating only some sectors will distort the effect and impose undue costs on some sectors (the regulated ones) at the expense of other sectors.

The upstream approach seems far preferable to me

2. Mitigation & Allocation

The cap-and-trade program would be best served by two features that I did not find mentioned in the white paper.

First, it seems wise to ease the transition to a stringent regime. To that end, I suggest that the total number of allowances rise slightly, ever more slowly in the initial years. Then the total number of allowances should fall, slowly at first, then more rapidly for the following decade. In the out years, it should fall by 3% each year.

Second, In order to gain support to enact the legislation, I suggest that a price cap be enacted for the first 10 to 15 years. Allowances, above those specified in a schedule such as that set forth above, should be available from the federal government for quite a substantial price. I suggest the initial price be 1.5 or 2.0 times the average trading price for carbon allowances in the European market. A price cap should escalate faster than general inflation.

Costs should be mitigated at little as possible and for not long. Mitigation naturally favors some sectors – those whose costs are mitigated – over others. This not only provides them a competitive advantage, but serves to undermine or distort the effects of the program

Any mitigation be phased out, gradually and within a few years

c. Consumer Protections

Some assistance should be provided to low-income consumers to buy and use more efficient equipment, even more efficient vehicles. Reimbursement for costs of consumption is money not nearly as well spent.

d. Set Aside Programs

I believe that allowances should be set aside to fully compensate those who have already taken programmatic actions to reduce their emissions, such as DOE 1605b. Further, I believe that the cap-and-trade program should fully allow trading, and banking of allowances. It should also allow verified offsets

e. Fossil fuel producers

I believe that neither downstream electric generators, fossil fuel producers, nor energy intensive industries should receive special consideration. However, I expect that they will. In such case, mitigation should initially be modest and decline gradually to nothing in no more than 10 years.

3. Should the system be designed for international trading?

Absolutely, it should. Many are the opportunities to reduce carbon emissions in other countries more cheaply than can be done here. Such “offsets” should be verified. American rules should not be inconsistent with rules used by other nations.

4. No comment.

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1. **Point of regulation:** Ultimately, an economy-wide system that would include all sources, sectors and GHGs would be most equitable, but in reality, the complexities of implementing an economy-wide system initially could create substantial disruption to the US economy and an overwhelming administrative burden for the government, while not optimizing the outcome for any sector of the economy.

2. **Allowance allocation:** Assuming a cap and trade system is adopted: The cost of regulation should be mitigated to minimize impacts on economy, and allowances are an appropriate mechanism for achieving this result. Most allocations should be provided free in the early stages. An appropriate percentage of allowances should be reserved for R&D and to stimulate early adopters that deploy newer, cleaner technologies in the electricity generating sector, including new nuclear, IGCC and renewables and cleaner, more efficient transportation technologies.

3. Linkage: By connecting with other GHG trading systems around the world, the US can achieve the greatest emissions reductions at the lowest cost.

4. **Encouraging Comparable Action:** It is important for major developing countries to participate in GHG reductions, and the NCEP plan represents one approach to achieving that objective. The most useful metrics in comparing programs would be the countries' percentage change in GHG emissions – both in absolute terms and relative to their change in GDP. There are a number of steps the US could take to encourage participation by developing countries.

Additional Topics: 1. GE supports development of market-based programs to slow, eventually stop, and ultimately reverse the growth of emissions of greenhouse gases (GHGs). The program should not unreasonably inhibit growth, as growth coupled with incentives will provide the resources necessary for industries to modernize with cleaner, more efficient technologies. The design of a market-based program needs to carefully consider the impact on the national goal of energy security and our need to expand our utilization of abundant, indigenous coal. The most critical element for any program, whether economy-wide or sector-based, is inclusion of a mechanism that assures that carbon is priced in the energy equation. 2. Climate change can most effectively be addressed by technology. Technology-forcing incentives and requirements are a necessary element of any program. If the program's objective is to slow, eventually stop, and ultimately reverse the growth in emissions, public policy should encourage parallel efforts (a) to accelerate deployment of existing, proven lower emitting technologies to slow emissions, and (b) to encourage development of next generation, break-through technologies to stop and reverse emissions. GE has a range of technologies in both the electricity generating and transportation sectors and in consumer and industrial applications that are cleaner and more efficient. These technologies could help to slow the growth in GHG emissions. 3. We recommend that the Committee consider an independent evaluation of the benefit of implementing a comprehensive program of GHG reductions on the one hand versus the impact on our economy of implementing such a program on the other hand. The evaluation should be completed as soon as possible.

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Generators for Clean Air (GCA) represents nine electric generating companies whose collective generating capacity is 70% coal-fired. GCA does not have a consensus view among its members on mandatory climate change legislation. Some companies believe reasonable mandates are appropriate; others do not support mandatory measures. Nonetheless, we believe it is prudent to offer constructive views on the design of a legislative program, should Congress ever decide to adopt mandatory measures.

GCA offers its response to Questions 1 and 2. Our main points are as follows:

- If Congress enacts mandatory climate change legislation, it should be broad in scope and apply economy-wide.

- Reducing compliance costs and electricity price increases should be one of the criteria for deciding on the appropriate point of regulation. GCA urges Congress to minimize the cost and financial impacts of climate change legislation on both electricity generators and their customers.

- As a group, GCA is still evaluating the appropriate point of regulation. However, if Congress enacts climate change legislation, it should allocate a substantial number of allowances to fossil fuel generation, regardless of the point of regulation.

- The electric power sector should receive allowances based on its pro rata share of greenhouse gases. Allocation of allowances within the electric power sector should be based on either historic emissions or heat input.

- Within the electric power sector, fossil generation should receive an allowance allocation that is adequate to significantly mitigate compliance costs and increases in electricity prices. Allocating allowances to nuclear generation penalizes coal-fired generation.

- Allocating 95% of allowances to fossil generation would significantly mitigate compliance costs. By contrast, auctioning allowances would result in compliance costs about 20 times greater than a 95% allocation.

- Congress should consider ways to prevent a patchwork of state requirements that are inconsistent with the objectives of a national program. Also, Congress should consider mechanisms to ensure pass through of compliance costs.

# # #

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Global Green USA applauds the efforts of the Senate Energy & Natural Resources Committee in engaging the critical issue of climate change. The entire Committee is showing great leadership on the issue and we hope that the focused attention continues beyond the upcoming Climate Conference. At Global Green USA our climate change workstream is based on the following principle: that the mechanisms implemented to mitigate and adapt to climate change must be designed to enable direct benefits to inure to our at risk low-income communities.

To advance this principle Global Green USA has developed a Climate Solutions *for* Communities (CSC) program to explore model designs and verification protocols for community-level distributed generation and energy efficiency project reductions to access carbon markets. Low-income communities are often the most at risk, not only from the effects of climate change, but also from local air pollution and a lack of economic flexibility to adapt to the potential price impacts of national carbon constraints. We hope that the Committee looks to the CSC program's environmental justice and carbon market design workstream as a resource.

Our comments to the Committee follow the focus of the CSC program and mainly address question two concerning allowance allocations for low-income community assistance via set-aside / offset programs. Global Green's key points in response to question two are as follows: (1) An offset program should be adopted that explicitly supports the inclusion of renewable energy (RE) and energy efficiency (EE) project reductions generated by low-income communities, in particular those programs that fit the substantiation / verification models under development by Global Green USA; (2) Electric utilities, whose generator emissions are reduced indirectly or displaced by these community-level RE and EE projects, as the non-acting entity, should be required to relinquish any potential ownership of the resulting emission reduction credits; and (3) Allowances should be allocated to a low-income community adaptation and mitigation fund to help our at risk communities. The revenue generated by auctions/sales from this set-aside fund should be directed to finance RE and EE projects in low-income communities. This mechanism will hedge against carbon cost pass-through pressures from the electricity sector by lowering electricity costs for low-income communities. It will also help improve local air quality and provide badly needed services to our impoverished communities while at the same time generating more emissions reductions.

Global Green USA's final comments fall under the additional topics question. The potential formation of pollution "hotspots" resulting from a national carbon market is a real concern for low-income communities located adjacent to fossil fuel generators that contribute to these communities' non-attainment of air quality standards. Global Green USA is developing models for "Hotspot Gate-keeping" in which areas identified as at risk for hotspot formation (with carbon emissions demonstrated as linked to emissions of local air pollutants) would be required to adopt restrictions to discourage the import of emissions allowances / credits above a certain threshold to covered entities. These restrictions, in the form of a tariff (with revenues recycling to the community) on imported emissions allowances / credits or a reduction in their compliance values, would ensure air quality in our most at risk communities is not negatively impacted by a new national carbon market.

Thank you again for your leadership and the opportunity to participant in this important effort.

Mary Luevano
Global Green USA

Submitter's Name/Affiliation: John Coequyt, Greenpeace US
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Question 1:
Never before has humanity been forced to grapple with such an immense environmental crisis. To avoid the worst impacts of global warming will require a sustained international effort to dramatically reduce fossil fuel use around the globe.

If the international community is going to act together to limit global warming, it needs to agree on a common goal. The European Union formally set the goal of limiting global warming to 2 degrees Celsius and we urge the United States to do the same. If we do not take immediate action to limit global warming to 2oC, the damage could be catastrophic and irreversible.

In order to meet this, or any target in the neighborhood, the United States will likely need to reduce greenhouse gas emissions 60 to 80 percent by mid-century.

The solutions to global warming must be economy wide. Any trading system, which will be a major part of that solution, should seek to include as large a percentage of our global warming gasses as possible. It also needs to be backed by strong national policies that are consistent with the goal of limiting global warming to 2oC.

Question 2
The default should be that the polluter pays for the allowances, and as many of the allowances should be auctioned as possible with the revenue going to fund technological innovation, incentives for renewable energy and energy efficiency, subsidies for low income customers impacted by higher energy rates, and funding for climate change adaptation projects.

Question 3:
A domestic trading system will be a powerful mechanism by which the United States can demonstrate its seriousness in tackling global warming. A trading system that is fully compatible with the emerging Kyoto system and with the European Union trading system would allow U.S. enterprises to fully capture the economic benefits and efficiency of access to an efficient global market. It is essential that the domestic trading system be compatible with the other national and international trading systems.

Question 4:
It is essential that the United States become a leader in the effort to slow climate change. The United States can do this by coming to the international table with strong goals that are consistent with the European Union goal of limiting global warming to 2oC.

The United States could consider encouraging the development of new market mechanisms such as sectoral targets with a no lose target architecture and Sustainable Development Policies and Measures which could also be set up so as to generate credits for the international carbon market.

Submitter's Name/Affiliation: Jason Grumet / NCEP
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Phone: 202 637 0400

Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Principles for Allocation

Because overall program costs and effectiveness are largely unaffected by who gets free allowances at the outset, allocation decisions can be used to address equity concerns and (potentially) to advance other policy objectives. A firm that receives free allowances has effectively received an upfront, lump-sum payment. This payment can be used to offset the economic burden of the policy without reducing the firm's motivation to reduce future emissions. As described in our full submission, the real societal costs imposed under a tradable permits program for greenhouse gases such as the Commission has proposed are, by design, quite small in the context of the overall economy. Nevertheless those costs will impose differential burdens on different stakeholders throughout the economy and, as a result of the trade in allowances that will occur under the policy, engender somewhat larger transfers of wealth. In the context of these uneven burdens, how allowances are distributed to different stakeholders in the initial allocation will have important impacts on the perceived fairness of the policy.

Therefore, the Commission continues to recommend, as it did in its 2004 report, that Congress allocate permits in a way that recognizes the disparate burdens created by greenhouse gas regulation. This means that entities should not receive free allowances in excess of the amount required to compensate them for their actual profit losses under the proposed program. It also means that downstream energy users (including energy-intensive industries as well as households), who—according to available economic analyses—can expect to bear a substantial share of the burden of the policy, should not be excluded from the allocation merely because they are not being directly regulated (in the sense of being required to submit allowances).

In fact, economic analyses based on EIA data indicate that the actual burden imposed on upstream fossil fuel producers is small under a policy such as the one proposed by the Commission, regardless of whether they are the entities regulated. Specifically, these analyses suggest that fully compensating fuel producers for their profit losses under the program would require only about 10 percent of available allowances, leaving roughly 90 percent of the allocation available for distribution to energy users further downstream. The White Paper recently issued by Senators Domenici and Bingaman identifies a number of constituencies and purposes that could be included in the allocation. The Commission agrees that all of these should be considered when allocating available allowances and, though not in a position to offer specific recommendations on what share should go to each, urges Congress to maximize the benefits achieved through allocation by avoiding allocation formulae that, by overcompensating some interests (and thereby effectively awarding them windfall profits), diminish the opportunity to advance equity and other important policy goals.

Submitter's Name/Affiliation: Jerome Hinkle/Technology Transition Corporation
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EXECUTIVE SUMMARY

- Establish a U.S. leadership role, implement the early stages of a cap-and-trade market program in 2008, with clear Congressional intent to embrace the entire energy economy in deliberate and careful stages—provide for its administrative expense in the FY 08-12 budgets; begin with building a Federal organization, emissions inventory/reporting (roll up all current programs), regulatory systems analysis capability
- Create a government corporation (GHG Management Corp.) to write the regulatory program within a year, have the National Academy of Public Administration design its functions, assemble expertise from industry, EPA, FERC, DoE—must have the ability to build and move in concert with their markets and stakeholders independently of the Federal budget cycle; major industries would be part of their board of directors; GMC would need initial funding from Congress, but operates from credit trading revenues after about 2012 when liquidity becomes sizable; builds capability to create, manage and bank allowances; after it becomes financially self-sufficient public stock would be sold
- Clearly declare as many details as possible, to convey full Congressional intent and provide stability for industry—as the third stage, institute a Renewable Portfolio Standard, and devise a trading system that integrates energy efficiency, RPS, carbon and production credits—review the program at five year intervals, but other wise make it permanent, subject to an adverse finding by Congress
- After the RPS and integrated trading system, begin an NCEP-like regulatory scheme in early 2010, only at $8/t and with a more ambitious cap and cost ratchet, continue intensive and transparent analysis, based on empirical results from emissions data inventories, observed market behavior, industry and international reaction
- Initiate allocations, with the power industry first, then moving into other areas of the energy economy—plan to have all sectors included in the program by 2012; allocations/allowances must consider rewards for early action, and the substantial differences between firms in the same industries who have diligently pursued progressive and profitable reductions; Federal voluntary programs stay in place until each sector is incorporated into GMC
- Establish "early detection"/regulatory review so basic decisions about key adaptation adjustments on allowance policy can be made quickly—quick, smart, timely reaction needs to become a hallmark of GMC's performance
- Congress rolls much of the engineering demonstration climate work in the agencies into the GMC, while reexamining the performance and future feasibility of all climate change programs; much of this research needs to be refocused to serve the direct needs of the GHG reduction program (likely saving $)
- Congress institutes a comprehensive industrial RD&D technology assistance program, using successful elements from EPAct 05, and designed to commercialize advanced technology—including carefully designed direct loans and grants, tax incentives, loan guarantees and trade for stock warrants that allow GMC to participate in project upsides.

Submitter's Name/Affiliation: Art Hobson, Professor Emeritus of Physics, University of Arkansas, Fayetteville, AR 72701
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

I have answered Question Three and the Additions.

Question Three: The U.S. system should definitely be designed to allow for trading with other cap-and-trade systems around the world.

Additions: The problem is urgent, and is approaching a point of no return. History will judge the United States quite severely if we don't assume a leadership role on this issue. As a teacher and physics textbook author who includes societal topics such as global warming in my physics textbook, I have been following this problem since at least 1980.

Submitter's Name/Affiliation: International Climate Change Partnership (ICCP)
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If the United States decides to implement a mandatory regulation to control emissions of greenhouse gases, the program must be comprehensive, economy-wide, and market-based. The program should also include early action credits so that companies that have significantly reduced their emissions over the past decade are rewarded instead of penalized for voluntarily taking environmentally responsible actions.

Any mandatory GHG program, in order to be effective and fair, must be comprehensive by including all gases and must be economy-wide by including all sectors that contribute to emissions of GHGs. It must also focus on minimizing the domestic and international competitiveness impact on business. The easiest way to institute an economy-wide GHG program from an administrative perspective would be an upstream approach that regulates carbon at the point it is first introduced into the market. This would cover the smallest number of regulated entities and provide for the overall simplest program. But it is not as clear that this approach creates the most effective program. An upstream approach will tend to work by raising the cost of energy and this will have a different effect on different sectors. Raising the cost of energy could have an especially negative impact on the competitiveness of energy-intensive manufacturing industries.

ICCP does not believe that companies should be required to buy their plants back as part of a mandatory GHG regulation. Therefore, we support the allocation of allowances without cost. This is how it was done for the acid rain and ozone depleting substances programs and these programs have been very successful. Allowances could be allocated in such a program based on historical data such as market share or historical production. Some allowances would have to be set aside for new entrants and a small percentage of allowances should also be set aside for early action credit, consumer protections, and energy-intensive industries. In no case should initial allowances be auctioned and the resulting funds simply go into the Treasury.

ICCP has always supported the concept that "a ton is a ton is a ton" or that all verified emission reductions are equal. Therefore, we support the idea that a US GHG emission reduction program would be fungible in some way with other trading programs. If not prohibited, the trading markets are likely to identify the most efficient means of making this happen. Although there are political and legal hurdles to adding international trading to a domestic system, at a minimum the domestic program should ensure that verification systems are comparable with international programs, with a goal towards legal compatibility in the future.

It is important to have an ongoing assessment process of US actions as well as the actions of other nations. It has never been our view, however, that developing nations must have commitments identical to those in the US. It is possible to propose alternatives, e.g. intensity-based programs for developing countries, which could be the basis for future bilateral programs. All such programs should then be reviewed and assessed on the basis of consistency and effectiveness of program goals.

Submitter's Name/Affiliation: Industrial Energy Consumers of America
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Phone: 202-223-1661

Summary

Thank you for the opportunity to participate. IECA has answered most of the questions.

It is impossible for you to achieve your objective of building a fair, simple and rational ghg program that does not cause significant winners and losers. And, it is impossible to produce one that is cost effective. To place a cap & trade program "on top" of an energy supply system that is not functioning well because of government barriers, will result in failure. The desired objective of a cap and trade system is to drive additional demand for less carbon intensive energy. However, existing government barriers are preventing its supply. Failure means higher energy costs, less reliable energy supply and prices that are more volatile. It also means we will reduce the US's energy security.

The European Emissions Trading Scheme is instructive on the complexity and the significant costs. Both electricity and carbon costs have risen significantly and manufacturing has been harmed. (See enclosed information.)

If a cap and trade system is implemented, will the US government proceed to impose a carbon limit on imported energy or the "energy component" of an imported product like steel, aluminum, chemicals, plastics, fertilizer, glass, clay or cement? Without imposing a carbon limit on imported energy and energy intensive products, companies will simply not produce those products in the US and instead import them. Without imposing a carbon limit will result is the same effect we are experiencing today in manufacturing. Because of the relatively high cost of energy in the US, manufacturing has moved production to other countries and are importing them back into the US. As a result our trade deficit continues to explode. This is another example of the completely unworkable nature of a cap & trade system.

Sincerely,

Paul N. Cicio
President
Industrial Energy Consumers of America

Submitter's Name/Affiliation: Ian Carter/International Emissions Trading Association
Contact: Ian Carter, Policy Coordinator North America
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Phone:613-594-3912

The International Emissions Trading Association (IETA) is providing its comments regarding the white paper "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System", issued by Senators Domenici and Bingaman in February 2006. IETA's membership of over 110 companies is a diverse mix of all segments of the greenhouse gas (GHG) market including many large energy and industrial companies as well as the financial and banking sector, legal firms, brokers, traders, consultants, industry associations, policy institutions, verifiers and certifiers.

The role of IETA is to provide input on design issues related to greenhouse gas emissions trading by advocating flexibility, openness, and encouraging optimum liquidity. IETA does not participate in the scientific debate over climate change or advocate legislation for mandatory caps and timetables. IETA's goal is to facilitate the establishment of efficient liquid emissions trading markets that will help participants to achieve compliance with regulatory regimes in the most cost effective manner.

As such, IETA's goal is to facilitate the establishment of efficient liquid emissions trading markets that will help participants to achieve compliance in the most cost effective manner. To this end, we believe that any market system that is developed in the U.S. should include the following basic principles: verifiable, credible data, transparency, simplicity, low transaction costs, high liquidity; and fungibility with other systems and mechanisms. In this regard, we have provided comments with respect to the four sections of the white paper.

1. Form and Scope of Greenhouse Gas Targets (i.e. Who is regulated and where?)

IETA believes the optimal system will utilize a downstream approach with as broad coverage as possible.

2. Allowance Allocation, Auction and Distribution (i.e. How many and to whom?)

IETA recommends that any allocation of allowances should be done through benchmarking or grandfathering, rather than auctioning and redistribution.

3. Linkage of US Trading with Worldwide Systems (i.e. How to link systems?)

IETA believes that linkage of the US system to international markets is essential to encourage effective emissions reductions at the lowest possible compliance costs for industry.

4. Comparable Actions by Other Major US Trading Partners (e.g. China and India)

The implementation of the important requirement for corresponding multilateral action must be balanced against the need to provide long-term policy certainty to business.

Submitter's Name/Affiliation: Lisa Beal/Interstate Natural Gas Association of America
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The Interstate Natural Gas Association of America (INGAA), the trade association of the interstate natural gas pipeline industry, submits these comments in response to the Senate Energy and Natural Resources Committee February 2, 2006 White Paper on design of a mandatory greenhouse gas regulatory system.

INGAA does not believe that legislation mandating regulation of greenhouse gas emissions from the natural gas pipeline sector is necessary or warranted. The pipeline industry's contribution to overall US emissions is small and declining. INGAA prefers and would support voluntary measures to reduce greenhouse gas emissions.

Point of Regulation: Should Congress mandate reductions in GHG emissions, they should not regulate service providers such as transporters of natural gas or other fuels. Such legislation would be akin to attempting to regulate CO_2 emissions from coal by regulating railroads. Selecting interstate pipelines as the point of regulation for GHG emissions from combustion of natural gas will be inefficient, expensive in terms of compliance and also has the potential to be very damaging to the pipeline industry. Pipelines do not own or control the gas they transport and will not be able to fully recover the cost of the allowances required for compliance. Such a program would be an undue burden on the pipeline companies and further reduce the effectiveness of the program.

Allowance Allocation: INGAA does not support the use of auctions but suggests that all allowances should be distributed free to regulated entities. The regulated entities should be provided adequate allowances to cover 100% of their compliance caps. Interstate pipelines, in particular, will not be able to fully recover compliance costs through their rates and would therefore require a full allocation of allowances if they were selected as the point of regulation. INGAA also supports the inclusion of offsets and early reduction credits in any GHG program.

International Linkage: INGAA generally supports linkage with market-based regulatory programs in other countries as one way to provide flexibility and reduce the cost of meeting the requirements. This could potentially include linkage with international emission offset programs and international cap and trade programs. Linkage should not be allowed to defeat important features of a possible U.S. program such as use of a "safety valve".

Developing Country Participation: INGAA believes that linkage with comparable action by other nations, including developing nations, is critical to the success of a global GHG mitigation strategy. We support global efforts to address climate change through technology initiatives such as Methane to Markets and the Asia-Pacific initiative.

Carla R. York, CEO, Innovation Drive
112 Cameron Station Boulevard, Alexandria, Virginia 22304 March 13, 2006
703-931-1410

Comments for SENRC Climate Conference White Paper

Executive Summary

Innovation Drive is a technology commercialization company that helps companies with environmentally beneficial technologies gain commercial application, scale, and marketability. Currently, we are a member of a consortium that is developing a purpose built, battery dominant hybrid-electric, hydrogen fuel cell transit vehicle that the virtually eliminates emissions With a fuel cell vehicle, hydrogen is introduced to a fuel cell with the by-product being only electricity and water vapor. With all of those advantages the vehicle still provides a 50% reduction in annual fuel costs. **NOTE**: A FUEL CELL PRODUCES '0' EMISSIONS.

Our comments particularly address the benefits that our transit vehicle (aka – a bus) can provide the United States and its global neighbors. We have addressed concerns in each of the four main areas of concern. However, as many of the Question 2 subsets were not relevant to our interest, we only addressed 2a, b, c, and h. Questions 1, 2, and 4 did not have subsections, but were addressed.

Our points may be summarized:

- Upstream reductions likely will provide the largest reductions
- Our interests lie downstream, specifically related to transportation emissions. Within transportation, the most cost-effective reductions will be realized through regulation of large fleet operators.
- Public transit operator's diesel bus fleet emissions can reduce the majority of their emissions if they replace their fleets with our hybrid-electric, hydrogen fuel cell transit vehicles. Given the opportunity to prove and quantify these significant reduction levels, we may transfer our technology to school buses, municipal fleets, and other large vehicle applications. It is easier to administer large fleet operations than individual automobile end-users.
- Allowances should be auctioned, with proceeds used to defray further acquisition expenses.
- Technology R&D should be directed at maturing and realizable technologies to maximize cost-effectiveness. Furthermore, 50% of R&D funding should be directed to Small Business Innovative Research (SBIR). Historically, the majority of significant technology development comes from smaller businesses, and care should be taken to avoid large companies getting the lion's share of funding through more comprehensive lobbies.
- In transit, adaptation assistance decrease overall vehicle affordability. Purpose-built vehicles promise more efficient manufacture in the long-run.
- At least 50% of allowance proceeds should be funneled to the end-user to defray incremental costs to acquire replacement fleets.
- Trading greenhouse gas emissions (GGE) allowance credits with other nations may be counter-productive. It may discourage other countries from reducing their GGE, negating the value of U.S. efforts.
- Technology exchange for GGE should be exempt from duties and tariffs to increase affordability and foster the adoption of replacement fleets. This will more quickly realize reduced greenhouse gas emissions.

Submitter's Name/Affiliation: International Association of Fish and Wildlife Agencies
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Question 2: Allocation
Question 2b: Allocation Assistance

America's fish and wildlife agencies strongly support the dedication of a portion of the overall allowance pool to research and management activities aimed at moderating the consequences of climate change for fish and wildlife resources. Adaptation assistance that helps address the needs of fish and wildlife is an essential national natural resource policy objective as well as an indispensable component of any overall package of adaptation assistance. Funding for wildlife conservation and management should be delivered through the existing structure of the Wildlife Conservation and Restoration Program of the Pittman-Robertson Wildlife Restoration Act.

Submitter's Name/Affiliation: IPSCO Enterprises Inc.
Contact: Martha Gibbons
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Phone: 202-842-2255
We are submitting brief comments on each of the four questions. We are responding to a few sub-questions. Each is reproduced followed by our comments.

Cap and trade programs have had success in application to SO2 emissions within the US. However the broad application of this type of program has difficulties not anticipated in its successful but limited application. From an environmental perspective, US steel mills are among the cleanest operating mills in the world, from a CO2 standpoint and with respect to air and water emissions. To undermine the use of domestically produced steel would be a net loss environmentally. A cap and trade program, no matter how well designed, is likely to do that. We would caution against the use of any program that makes steel from North America less competitive in a global market

Voluntary reduction programs are working in the US. USEPA issued a draft inventory of GHG emissions and reductions on Feb 23, 2006. That inventory indicates that the domestic steel industry has reduced CO2 emissions from 85.0 Mega-tonnes to 51.3 Mega-tonnes from 1990 to 2004. Methane emissions were reduced from 63Kilo-tonnes to 50kilo-tonnes during the same period. The reduction is a result of innovation, that innovation is in turn the result of pressure from globalization in the steel industry. In order to compete with steel from nations that regularly subsidize steel, the North American industry has been forced to become very efficient. For example: IPSCO recycles over 4 million tons of steel scrap each year using electric arc furnaces (EAF) to produce new steel products. Because steel scrap is the primary input, steel is produced using only one third of the energy used in primary steel production. The combination of steel making technologies (basic steel production and EAF production) ensures that the domestic industry will emit lower amounts of CO2 than many of our trading partners.

IPSCO participates in research efforts with the global steel industry on cutting emissions, and on advanced sequestration of CO2. These efforts are essential to reaching breakthrough technologies in the steel sector. In addition, the domestic industry works with DOE on research projects. These projects are public private partnerships, and any commercially viable technology that is developed, is available for technology transfer. The Asia Pacific Partnership, the research efforts of the International Iron and Steel Institute, research efforts on the part of the domestic steel industry and DOE will continue to yield the technologies that reduce global CO2 emissions.

We would hope that before moving forward, the committee will have a much broader discussion of the implications of this and various other approaches to addressing climate change. Any attempt to cap CO2 emissions before new sources of clean coal and nuclear energy are assured will simply put US manufacturing at a disadvantage.

The adoption of a cap and trade program would require an examination of US trade policy going forward. It may be necessary to incorporate tariffs or quotas on imports of manufactured products that are produced in countries that do not have caps and/or are not equal to the US

carbon intensity levels for steel manufacturing, and down stream products. These actions will be necessary in order to not simply shift, rather than reduce global carbon emissions.

Executive Summary
Jupiter Oxygen Corporation
Harold Green Vice President of Public Affairs

Question 2a Technology R&D and Incentives

Key Questions

- Level of Resources- We concur with the NCEP recommendation to increase R&D funding from $1.7 billion to $3.3 billion annually. Of particular interest to Jupiter is the increase of early deployment incentives from $600 million to $2 billion.

  Key to this is also focusing on technologies that can be retrofit onto existing emission sources. A good example of this is coal fired electric generation. Right now there are approximately 600 coal fired plants that produce just over half of our nation's electricity. These plants are major emitters of green house gases but because their baseline value exceeds $500 million each electric utilities are reticent to retire them. Jupiter believes that we need to recognize this economic reality and take positive steps toward retrofitting existing facilities that are unlikely to be retired over the long term.

- Fund Allocation- Jupiter believes that if a dedicated funding stream, like permit revenue, was identified that a large potion of the funding should be allocated through the Congressional Appropriations Process.

- Although Jupiter supports the NCEP recommendation, it would like to see funding allocated evenly between pure R&D and technology deployment. In the case of technology deployment, extra consideration should be given to those projects that have private sector by in and can be deployed immediately.

- Jupiter believes that tax credits and cost sharing should both be utilized for technology deployment. One change that would needs to made is that Oxy Fuel Technology cannot currently access tax credit schemes and there would be statutory change required.

Executive Summary for 2006 Climate Conference, Questions #2 b. Adaptation Assistance
King County Executive Ron Sims, King County, Washington

Summary Statements to Questions 2b. Adaptation Assistance

What portion of the overall allowance pool should be dedicated to adaptation research or adaptation-related activities? The majority of funding should be dedicated to reducing greenhouse gas emissions. However, given the threat to public health and safety from existing trends, up to 20% of the available funds should be allocated to adaptation initiatives.

How should these allowances or funds be administered? Funds must be dedicated to local and regional governments where impacts occur. There is no federal or state consistency in how climate impacts take place; therefore, funding should be directed to entities large enough to reach the full scope of the environmental threat, and localized enough to be directly impacted by it.

What is the appropriate division between federal vs. regional, state, and local initiatives? Adaptation, almost by definition, is regional. Within Washington State, as with most states, climate impacts have huge variations within the state. Even climate impacts on King County, Washington's many salmon-rich rivers will have wide variations. The assessments, the planning and implementation strategies will occur regionally. From that essential starting point, state and national networking can then develop for the benefit of shared expertise and practices.

King County, Washington is home to over 1.8 million people in 2,134 square miles of urban, suburban, rural, agricultural, forested, coastal, river and mountain environments between Puget Sound and the Cascade Mountains. Residents face many different climate threats to their landscape, jobs and lives, and King County government is responding with critical regional strategies in land use policy, public transportation provision, environmental (waste and wastewater) management and economic development in order to protect landscape and the regional economy from predicted severe impacts. While King County has implemented ambitious mitigation strategies, King County recommendations here focus on the need for a national climate change program **to support and incentivize regional governments in fulfilling their critical climate change adaptation responsibilities**.

Based on extensive preparation for its severe predicted regional impacts, King County brings a critical perspective on adaptation to the Senate Climate Conference:

-- With expertise from the University of Washington Climate Impacts Group (CIG), King County leadership has worked to respond to severe and unavoidable loss in Puget Sound's regional snowpack, a future impact that will threaten drinking water supply, agriculture, ski industries, hydropower and salmon habitat; regional sea level rise that will erode coastlines and jeopardize coastal livelihoods such as shellfishing and fisheries; and severe regional weather patterns that will increase droughts and floods, imperiling agriculture and rural ways of life.

-- King County leadership has designed a cutting-edge water reclamation system into its new wastewater treatment plant, such that the plant will not only treat waste but also supply agriculture and industry with non-potable water, to take pressure off of declining water supplies.

-- King County leadership and CIG have agreed to co-author a first-of-its-kind climate preparedness guidebook for other governments. King County and CIG are currently in negotiation with the International Council of Local Environmental Initiatives (ICLEI) to export this adaptation guidebook to a worldwide audience.

Submitter's Name/Affiliation: Prof. Charles Kolstad, Univ of California, Santa Barbara
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

1. In the preamble, I would note that coastal exposure to not only sea level rise but hurricanes is perhaps one of the biggest ways in which the US will suffer damage from climate change (though nothing is certain in this game).
2. On page 5, the question is posed regarding breadth of the program as well as extent to which should be upstream. My view is that this should be broad -- in contrast to sulfur, CO2 permeates activity in the country. Furthermore, administrative simplicity does call for upstream for the most part. There is the issue of how to deal with efforts that sequester carbon, whether power plants or even forests or land use. Some of these should proably be able to get credits. You might consider exempting export industries (or give credits at the border for exported goods to countries that do not have similarly strict limits on GHG). This was a major issue in Clinton's failed Btu tax.
3. On page 6 you consider the initial allocation. This is an important issue, as you well know. My feeling is that you need to allocate sufficient free permits to "buy off" the opposition, with auctions for the remaining permits. Furthermore, a very gradual phaseout of the free permits might be justified. You might also consider some creative free allocations, such as to states or even to the United Mine Workers or their employees. Afterall, the incidence of this program on the coal industry is to two parties: coal miners/employees and coal company investors. Probably the more important group politically are the miners. The incidence to oil and gas is marginal if not positive.
4. On page 7 you begin a discussion of how to use the funds collected from auctioning the permits. I think it would be a mistake to earmark funds. Put them into the general coffers to offset the deficit. You also ask about R&D incentives. The permit program itself will offer significant incentives. A problem with direct funding of R&D is that it is not clear that the past thirty years have been all that successful in this regard. You might instead try creative measures such as allocation of permits to auto companies who raise their average fleet fuel economy (as in McCain-Lieberman), offer golden carrots for energy-saving innovations (such as was done with refrigerators) and even incentives for homeowners and builders to invest in energy-saving devices.
5. On page 8 you address the question of adaptation. Adaptation is of two basic kinds: private and public. Private adaptation involves farmers and others changing their practices as the climate changes. That will occur "automatically." Public adaptation largely involves changes in infrastructure in response/anticipation of climate change. For instance, water supply in the west or levies along the Gulf Coast. This is unlikely to occur spontaneously and efficiently. Some targeted funds may well be appropriate.
6. On pages 10 and 11 you wonder if upstream producers would be able to pass on costs. I see no reason why this would not happen. I dont think it should be a concern.
7. On page 11 you bring up the qustion of electric power. I do not see why the electric power sector need receive allowances -- what they use will be embodied in the fuel they buy. There should be allowance credits for sequestration however, since electric power may well do this.
8. I see no reason why energy-intensive industries should be particular help beyond what may be

needed to buy off opposition in the short term. Except for sectors in export, these industries should be able to pass on most of thier increased costs.
9. On page 13 you ask about linkage to foreign trading systems. This is a good idea though you need to be careful that the other system is working well. For instance, if Europe lets in all of Russia's hot air, the system will be next to meaningless.
10. On the last page you bring up the question of trading partners. China is the obvious one here and it is important to bring them into the fold. I dont know how you might do that but it is important.

Submitter's Name/Affiliation: Klaus S. Lackner, Director, Center for Sustainable Energy, Columbia University and Richard Wilson, Harvard University
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

We present a permitting framework for controlling the introduction of excess carbon into the environment. It would be used to create economic incentives for individuals to limit net carbon flux into the mobile carbon pool, which includes the atmosphere, the biosphere and the top layers of the oceans. Under this framework the mobilization of carbon would require a permit, whereas the fixation of carbon would result in the issuance of a certificate of sequestration. Permits would be required for the extraction of carbon from under the ground or introduction of carbon in the form of oil, gas, coal or other raw carbon resource across national boundaries. Certificates of sequestration that could be traded in lieu of permits are issued for permanent disposal of carbon or the increase of carbon in a storage system that is actively maintained and whose content is accounted for on a continuous basis. Decrease of carbon in such systems would lead to carbon liability that could be covered with the purchase of permits. All other transactions involving the move of carbon are unaffected by this trading framework. The increase of price of extracting carbon would provide a monetary incentive for using non-carbon technologies.

Our goal is to trade introduction of carbon into the surface pool (emission) against carbon removal from the surface pool (sequestration) and gradually achieve a net zero carbon economy. We discuss the scientific logic on which such trading could be based and the various implications of such a scheme.

The amount of fossil carbon extracted over the next century is likely to be large compared to the amount that can be readily accepted by the surface reservoirs. These reservoirs, which include the atmosphere, the biosphere and the upper layers of the ocean, need to be considered together as they readily exchange carbon with each other. At the current rate of consumption, the emissions of the next century would equal the entire biomass, nearly half of all soil carbon and more than half of the amount of CO_2 needed to reduce the entire ocean pH by 0.3. If the last century is any guide, total carbon consumption could easily be 4 to 5 times larger than the 600 Gt C assumed in this comparison.

Fossil fuels represent by far the cheapest and most abundant source of energy. Coal in particular is likely to last for centuries. The introduction of a permitting framework as suggested here would make it possible to stop the accumulation of mobile carbon in the surface pool and limit the built of carbon dioxide in the atmosphere while still maintaining access to the vast reserves of fossil fuels.

Submitter's Name/Affiliation: LEE LANE
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CPC supports a domestic economy-wide, uniform, upstream cap-and-trade for greenhouse gases (GHGs). The policy must meet the tests posed by the Byrd-Hagel Resolution. It must not significantly harm the US economy. And it must ensure that key less developed countries (LDCs) take comparable action.

Climate-related R&D is the key to achieving both of these conditions. Existing technology cannot significantly reduce GHG emissions at a cost that most nations are willing to pay. The US will not sacrifice economic growth for GHG mitigation. Neither will China and India Hence, radically new, and far less costly, technology is a prerequisite for climate policy success.

Although limiting GHG emissions will not, in itself, produce nearly enough new technology, using emission allowances to fund climate-related R&D might help to do so. This money, however, would be wasted unless federal energy R&D is substantially reorganized and reformed. Therefore, enactment of the PACE Bill, particularly its ARPA-E provision, is an essential precondition for using allowances to augment R&D funding. Ultimately, PACE is as crucial to successful climate policy as cap-and-trade is.

Even with the eventual promise of new technologies, constructing a cost-effective cap-and-trade will be challenging. Next to enacting a carbon tax, the safety valve provision is the best available way to boost the cost-effectiveness of GHG controls.

Moreover, by limiting the program's costs, the safety valve would allow Congress to use most of the emission allowances for maximizing the program's cost-effectiveness. R&D and budget deficit reduction appear to be the most promising strategies. To realize this potential, though, Congress would have to resist the blandishments of the various interests that are seeking to convert cap-and-trade into a cascade of windfall profits.

Linking a US cap-and-trade to the EU ETS or to other Kyoto Protocol-based international emission allowance trading schemes conflicts with using a safety valve. With linkage (and without the safety valve) US allowance prices and economic costs would rise. The temptation to check rising prices with bogus Russian 'hot air' allowances would grow. The choice between the safety valve and Kyoto linkage is, then, the choice between paying the US government for extra allowances and paying the Russian government for them.

The safety valve can also encourage China and India to adopt GHG limits. In the NCEP plan, Congress would consider halting the escalation of the US safety valve price if China and India fail to adopt adequate climate policies. Unfortunately, this NCEP provision is very weak. In the (likely) case of non-cooperation by China and India, Congress may delay or vacillate. This provision should, instead, incorporate the fail safe principle. The escalation of the safety valve price should halt automatically unless the executive branch certifies that China and India have taken comparable actions.

Submitter's Name/Affiliation: Eric P. Loewen, Ph.D. / Personal Responses
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I have elected to respond to the four main questions with a brief statement. I provide fuller response to the Key / Clarifying Questions for each of the four main questions.

All responses are my personal opinion, and are not affiliated with the Idaho National Laboratory.

SUMMARY OF RESPONSES

Question 1. A rational greenhouse gas (GHG) reduction program is best served economy-wide since. GHG are generated across the economic spectrum. "Upstream" regulation provides administrative ease and efficiency. "Downstream" regulation drives realistic reduction.

Question 2. Cost of regulation should be spread proportionally across the regulated spectrum, and paid proportionally by the regulated entity. The regulated entity will pass the cost of regulation to the consumer. This creates a sense of "ownership" across the populace.

Question 3. If a cap-and-trade system is established, it must be part of a universal system to be effective. A "stand alone" system for one nation will fail to accomplish world-wide reduction.

Question 4. Involvement by all nations is desirable – necessary - for reduction of GHG in our world's atmosphere. The Energy Policy Act of 2005 addresses this by encouraging technology development by other nations.

Additional Topic: None

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Biographical Overview: Over 30 years as a climate change researcher with Lawrence Livermore National Laboratory, the Office of the US Global Change Research Program, and National Assessment Coordination Office, prior to volunteering with the Climate Institute.

Question 1: A "**carrot and stick**" approach is recommended that includes: (a) **a sector-based component** that is incentive-based and directed at the stream location that would encourage the widest array of possible options (e.g., technological, behavioral, etc.) for responding; and (b) **a rising, economy-wide tax on emission of fossil-fuel derived carbon** that is clearly visible to commercial and public consumers and the revenues from which are used to offset a comparably regressive tax or other situation (e.g., the coming Social Security deficit). The recommended sector-based program is unusual in proposing "long-term emissions rights" (LTRs) rather than annual permits. LTRs have annual coupons that are equivalent to annual emission permits, but the emissions amount allowed by the coupons essentially depreciates in time (to 10% of original value in 60 years), so that the holder (e.g., an electric generator, vehicle manufacturers) must switch to alternatively powered energy systems or purchase of credits on the open market, where their price will presumably rise over time. One unique aspect is that vehicle manufacturers would have to have LTRs covering **all** of the fossil-fuel carbon emissions for **all** vehicles they have ever made that are still in use (estimates are actually quite readily developable); doing this rather than focusing only on the new car production opens up many additional options for responding, such as repurchase of existing low-mileage vehicles, which should lower costs compared to situations for which permits were held by fossil-fuel producers.

Question 2: The LTR-based approach I recommend involves free allocation of the rights to emit, but accompanied by a long-term commitment by the recipients to take action in that the rights to emit would depreciate over time at a specified rate. In lieu of a permit fee, the free allocation of LTRs would lead necessarily to major investment in non-fossil fuel emitting technologies. I favor this approach because private money going to promote technological change is likely to be more effective than if the funds pass through the government as permit fees. While this would mean no revenue for government, government expenditures should nonetheless be substantially increased for long-term R&D, for subsidies to mass transit, for improvement of public housing energy efficiency, for a renewed national impacts assessment, and, through the regional governors' associations, for focused adaptation and resilience building.

Question 3: My recommended approach is long-term approach and would give industry and public a clear indication of what must be done. A real (and realistic) US approach focused on the long-term would be the first of its type, so other nations will need to be joining us rather than us joining them. The approach I propose is readily expandable to include other nations, which is an important asset for a proposed strategy.

Question 4: Because of the accelerating pace of climate change, all nations need to take aggressive action. Waiting until we all agree on an approach will be too late. The developed nations should move first because of the growing, multi-century CO_2 increase they are creating. By contrast, the developing nations have a much smaller legacy of climate change. While the Kyoto Protocol did not turn out to be workable for the US, there are workable paths and significant potential for technological innovation and developing nations will surely follow.

Submitter's Name/Affiliation: Marlo Lewis/Competitive Enterprise Institute
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Provide an executive summary of your response(s).

Science does not justify climate alarmism, and the costs of any mandatory carbon-reduction policy are likely to be out of all proportion to their putative benefits. The White Paper should but does not invite discussion of these threshold issues. The Committee has not yet heard the case against climate alarmism from qualified scientists even though Chairman Domenici promised to hold such a hearing in his opening statement of July 21, 2005. Issuing the White Paper before the Committee has conducted a balanced assessment of climate science was premature—a rush to judgment unworthy of the world's greatest deliberative body.

All mandatory carbon suppression schemes are contrary to the public interest, but cap-and-trade strategies have the greatest potential for political mischief and economic harm. A regime of carbon retail sale taxes would be administratively simpler, more transparent, and more accountable than a cap-and-trade program. Citizens would feel the bite the tax takes out of their wallets each time they purchased gasoline, paid an electric or natural gas bill, or bought a product manufactured with heat or steam from fossil fuels. Consequently, they would be more likely to demand that policymakers explain why the ostensible benefits of carbon taxes justify their costs—and more likely to resist attempts to increase such taxes—than they would to demand a justification for carbon caps or to resist attempts to tighten the caps. In addition, since taxes are a domestic policy matter, they are easier to repeal than policies, such as cap-and-trade, that are likely to become entangled in the policies of the European Union and the Kyoto negotiating process.

Submitter's Name/Affiliation: William O'Keefe, CEO and Jeff Kueter, President, George C. Marshall Institute

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

These questions, while important, are predicated on the assumption that a mandatory program is the best approach. Questions to provoke discussion, like those posed in your White Paper, should lead to a conclusion rather than support one that has already been reached.

The White Paper makes it clear that your objective is a regulatory program based on a mandatory "cap and trade" system. It is based on last summer's Senate Resolution, which is a source of major concern to us and that is unfortunate because it prescribes a policy outcome in advance of discussion of either the justification or the consequences of that outcome.

We have long held the view that any mandatory program limiting the use of fossil fuel energy would do more harm than good and is inconsistent with the actual state of scientific knowledge about our climate system and human influence on it. It would also be inconsistent with the wealth of economic analyses on the effects of limiting energy use. The "cap-and-trade" approach is little more than a back-door tax on carbon. A direct carbon tax is far more efficient and it would more clearly focus the policy debate on the costs and consequences.

The scientific community does not understand natural variability sufficiently to support the claim that average temperatures have risen outside its range. A review of paleoclimate history clearly shows periods where both greenhouse gases and temperatures have exceeded current levels. The risks cited in the Resolution are primarily the result of unproven hypotheses and computer model results that are driven by worst-case scenarios.

While no one seriously questions human activity being the primary cause of greenhouse accumulation in the atmosphere, the assumption that human activity is the sole cause for temperature increases in recent decades or the past century is simply not correct. A careful reading of reports by the National Academy of Sciences and the science working groups of the Intergovernmental Panel on Climate Change clearly demonstrates this point.

Questions Addressed

- **Question 2a: Determining the appropriate level of resources for R&D or technology development is not possible without first understanding the broad objectives and then recognizing why past efforts to encourage innovation have failed.**
- **Question 2b: Adaptation research is a high priority deserving of increased attention under this or the present set of climate policies.**
- **Question 3: The U.S. should not design a global "cap-and-trade" system.**
- **Question 4: U.S. actions should not proceed without the participation of developing countries, particularly China and India.**

Submitter's Name/Affiliation: Michael A. Bowman
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My name is Michael Bowman and I am a farmer from eastern Colorado. I serve on the national steering committee for "25x'25" (www.25x25.org), chair the Intermountain Harvesting Energy Network (www.harvestenergy.org) and participated in the 2005 Trans-Atlantic Dialogue on Climate Change.

It is my belief that significant solutions to climate change can be met by America's farms, ranches and forests. A market-based cap and trade program with NO limit on domestic farm and forest offsets will not only provide for America's working land's contribution to climate stabilization but also offer significant opportunities for these working lands to provide economic stabilization in many of rural America's small communities.

As a fifth-generation native of a rural, eastern Colorado farming community I have a deep desire to find new methods in which to keep rural America economically strong and a place where our residents can employ their entrepreneurial spirit to provide for these important solutions to climate change.

At the farm level conservation tillage, the planting of trees and energy crops on marginal lands, the planting of biomass energy crops, and finally, looking to the livestock sector for not only methane capture but intensively managed grazing systems that will dramatically increase terrestrial sequestration -- will provide significant contributions to our climate stabilization goal.

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Executive Summary

Cap-and-trade programs offer opportunities for significant cost savings over other regulatory regimes for emissions control. These opportunities are most fully realized when the cap-and-trade program allows emissions trading between a large and widely diverse set of firms. The design of the program, including the allowance allocation mechanism, the industries included, and opportunities for trade with outside markets, can greatly affect the cost of emissions control and can sometimes affect competitive conditions in markets for goods and services. Important issues include maintaining incentives for technological progress, minimizing market power for traders, and maintaining conditions favorable to the entry of new producers.

A downstream approach offers important advantages in providing incentives for technological progress and for energy use reductions throughout the energy chain. My responses to the questions raised in the February 2nd White Paper center on the downstream approach and the effects that various design issues have on the overall efficiency of emissions control and on the smooth operation of allowance trading markets. I have chosen to answer only questions 1, 2, and 3 and a small number of clarifying question relating to each of these. Short summaries of my responses to each general question are provided here.

Question 1: Point of Regulation

A downstream program targeting large final emitters in all industries coupled with a separately designed program for transportation fuels offers an administratively manageable, economically efficient, and politically viable greenhouse gas program that would be effective in attaining its objectives and that could be integrated with other regional and national programs around the globe.

Question 2: Allocation

For large final emitters, roughly 75% to 85% of allowances should be allocated without cost, with the remainder distributed by means of an auction. The same would apply to petroleum refiners if a market based system is used for transportation fuels. Allowances allocated at no cost should be based upon counterfactual emissions that would be produced with best available technology for each sector. This would mean that the allocation rule would be based upon output rather than historic emissions or heat input. A ten-year rule should be developed to update allowance allocations as structural changes occur in the American economy and as technological developments take place over time, and to accommodate new entrants.

Question 3: International Linkage

The system should be designed facilitate trading between US firms and other entities around the world, which would reduce compliance costs for American producers, reduce impacts on the American economy, and encourage the development of programs of similar design in other nations and world regions.

Submitter's Name/Affiliation: Minnesota Power (ALLETE)
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Minnesota Power (ALLETE) Summary Response to "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System" (White Paper) Released February 2, 2006

Minnesota Power (MP) appreciates the opportunity to provide comments to Senators Domenici and Bingaman and the Senate Energy and Natural Resources Committee (Committee) regarding the greenhouse gas (GHG) regulatory design issues raised in the White Paper. MP affirms the responses provided to the Committee questions by the Edison Electric Institute (EEI) and offers the following comments that address three issues that MP would like to emphasize.

1. **Avoid Emissions Caps or Taxes.** Supply of affordable and reliable electricity is essential for MP's customer base. MP's iron mining and wood products industry customers produce products that are energy input intensive and compete in international markets. Emission caps or taxes have the effect of increasing the cost of energy to all customers, regardless of any resultant reduction in greenhouse gas emissions. Technology and installed equipment retooling constraints can result in increased production costs with no greenhouse gas emission reductions, as caps or taxes increase costs of production inputs. GHG caps or taxes at levels stringent enough to shift production to low GHG emission alternatives can significantly harm the overall economy and our regional employment base. MP suggests that the Committee examine and emphasize alternatives to mandatory greenhouse gas emission caps or taxes.
2. **Encourage Continued Voluntary Action.** The United States has been a leader in encouraging voluntary actions to reduce GHG emissions. MP has been an active supporter of US voluntary climate action initiatives and has voluntarily participated in the Climate Challenge program. MP voluntary measures to reduce, offset or sequester greenhouse gas emissions amount to over a million tons of carbon dioxide equivalent annually, which is about ten percent of GHG emissions associated with current MP electric production. MP encourages policies that continue to support voluntary GHG reduction initiatives and assure that parties who have acted to reduce greenhouse gas emissions receive appropriate credit under any new GHG emission reduction policies (credit for early action).
3. **Foster Establishment of Near-Zero GHG Emission Technology.** Achieving a global GHG emissions balance that can support GHG emission goals while supporting global economic growth will require the creation of new, highly efficient and near-zero GHG emitting technologies suitable for wide-spread distribution at an affordable cost. Policies should foster expanded Research and Development by allowing for a full tax credit for R&D outlays. Expanded use, development and commercialization of new renewable energy resources should be encouraged through national policies that foster renewable energy development that achieves local/regional physical and economic potential. Near-zero emission GHG technology development should be a top research priority encouraging near and mid term development of technology that releases low levels of GHG emissions under full cycle analysis, such as: combustion of fossil fuels with carbon capture and sequestration; fuel cells; nuclear energy; technology with improved energy conversion efficiency; conservation (demand side management); land management practices (forestry, agriculture sequestration, etc.); renewable energy; and hydrogen-based energy.

Executive Summary

Missouri River Energy Services
Tom Heller, Chief Executive Officer
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Missouri River Energy Services (MRES) is a wholesale power supplier to 57 municipal electric utilities located in Iowa, Minnesota, North Dakota and South Dakota. Currently, our primary power supply is a 17 percent stake in the Laramie River Station (LRS) in Wheatland, Wyoming – one of the nation's cleanest coal-fired power plants. We also own natural gas fired peaking plants and wind turbines. MRES will be a 25 percent owner in the Big Stone II plant in South Dakota, a pulverized coal plant expected to come online in 2011 and is participating in the evaluation of an additional coal-fired plant – and additional wind resources – in our region.

Below is a summary of our answers to questions 1, 2 and 3 in the Climate Change White Paper. MRES understands the value of an upstream regulatory system providing administrative simplicity and enabling an economy-wide system. We continue to believe that voluntary measures to reduce greenhouse gas emissions should first be given the chance to work. However, if a mandatory greenhouse gas regulatory system is adopted, it should be economy-wide and:

- Be flexible and not mandate specific technologies;
- Limit the economic impact on consumers and businesses;
- Not unfairly penalize "clean" utilities or new plants currently under construction;
- Allowances should be allocated to utilities to reduce emissions;
- Recognize that different utilities face different compliance challenges based on fuel source and the number and types of plants they own; and
- Allow for the continued use of coal to generate electricity.

Submitter's Name/Affiliation: National Farmers Union
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Executive Summary:
National Farmers Union specifically endorses exempting the agricultural production sector from any mandatory green house gas reduction commitments or regulations:

- This is largely because the agricultural sector, though it is associated with some emissions of greenhouse gases, actually acts as a "net sink" – that is, the agricultural sector absorbs more greenhouse gases than it emits. In the U.S. national inventory of greenhouse gases, for instance, the agricultural and forestry sectors account for a net uptake (sequestration) of carbon that is equal to about 15% of total U.S. gross emissions. Of that net sink, forests accounted for approximately 91 percent of total sequestration, and agricultural soils accounted for 8 percent.

NFU would encourage the development of a program to allow the agricultural and forestry sectors to sell or trade emissions reduction credits into a pooled system.
We would recommend the agricultural producers sector would be allowed to sell or trade carbon credits produced from any of the following methods:

- soil carbon sequestration to include crop production and buffer/wildlife habitat land management;
- biofuels or bioenergy sources created from plant materials or animal wastes (e.g, ethanol from corn or rice straw, biodiesel from soybeans and rendered animal fats and oils);
- electricity generated from renewable sources, such as wind turbines;
- by reducing methane (a greenhouse gases) from livestock operations, through improved manure management, use of methane digesters, or by changing the quality of feed to reduce methane emissions from digestion;
- by reducing nitrous oxide emissions through improved fertilizer management on croplands.

Research:
NFU would encourage the Secretaries of Agriculture and Energy to work with and utilize the findings and work products and recommendations of the Consortium for Agricultural Soils Mitigation of Greenhouse Gases (CASMGS) in developing measurement technologies specific to soil greenhouse gas mitigation strategies.

NFU would support a full effort by USDA to look at the Nebraska Soil Carbon Sequestration and Soil Carbon Assessment Project to determine applicability of using this approach to establish baseline data for soil carbon content on a nationwide scale similar to the county-by-county system established in Nebraska.

Submitter's Name/Affiliation: Craig Montesano/National Mining Association
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A forward-looking energy policy is the foundation upon which the United States must build any strategy for addressing climate change. Indeed, a basic question has emerged in the wake of Hurricane Katrina and other events that have demonstrated the limits of existing U.S. energy production capabilities: how will America meet its energy needs over the next 50 years? Visionary leadership is needed to propel U.S. energy policy beyond the Energy Policy Act of 2005, which was a crucial first step in responding to our growing energy needs. Looking ahead, a coherent climate strategy must incorporate the provisions of the Energy Policy Act and embrace the role of new technology, support the need for energy independence and maintain U.S. economic competitiveness in an increasingly challenging world economy.

The National Mining Association (NMA) has adopted a sustainable development policy and believes that the United States can best develop its climate policies based upon the tenants of sustainable development. This requires that climate polices be developed while considering their effect on the nation's policies involving energy, economic competitiveness, national security, agriculture, labor, transportation, immigration, social security, housing and other environmental and social policies.

Conceptually, the United States can best develop its climate policies based upon the tenants of sustainable development. As such, the ramifications of climate policies cannot be viewed in a vacuum. They must be formulated and evaluated based on their effects on energy supply and costs, economic competitiveness, national security, agriculture, labor, transportation, immigration, social security, housing and other environmental and social policies. Because climate policies can touch on all aspects of the economy, they can only be successful if they are developed using the best elements of democracy - an open and transparent debate, sound facts and careful consideration of the needs of all Americans.

Economic growth will necessarily be accompanied by an increase in energy demand. The International Energy Agency's *World Energy Outlook* projects economic growth to average 3.2 percent annually over the next 25 years, with a much faster growth rate expected in countries such as China and India. The use of fossil fuels and other energy sources will increase apace. However, by advancing more efficient and cleaner technologies to improve coal combustion and conversion of coal to other energy forms, economic advances will occur, fewer scarce energy resources will be consumed, and more secure energy supplies will be available to the United States than would otherwise be the case.

NMA supports policies that embrace innovative measures to reduce greenhouse gas emissions intensity while at the same time promoting a sound economy, job creation and a reliable energy supply. To do otherwise increases our unsustainable reliance on imported oil, overlooks the overwhelming emissions projections of developing nations, and undermines our ability to successfully compete with fast-growing economies in the decades ahead.

Summary
Jeremy Symons, National Wildlife Federation

Submitter's Name/Affiliation: National Wildlife Federation
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The National Wildlife Federation would like to thank Senator Bingaman and Senator Domenici for inviting comments on the design of federal legislation to curb greenhouse gas emissions. The National Wildlife Federation has worked to advance non-partisan solutions to protect America's wildlife for 70 years. Founded as a federation of state affiliates that includes hunters and anglers, wildlife managers and farmers, gardeners and other nature enthusiasts, the National Wildlife Federation today has 47 state and territorial affiliates devoted to conservation and more than four million members and supporters.

The National Wildlife Federation has identified global warming as the single most urgent challenge to protecting wildlife for our children's future. For the first time in human history, we are nearing the tipping point in an ecological crisis that could see wholesale loss of wildlife populations and profound changes in our outdoor way of life. Congress can take the first steps toward achieving the necessary reductions in emissions by enacting a market-based system with clear, mandatory safeguards to limit greenhouse gas emissions. While the first-and-foremost priority for a meaningful national policy to address global warming should be to reduce emissions and minimize the threat altogether, NWF also believes that a comprehensive policy should include financial resources for adaptation measures, including assistance for wildlife conservation.

Summary of Response to Question One: The National Wildlife Federation urges Congress to establish a clear and aggressive national goal for reducing U.S. greenhouse gas emissions, with mandatory safeguards to limit emissions from all major sources. The need for a nationwide goal for curbing U.S. greenhouse gas emissions is driven by: (1) the urgency of stopping and reversing the growth of emissions of carbon dioxide and other greenhouse gases within a decade; (2) alarming new forecasts of steady increases in U.S. greenhouse gas emissions if Congress fails to act soon to enact emission limits; and (3) the tremendous opportunities to make immediate progress in curbing emissions and encouraging innovation in all sectors.

Summary of Response to Question Two: Wildlife are already being impacted by changing climate, and climate change is adding new wildlife management burdens on states. The best way to help fish and wildlife survive those impacts of global warming that may be unavoidable is to provide a dedicated, stable source of funding to state wildlife agencies, which will allow states to prepare locally for the impacts of a changing climate. In particular, the National Wildlife Federation and 332 sportsmen groups, state fish and wildlife agencies, conservation groups and scientific societies have requested in the attached letter that climate legislation include dedicated funding for the Wildlife Conservation and Restoration account of the Pittman-Robertson Act, which funds the State Wildlife Grant Program. Healthier, more robust habitats will be better able to adapt to climate change as an additional stress. State fish and wildlife agencies, funded through the State Wildlife Grants program, will be able to consider the impacts of climate change locally and to work through cooperative partnerships to strengthen wildlife populations and ecosystems.

Submitter's Name/Affiliation: National Environmental Trust
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Executive Summary

The National Environmental Trust (NET) appreciates the opportunity to provide comments on the white paper entitled, "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System." Attached in separate electronic documents are NET's responses to the four primary questions.

Actual net GHG emissions reductions are necessary, in keeping with levels indicated by the scientific community as needed to prevent dangerous and irreversible impacts from global warming. The window of opportunity to avoid the worst global warming impacts is closing. However, we have a reasonable chance of averting severe consequences if atmospheric greenhouse gas concentrations are kept below 450 ppm. Delaying action now will only force more rapid, and more expensive, reductions later.

A mandatory, nationwide GHG emissions cap and registry are necessary to achieve the reductions. Voluntary measures have been unable to reduce U.S. global warming pollution or stimulate the emergence of a robust carbon trading system. A policy that initially slows and freezes emissions and establishes a market signal to provide incentives for a mandatory, cost-effective, declining nationwide cap is possible and necessary.

A mandatory trigger to reassess reduction targets at a set date is necessary to adequately respond to emerging scientific information. Because our understanding of climate change impacts continues to evolve, we must have a built-in structural mechanism that allows our policy response to periodically recalibrate to advances in knowledge. Periodic review, however, should not serve as a substitute for, or otherwise impede, a steadily declining cap that is established at the outset.

If included, a cost containment trigger must be set at a high enough level as to not undermine the "cap." NET does not support a $7/ton "safety valve" as proposed by the National Commission on Energy Policy (NCEP), as it would effectively transform a hard limit on emissions into a "soft cap" and fail to significantly reduce actual emissions. A cost containment trigger is not necessary, but if included, should be set at a level that will allow the market to grow while maintaining a "hard" emissions cap.

Any U.S. approach to regulating GHG must be designed to facilitate and encourage a seamless transition into the international carbon trading system. The larger the market, the greater the opportunity for innovation and least cost reductions in emissions. Given the increasingly global nature of U.S. national markets and economic transactions, it is crucial that U.S. businesses be afforded the opportunity to participate in the international carbon marketplace. The NCEP "soft cap" would impede the ability of a U.S. market to merge with an international trading system.

Submitter's Name/Affiliation: National Lime Association
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Executive Summary

The National Lime Association ("NLA"), representing approximately 95% of U.S. commercial lime production, is pleased to submit this response to the Committee's questions on greenhouse gas reduction strategies.

NLA is the trade association for manufacturers of high calcium quicklime, dolomitic quicklime, and hydrated lime, collectively referred to as "lime." Lime and its derivative products form a basic building block of every industrial economy. These products are consumed across the United States in sectors such as water and sewage treatment, environmental rehabilitation, oil and gas and power generation, and are essential inputs for the production of steel, alumina, pulp, paper, masonry, iron ore, and other critical industries.

The lime industry has made important strides in reducing its greenhouse gas intensity, as it has worked for many years to improve its energy efficiency. Recently, NLA's members agreed, under the voluntary ClimateVISION program administered by the Department of Energy, to reduce, on an aggregate basis, greenhouse gas emissions from fuel combustion per ton of product by 8% between 2002 and 2012.

NLA agrees with other commenters that voluntary approaches to emissions reductions are working, and should be strongly encouraged. If mandatory programs are to be developed, however, NLA believes that the costs and burdens of such programs should be distributed equitably to the economy as a whole, and thus should be applied as far "upstream" in the fossil fuel chain of commerce as is feasible.

Any program should include strong support for research and development of technology approaches to emissions reduction, energy efficiency, and sequestration. In addition, the program should encourage voluntary actions by providing tax and other incentives, and by removing obstacles to emissions reduction projects, such as difficulties in obtaining permits under other federal programs.

NLA believes that greenhouse gas emissions can only be reduced if global efforts are coordinated. Any program should include measures to promote international technology transfer and cooperation. For the same reasons, NLA believes that developing nations must be included in global efforts. However, the United States should avoid the inequities and market distortions that have emerged in trading systems in other nations.

NLA appreciates the opportunity to provide this response, and would be happy to provide any further information the Committee may require.

Submitter's Name/Affiliation: Natsource LLC
Contact: Richard Rosenzweig
Email: rrosenzweig@natsource.com **Phone:+1-202-496-1423x230**

Provide an executive summary of your response(s)

Natsource has chosen to answer specific clarifying questions relating to three of the four questions incorporated in the White Paper that was released in February. A brief summary of each answer follows.

Question 1: Point of Regulation
Natsource believes that the program that is ultimately developed to address greenhouse gas (GHG) emissions should cover as high a percentage of national emissions as is possible, and should cover personal transport. We believe that such an approach would provide the greatest environmental and economic benefits. This approach reflects the following considerations: (1) personal transport emissions are the quickest growing portion of national emissions, and not covering them will make it difficult to achieve climate policy objectives in the longer-term; (2) industrial and power sector emissions are declining in other nations and will continue to do so as these emissions are covered by existing programs and others under development; and (3) existing policies regulating transport emissions were developed to address other energy and environmental challenges and are not adequate to reduce GHG emissions. Our response also identifies several options as to how personal transport emissions could be covered in a GHG control program.

Question 2: Allocation
d. Set-Aside Programs
Natsource did not answer this answer as asked. We addressed issues related to the development of a domestic GHG offset program. We believe that the development of a domestic offset program could provide significant economic and environmental benefits. In our answer, we identify and discuss the issues that need to be considered in the design of such a program and propose a few options that would enable the program to meet its objectives.

Question 3: International Linkage
Natsource answered all of the clarifying questions relating to this question. In short, we believe there are significant benefits that could be achieved from the linking of trading systems. Ultimately, linkage is dependant upon the key design elements in each program. We identify the key design elements of the EU program and those contemplated by U.S. legislative proposals. We then describe the differences between the EU program and U.S. proposals and the concerns that will likely arise in any discussion on linking.

Question 4: Developing Country Participation
We have undertaken a significant amount of work for the National Commission on Energy Policy (NCEP) in their assessment of the efforts of both developed and developing and countries in addressing the climate issue. Natsource developed a range of metrics to assess the performance of eight developed countries and four developing countries in addressing climate change. The metric focused on: (1) environmental performance; (2) efforts in developing a market based framework to reduce compliance costs; and (3) technological efforts. Natsource scored these nations' efforts through a qualitative and quantitative approach.

National Council of Churches 1 3/21/2006

SUMMARY:

The National Council of the Churches in Christ in the USA (NCC) submits comments on its behalf and upon the behalf those signatories indicated in Appendix 1. The comments address sections 2 and 4 of the white paper issued by Senators Domenici and Bingaman on February 2, 2006. Overall, the comments submitted by the National Council of Churches address five key topics. The responses are rooted in our Biblical faith, our Christian teachings, and our hopeful vision of a future world inspired by the love and mercy of our Lord, Jesus Christ. The five themes can be summarized as follows:

Moral imperative:
We are called to care, love, and protect God's gracious gift of creation. For us as people of faith, such a comprehensive threat as global warming creates a moral imperative to respond in a comprehensively meaningful way.

Leadership:
As children of God as well as citizens of the United States we yearn to see leadership from the United States. We are dismayed by the lack of national leadership. We are also aware that genuine leadership – based on wisdom, compassion, and a hopeful vision of the future – is most needed when facing the most daunting challenges. We encourage you to consider the need for such national leadership and action in addressing global warming.

Prevention:
Global warming is a fact. It will become one of the defining forces of the 21st century. Our first concern, borne of our care and stewardship of God's gracious gift of creation, is to prevent further degradation and denigration. To avoid as much damage, dislocation, and disruption for all of God's creation, we must ask you to seriously consider policy and regulation that significantly and rapidly reduces the greenhouse gas emissions and specifically carbon dioxide.

Economic justice:
As children of Christ we are called in the gospel not only to care for the least among us but to add our voice to theirs to remind worldly powers that compassion, mercy, justice and above all love are the lessons of our savior.

Adaptation:
Our beliefs call on us to also consider the current impacts of global warming as well as the future impacts which will only prove more damaging and severe if there is a delayed and inadequate response. The impacts of global warming are being felt around the world as well as here at home. People, and the whole of creation, need help dealing with damage we have wrought, the disruption we have caused and the damage and disruption to come. Money will be needed to help communities– from farmers to endangered species - by assisting with the adaptation.

Submitter's Name/Affiliation: Michelle Manion, NESCAUM
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NESCAUM respectfully submits comments in response to Questions 1, 2, and on related design issues. This Summary provides a brief synopsis of our comments.

1. Who is regulated and where?

- **Large sources of CO_2 and non-CO_2 emissions**—at least 75 to 80 percent of total US CO_2 emissions should be captured in the program's first phase, expanding thereafter to 90 to 95 percent; emissions of non-CO_2 gases (e.g., methane, HFCs) from large sources offer many low-cost mitigation options and should also be captured.
- **Hybrid upstream/downstream point-of-regulation**—A hybrid approach of a downstream cap on large sources and an upstream cap on transportation fuels better balances political, administrative, and economic factors than does a full upstream or full downstream approach. In order to achieve significant emissions reductions in sectors less responsive to price signals (i.e., inelastic demand), complementary policies such as product efficiency standards are needed, particularly in the transportation sector.

2. Should the costs of regulation be mitigated by allocating free allowances? If so, how? Or should allowances be auctioned?

An auction of GHG allowances can lower overall program costs if revenues are recycled to reduce distortionary taxes, but this is largely untested at this scale. It may also be regressive. A direct allowance allocation combined with a partial auction of revenues that expands over time is a sound alternative.

Priority investments should include: energy technology R&D; adaptation research; investments in end-use technologies, efficiency, and conservation; mitigation of impacts on consumers, agriculture, small businesses, and energy-intensive industries. Non-carbon emitters should not be allocated free allowances, but other, complementary policies should address market failures that hinder the deployment of energy efficiency, renewable energy, and innovative end-use technologies.

Related Issues

Specific recommendations for other important design features of a mandatory, cap-and-trade program for GHGs are as follows:

- **Need a rigorous mandatory GHG reporting system**—A credible, rigorous, and transparent mandatory reporting system for GHG emissions is essential for a well-functioning GHG trading market. US EPA's Acid Rain reporting system for SO_2 emissions is the most credible and valid template for a mandatory GHG reporting system.

- **Allow early action crediting**—Early reductions of GHG emissions from mandatory programs and other credible programs in the US should receive allowances under the program.

Denise M. Sheehan, Commissioner
New York State Department of Environmental Conservation

William M. Flynn, Chairman
New York State Public Service Commission

Peter R. Smith, President
New York State Energy Research and Development Authority

New York State

George E. Pataki
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Executive Summary

The design of future federal climate change programs should be informed by the experiences of states like New York that have assumed leadership roles on the issue. New York's energy and climate policies provide important examples on how government can effectively pursue the complementary goals of reducing our dependence on foreign sources of energy while also stimulating the economy and reducing greenhouse gas emissions.

New York has developed sound energy and climate policies that reach every sector of the economy:

- Government Sector. New York State government leads by example by reducing energy consumption and favoring renewable energy.

- Electric Generating Sector. New York is a leader in addressing carbon pollution from power plants. The Regional Greenhouse Gas Initiative (RGGI) will reduce greenhouse gas emissions from power plants, while New York's Renewable Portfolio Standard (RPS) will increase the amount of renewable energy delivered to consumers to 25% by 2013.

- Buildings Sector. To reduce energy consumption in buildings, New York invests over $300 million annually in clean energy and energy efficiency, and has adopted stringent building codes and energy efficient appliance standards. New York is the first state to offer a green building tax credit.

- Transportation Sector. New York has adopted tailpipe standards to reduce greenhouse gas emissions from vehicles, following California's lead. In addition, New York aims to be a leader in the use of biofuels, including cellulosic ethanol.

- Sequestration. Since 1995, New York has preserved nearly 1 million additional acres that will not be developed. This represents the sequestration of over 125 million metric tons of carbon equivalent.

We submit that these and other policies provide good solid examples to Congress as it considers how to design a federal climate program.

**Submitter's Name/Affiliation: Linda Church Ciocci, Executive Director,
The National Hydropower Association
Contact: Linda Church Ciocci
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Phone: 202.682-1700 x.22**

On behalf of the members of the National Hydropower Association (NHA) we are pleased to provide comments to the White Paper, *Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory Program.* The NHA would welcome the opportunity to share our views in greater detail during the Committee-sponsored conference on this topic to be held this spring.

NHA is the only national trade association committed exclusively to representing the hydropower industry. Its 140-plus members are a diverse mix of investor-owned utilities, public power companies, independent power producers, equipment suppliers, manufacturers, attorneys, and consultants. NHA represents over 60 percent of FERC-licensed hydropower capacity, and has been based in Washington, DC since 1983. Its mission is to promote the nation's largest renewable resource, and to ensure that it plays as strong a role as possible in the nation's energy strategies. Our comments on the White Paper focus on the incorporation of clean, climate-friendly hydroelectric generation into any national greenhouse gas regulatory system.

Hydropower must be part of the answer to solving the climate problem. According to the Energy Information Administration, hydropower accounts for approximately seven percent (7%) of the nation's electricity in terms of actual generation (275,006,940,000 KwH) and about nine percent (9%) in terms of generating capacity. Hydropower accounts for 83% of the United States' renewable energy capacity and approximately 77% percent of actual renewable electricity generation. In addition, the Department of Energy estimates that there is an estimated 21,000 MW of additional conventional hydropower capacity in the U.S. that could be brought on line –*without building any additional dams.* This is more than 3 times the amount of installed wind power in the U.S. as of 2004. Utilizing this untapped capacity would result in the avoidance of approximately 35 million metric tons of carbon dioxide per year. In addition, newer technologies are ready for application to capture the energy of waves, tidal flows and ocean and riverine currents.

In response to Question 2, the NHA supports allowance allocation policy for the power sector that recognizes the environmental attributes of hydropower and that creates market signals for additional investments in hydropower. Specifically, NHA:

- Supports directing auction revenue or an allowance set aside resources to generators of clean electricity from hydropower – and other renewable sources.
- Supports extension of EPAct 2005 clean energy technology incentives (including the production tax credit and the clean renewable energy bonds) and other consumer protections to mitigate compliance impacts throughout society.

Submitter's Name/Affiliation: New Mexico Environment Department
Contact: Sandra Ely; Email: Sandra.Ely@state.nm.us; Phone: (505) 827-0351

The New Mexico Environment Department applauds the leadership of Senators Bingaman and Domenici in addressing climate change. Within the state of New Mexico, we are also working on measures to reduce greenhouse gas (GHG) emissions. Governor Richardson has implemented numerous clean and renewable energy initiatives, brought together stakeholders to help us achieve aggressive GHG emission reduction targets, and signed New Mexico state government as the first state in the nation to be a member of the Chicago Climate Exchange. In addition, we have developed a statewide GHG emissions inventory and a report describing the potential impacts of climate change to New Mexico; both of which can be viewed at www.nmclimatechange.us. We look forward to integrating state and federal efforts to reducing the nation's greenhouse gas emissions.

If we as a nation are to successfully address climate change, we must employ numerous strategies in addition to mandatory market-based systems. A multi-pronged approach to move us toward a carbon neutral future should also include fuel efficiency and/or tailpipe GHG emissions standards for mobile sources, upgraded building codes, improved energy efficiency standards for appliances, and promoting clean energy technologies.

We appreciate the ability to comment on the four questions before us. A summary of our response follows:

1. Who is regulated and where?: A 'downstream' approach is practical since this is where process options can be applied to reduce emissions. A cap and trade program should apply to facilities that emit more than a certain threshold amount. We support an economy wide approach to addressing all practical emission sources.

2. Allowance allocation: The best approach may be to distribute a portion of the initial allocations without costs while making some allocations available for auction, including allowance set-asides for new sources. A substantial portion of the revenue generated from auction should support state and regional activities to reduce GHG emissions at the local level.

3. Linkage: Linkages should be established to support the goal of encouraging all countries to participate in emission reduction programs. There are also economic advantages to developing international linkages.

4. Encouraging comparable action by other nations: The U.S. has an opportunity to "lead by example". Establishing a mandatory program to reduce GHG emissions in the U.S. can encourage other nations to take their own action.

5. Additional topics: If we are to "slow, stop, and reverse the growth" of GHG emissions, it will be important to establish a declining cap and reduce the number of allowances as part of a "mandatory market-based system" over time. Governor Richardson has set GHG reduction targets of 2000 levels by 2012, 10% below by 2020 and 75% below by 2050. The federal program should have similar reduction targets.

Submitter's Name/Affiliation: David Doniger, Natural Resources Defense Council
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Executive Summary:

- To prevent dangerous global warming and avoid an expensive "slow start/crash finish," legislation needs to include a long-term declining cap to cut U.S. emissions by 50 percent or more by mid-century. A long-term declining cap opens the door to a new cost-control option – borrowing – that has significant advantages over the safety valve. (additional comments)

- An economy-wide approach should put all significant emitting sectors under a long-term declining cap. Because of the urgency of action, sectoral and state-level approaches should be implemented where progress can be achieved more quickly. The point of regulation should be located midstream, closest to the capital and operating decisions that affect emissions, e.g., power generators, other large energy-consuming and GHG-emitting industries, and refineries. (response to Q1).

- At least half of the allowances should be allocated to reduce program costs for consumers (especially low-income consumers) by incentivizing end-use energy efficiency measures, and other means. Large wealth transfers from consumers to mid- and upstream entities must be avoided. At least one fourth of the allowances should be allocated to incentivize investments in the "big change" technologies needed to significantly reduce emissions. (Q2)

- Five percent of the allowances should be allocated to adaptation assistance and to incentivizing emissions reductions outside the cap, especially by farmers. (Q2)

- We propose allocating allowances for the electric sector and gas sector to distribution entities on behalf of their customers, with requirements to invest in end-use efficiency and provide consumer rebates, especially for low income consumers. (Q2)

- The safety valve is a serious impediment to U.S. participation in international trading systems. The safety valve would lead to flooding the world market with newly-minted U.S. allowances, leading to far less emission reduction than anticipated even under the NCEP recommendations. (Q3)

- U.S. leadership is critical. Other countries are unlikely to act on the necessary scale if the U.S. does not lead. We should also recognize that key developing countries are *already* taking actions to reduce their global warming emissions growth. There is much to learn and work out as other countries react to a reassertion of American participation and leadership. These factors call for retaining flexibility to flesh out the concept of "comparable action" based on experience as it unfolds between now and the first review of the U.S. program. (Q4)

Submitter's Name/Affiliation: Whitman/NRECA
Contact: Carol Whitman
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NRECA appreciates the opportunity to comment on the Domenici-Bingaman White Paper, "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System."

Electric cooperatives are very concerned about proposals that lead to higher energy costs for consumers in the effort to address the climate change issue. As not-for-profit businesses, electric cooperatives must pass through all costs to their consumer members—predominantly families, farms, and small businesses. More than 75 percent of electric cooperatives' generation is coal-based, making cooperatives more dependent on coal than any other segment of the electric power industry. Since coal is the most carbon-intensive fossil fuel, businesses heavily invested in coal will bear a relatively greater burden of increased fuel prices under a mandatory climate policy than those using less carbon-intensive fuels. Cooperatives oppose climate proposals that will increase energy costs for Americans.

NRECA strongly supports the technology-based program included in the Energy Policy Act of 2005, and believes that program must be fully funded and implemented.

If the Congress decides to develop climate change policies that go beyond the provisions included in the Energy Policy Act of 2005, NRECA believes such policies must also be sound energy, security, and economic policies. They must support abundant, reliable, affordable energy for all Americans, including the nation's rural electric consumers. They must be equitable and cost-effective, and not unfairly discriminate against electric cooperatives or electric cooperative consumers. NRECA recommends that any potential future US climate policy must be:

- Flexible and comprehensive, involving all sectors of the economy, all greenhouse gases, sources and sinks. This will lower overall costs compared to a sector-specific program and is necessary if we are to make meaningful contributions to reducing the nation's greenhouse gas emission intensity.

- Equitable and low-cost, balancing the interests of small entities with large ones and equally distributing the burden of any increased fuel costs among all segments of the electric utility industry and the economy. Electric cooperatives, their consumer members, and rural businesses should not pay a disproportionate share for the nation's climate policy.

- Technology-based, with a sustained national commitment to energy and climate technology research, development, demonstration, and deployment. Policies that encourage the acceleration of and investment in the development of new climate technologies and provide incentives for their early deployment should be the basis of US climate policy.

- Global, like the climate change issue itself, lowering mitigation costs and facilitating sustainable international development and technology-based international partnerships. These types of activity will put less developed countries on more environmentally sustainable development paths, ultimately providing the resources necessary to address climate change.

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March 13, 2006
Via Electronic Mail
Climate_Conference@energy.senate.gov

Question 2 (a). Technology R&D and Incentives
Submitter's Name/Affiliation: National Solid Wastes Management Association
Contact: Bruce J. Parker
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Phone: (202) 364-3720

The National Solid Wastes Management Association (NSWMA) is pleased to submit responses to the Senate Energy and Natural Resources Committee's request for comments on the "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System." NSWMA is the non-profit trade association that represents the private waste services industry. Our members include companies that provide municipal solid waste (MSW) collection, processing, recycling, and disposal services throughout North America. The private waste services industry has annual revenues of $33 billion and employs some 271,000 individuals.

The private MSW management industry plays an essential role in protecting our nation's environment and the public's health. MSW management activities are an important, but relatively small source of total GHG emissions. In 2003, all MSW activities amounted to about one-tenth of one percent (0.1%) of the total U.S. GHG emissions. Additionally, the MSW industry has reduced its GHG emissions from 60.5 $MMTCO_2E$ in 1970 to 7.8 $MMTCO_2E$ in 2003, even as the amount of MSW managed grew nearly two fold. These reductions resulted from the increased collection and control of landfill gas, increased recycling and composting rates, and increased combustion of MSW and waste biomass to produce energy. The industry is near completion of a study on its role in reducing GHG emissions and we will forward the paper, with appropriate citations, to the Committee prior to its April 4, 2006 conference.

As the Committee continues its deliberations on the elements of a national greenhouse gas program, we urge the Committee to develop GHG inventory and offsets policies that recognize:

- Modern landfills are potential sources of significant GHG emissions reductions through sequestration of large volumes of carbon;
- Modern landfills destroy methane through landfill gas collection and landfill cover systems; and landfill gas to energy systems are significant sources of renewable energy;
- Waste-to-energy and biomass plants provide renewable "green" energy, offsetting emissions from fossil-fuel derived electricity, and offsetting methane emissions from uncontrolled landfills; and
- The recycling industry generates significant GHG emissions reductions and energy savings by beneficially reusing glass, paper, aluminum and other materials.

Submitter: Jim Frias, V.P. and Corporate Controller, NUCOR Corporation
Contact: Jim Bruce, Wiley Rein & Fielding LLP
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Summary of Nucor Corporation's answers to questions 2, 2g, 2h, 4, 4a, and 4c: Nucor is following the various GHG legislative proposals but has reservations about all so far. Nucor and the U.S. steel industry are doing their part to minimize GHG emissions. The U.S. steel industry has already achieved reductions in GHG to levels far below the Kyoto targeted levels.

Nucor is one of the largest recyclers in the world, using scrap metal to make steel in electric arc furnaces exclusively, producing 67% less carbon equivalent emissions than that produced by conventional steelmaking technologies used in developing countries. Nucor has other revolutionary steelmaking technologies on the horizon. Our Castrip facility will eliminate the need for large, natural-gas-fired reheat furnaces to cast and roll carbon sheet steel, saving approximately 60% of the energy and associated GHG as compared to conventional sheet production processes. Nucor is also developing a sustainable pig-iron project in Brazil to make pig iron using charcoal from eucalyptus trees instead of coal, to reduce net GHG emissions.

Nucor's chief concern is whether U.S. GHG regulation will worsen worldwide GHG emissions by shifting steel production to less efficient, more GHG intensive producers elsewhere. Effective GHG policies should challenge steel producers worldwide to match Nucor's carbon intensity and energy efficiency performance. A mandatory GHG program applied to U.S. operations that adds only to U.S. energy costs will reduce the economic competitiveness of those U.S. facilities and transfer steel production to foreign facilities that are not subject to GHG compliance costs. This, perversely, would encourage those countries to further delay adoption of effective GHG controls.

The U.S. must establish a comprehensive energy and environment program that rewards adoption of advanced, GHG emission production technologies here and abroad, and aggressively discourages production shifts to higher carbon intensity producers elsewhere who are not yet subject to GHG controls. Otherwise, U.S. GHG gas reductions will be more than offset by increased emissions in non-compliant areas. Further, the enhanced comparative cost advantage of steel producers in China, India, and South America will increase the global market share of those producers while increasing the amount of GHG emitted in satisfying the world's demand for steel. Further, those developing nations will have a competitive economic incentive to delay controlling their GHG emissions.

The Committee invited comment on the need for tradable carbon emission allowances for five high energy intensity industries (steel, aluminum, paper, chemicals, and cement), four of which use recycled materials. For steel, the higher the recycling rate, the less the GHG emissions intensity. Awarding allowances for energy intensive industries that recycle in specified amounts might offset the comparative cost advantage of foreign, yet-to-be regulated producers. There also must be means of leveraging full international cooperation. A U.S. graduated, standby carbon emissions excise tax on domestic and imported products from sources that exceed certain GHG intensities might provide that leverage in a manner consistent with the trade laws.

Submitter: Jim Frias, V.P. and Corporate Controller, NUCOR Corporation

Submitter: Jim Frias, V.P. and Corporate Controller, NUCOR Corporation
Contact: Jim Bruce, Wiley Rein & Fielding LLP
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Phone: (202) 719-7552

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Submitter: Jim Frias, V.P. and Corporate Controller, NUCOR Corporation

Submitter's Name/Affiliation: Orion Energy Systems, LTD
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Executive Summary

With a desire to testify in response to specific questions posed within the Senator's request for White Papers, Design Elements of a Mandatory Market-based Greenhouse Gas Regulatory System, we are electing to comment on the clarifying question contained within Question 1a:

- Is the objective of building a fair, simple, and rational greenhouse gas program best served by an economy-wide approach, or by limiting the program to a few sectors of the economy?

Question No.2 and several clarifying questions.

- *Should the costs of regulation be mitigated for any sector of the economy through the allocation of allowances without cost?*

And one clarifying question within Question No. 3.

- *Should a U.S. system be designed to eventually allow for trading with other greenhouse gas cap-and-trade systems being put in place around the world, such as the Canadian Large Final Emitter system or the European Union emissions trading system?*

We will contend that the European Union, the stakeholders most concerned about the effects of Greenhouse Gas ('GHG") on the environment, has embarked on the noble effort of large-scale emission reductions. However, they are using a top-down [highly complex, most expensive implementation] perspective rather than the obvious alternative, that is, the least complicated, most cost-effective means [bottom-up] by which to garner universal support for both the environmental concerns while encouraging market-based, capital-driven economic solutions.

Notably absent within the Request for White Paper's title is the word "free" as a precursor to Market-based GHG Regulatory System. By example, whether the European Union protocol or the proposed Canadian system be analyzed, it is clear that launching either program with top-down approaches have, by the nature of inbred complexities in either, made it most difficult for participation in all sectors of the respective economies.

We will contend that allocations be available for all energy consumers, whether industrial commercial or residential. Clearly, we favor an economy-wide approach. Furthermore, the foundation of the market-based solution should be driven by what is commonly referred to as "the low-hanging fruit", i.e., energy efficiency measures. It is our contention that efficiency is commonly the easiest to measure and verify by baseline and that once that protocol is universally established, allocations should be made available to any who initiate reduction strategies that result in certifiable efficiencies and thus allocations allowed to be traded for credit or offset purposes. We argue the market will grow to include the increasingly complex means and technologies leading to a plethora of emission credit opportunities. We will contend that the government's involvement in the market-based system should be confined to the regulatory and not the entitlement aspect of this free-market concept.

Submitter's Name/Affiliation: **Eileen Claussen, Pew Center on Global Climate Change**
Contact: Nikki Roy**;** Email: royn@pewclimate.org; Phone: 703-516-0633

The Pew Center applauds the Senate Energy Committee for its continued efforts to address the critical issue of climate change. The Center is responding to all four main questions, and submitting additional information on cost containment and recent climate science. Responses draw from an extensive body of analysis, conference and workshop proceedings undertaken by the Center with input from the Center's Business Environmental Leadership Council, scholars, policymakers, and stakeholders; as well as opinions expressed to the Center in discussions with over 30 large corporations. Please note that the Center and most companies surveyed believe that, rather than focusing on any one design element in isolation, any bill must be evaluated as a whole, especially in minimizing the costs to covered entities and the economy.

1. Point of Regulation: Ultimately mandatory GHG mitigation measures should cover the economy as a whole, equitably spreading responsibility among large emitters, the transportation sector, and households. For large stationary sources, the submission of allowances would best be required "downstream" at the point of emission, rather than "upstream." For the transportation sector, the Center recommends an approach that would cover vehicle manufacturers through use of tradable vehicle GHG emission standards.

2. Allowance Allocation: To assist with the transition to GHG regulation, a high percentage of allowances (e.g., 90% - 95%) should be allocated at no cost, rather than auctioned, at least in the initial years of a cap-and-trade system. A small initial auction can provide funds for transition assistance and technology deployment. Over time, the amount auctioned could increase. In providing federal funding for technology development, a competitive process, such as a "reverse auction," allocating funding on the basis of emission reduction potential, can minimize costs. In the early years of the program, the highest priorities for allocation should be transition assistance and technology development; over time the priorities should shift toward rewarding low-emitting technologies and practices. Offsets are critical for minimizing program costs. Use of offsets to meet allowance submission requirements should not be restricted, as long as the offsets meet reasonable standards for real, verifiable emission reductions. Early action credit is important and could be provided by allowing emitters who document emission reductions earlier than the default baseline year to use an earlier baseline, resulting in a higher allowance allocation.

3. Linkage: A U.S. GHG program should be integrated with systems around the world. This is both environmentally and economically important. Linkage will minimize costs while expanding GHG mitigation and technology transfer opportunities. Use of a low safety valve will greatly complicate such linkage and minimize the incentive for technology transfer and innovation.

4. Encouraging Comparable Action: Different policies are needed to address two distinct but related objectives: (1) achieving adequate action by all major emitting countries, and (2) protecting U.S. firms in energy-intensive industries whose goods are traded internationally against competitiveness impacts. The first is best achieved through multilateral commitments; the second through overall cost containment and targeted support for the vulnerable sectors.

Additional Topics - Cost Containment: A "safety valve" is just one cost containment method. Costs to regulated entities can also be minimized through offsets, allocation, linkage, etc. Climate Science: The evidence of globally-distributed climate change impacts is mounting.

Submitter's Name/Affiliation: Billy Pizer/Resources for the Future
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The eventual design of mandatory, market-based limits and incentives on emissions of greenhouse gases will have consequences for everyone who makes or uses energy – that is, everyone in the economy. Economists typically examine these design questions in two dimensions: efficiency (getting the most environmental benefits at the least cost) and equity (who bears the cost). To a large extent, the underlying choice of an emissions trading program provides assurances of efficiency, leaving one to focus primarily on equity. This focus on equity places a premium on understanding the distribution of economic impacts associated with a particular program configuration – even before thinking about alternate allocation schemes. It is also important to understand that some allocation choices can affect efficiency, as well as that certain practical constraints have efficiency consequences, such as regulation in the electricity sector and the potential for emissions leakage into regions of the world not currently facing any emission limits.

In practical terms, it is possible to make a number of useful observations.

1. Economywide coverage provides greater efficiency and spreads the costs of the policy more broadly.
2. Except for its impact on coverage, the choice of upstream or downstream regulation is unlikely to have any impact on who faces what impact from the policy *assuming* allocation and point of regulation choices are entirely distinct.
3. The distribution of impacts is complex, depending to a large extent on how easily higher fuel prices are passed down the line to end-users and households, as well as on how those changes in prices affect product demand. This is further complicated by both trade in competitive international markets as well as regulation in domestic product markets.
4. Allowance allocations that are regularly updated based on output can be used to attenuate output price changes. While this approach is considered inefficient because it distorts prices and the incentive to mitigate across alternate opportunities, such distortions may have desirable distributional consequences that are difficult to achieve through other means precisely because of the price effects.
5. The value of linking trading programs – that is, gaining access to the cheapest reductions anywhere in the world – depends on the relative importance of current mitigation efforts compared to other policy goals, such as technology development. For example, region with low allowance prices and technology incentives may not want to trade with a region primarily using high allowance prices to spur technology.
6. Successful engagement of developing countries will likely require both decentralized credit incentives for mitigation projects, as well as more centralized, strategic efforts at sectoral reform that recognize a country's development goals. Neither approach is likely to be "efficient".

No mitigation benefits will arise if a policy cannot be enacted. Cost-saving but politically difficult design features need to be viewed on the basis of (a) relative importance, (b) likelihood that politics will change over time, and (c) potential to make policy adjustments over time.

Submitter's Name/Affiliation: Jeff Sterba, PNM Resources
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Executive Summary

1. *Point of Regulation*
   - Given the magnitude of the issue of climate change, PNM Resources (PNM) believes that, in order to be comprehensive and effective, a greenhouse gas (GHG) regulatory program should cover all sectors of the economy.

   - On point of regulation of fossil fuels, it is our view that a GHG program should take a hybrid approach: an "upstream" regulatory approach for fuels with millions of users - petroleum and natural gas, and a "downstream" approach for coal which has fewer users. Regarding the upstream point of regulation for natural gas and petroleum, PNM does not have a specific recommendation but urges the Committee to take into consideration administrative simplicity and economic efficiency. For coal, we recommend downstream regulation for coal users with an exception for *de minimis* users.

2. *Allocation*
   - In PNM's view, the great majority of allowances (e.g., 95%) should be allocated without cost in order to transitionally manage the costs associated with regulation. The remaining 5% could be auctioned with the revenues funding important climate change policy objectives through a dedicated Technology Fund to promote new emission-free technologies, and, to a lessor extent, measures for mitigation and adaptation such as low-income residential consumers and vulnerable segments of the manufacturing sector.

   - PNM also believes it is important to provide credits for early reduction and offsets, so long as they meet standards for environmental integrity.

3. International Trading
   - PNM believes there could be significant economic value and substantial potential emission reductions in allowing U.S. companies to invest outside the U.S. to achieve verifiable offsets. We would also support participating in international trading to the extent reasonably feasible.

4. Comparable International Action Requirement
   - PNM Resources believes it is appropriate for the U.S. to take the lead in addressing climate change; however, the nature, scope, and economic impact of climate change requires the U.S. to pursue mechanisms, such as the Asia-Pacific Partnership, to bring in other major nations.

5. Safety Valve
   - We urge the Committee to include a safety valve in any mandatory program in order to provide greater compliance cost certainty and mitigate the distorting effects allowance market price spikes would have in encouraging substantial and undesirable investments in natural gas generation, particularly at the early stages of the program.

Submitter's Name/Affiliation: Andy O'Hare, Portland Cement Association
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The Portland Cement Association appreciates the opportunity to comment on the Senate Energy and Natural Resources Committee's white paper, titled "Design Elements of a Mandatory Market-based Greenhouse Gas Regulatory System. The U.S. cement industry emits approximately 80 million metric tons of CO_2 annually and is, consequently, very interested in the design of any national program addressing greenhouse gas emissions.

The Portland Cement Association (PCA) is a trade association representing cement companies in the United States and Canada. PCA's U.S. membership consists of 45 companies operating 106 plants in 35 states and distribution centers in all 50 states servicing nearly every Congressional district. PCA members account for more than 95 percent of cement-making capacity in the United States and 100 percent in Canada.

Global greenhouse gas emissions associated with cement production are projected to grow significantly over the next several decades, as cement—a key ingredient in concrete—is necessary for essential infrastructure in developed and developing nations. In light of this reality, and in recognition that other sectors may experience similar growth projections (e.g., aluminum and steel production), PCA recommends a hybrid structure for a mandatory greenhouse gas regulatory program.

This hybrid model would be neither and "upstream" nor an "economy-wide" structure, though it would tilt more towards the former than the latter. The near-term objective would be to include a significant portion of the portfolio of greenhouse gas emissions in the U.S., but certainly not all. This hybrid model would include the principal fuel suppliers (oil, gas, coal, natural gas) as well as the top 20 or so large energy intensive manufacturing sectors. The mobile source sector (automobiles and trucks) would be subjected to efficiency standards similar to those being implemented in California. The utility sector would not be granted allowances. They would be required to implement aggressive demand-side management efforts focused on residential and commercial consumers of electricity**.**

PCA believes that a mandatory program should be phased in over a period of years. To that extent, PCA would endorse an approach—at least for the first installment of the program—where the emission allowances are given to the key players in a hybrid trading system for free. Fuel producers would manage allowances for all greenhouse gas emission sources in the economy, with the exception of mobile sources and key, energy intensive sectors (such as cement), which would be subjected to greenhouse gas emission performance standards. Electric generators would not be granted allowances.

PCA believes that any U.S. system should be designed to facilitate the transfer of emission allowances among other mandatory programs in place around the world. In regards to timing for actions in the U.S. versus in developing nation, PCA believes that efforts should be concurrent, though not necessary equivalent.

Submitter's Name/Affiliation: Terry Hudgens, President and CEO, PPM Energy
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PPM Energy (PPM) is a Portland, Oregon based company that develops, operates and markets power generated at wind and natural-gas fired facilities. PPM is and is the second largest developer of wind power facilities in the United States and has a portfolio of more than 1,600 MW of wind power under its control in operation or construction and anticipates bringing a total of 2,300 MW of wind power to market by 2010.

Although wind power currently accounts for less than one percent of the nation's electric generation, it has the potential to provide a much greater share. The American Wind Energy Association estimates that wind will, with help from certain government policies, supply six percent of our electricity by 2020. President Bush is even more optimistic. During a recent speech the President suggested that, with technology innovations, wind power could eventually account for 20% of the nation's electric supply. Wind and other renewable energy sources do, however, face obstacles that need to be eliminated if these technologies are to be fully cost-competitive with fossil-fuel technologies in order to achieve their potential.

Renewable energy offers a number of benefits. By reducing the need for natural gas to fuel electric generation, renewable energy enhances our national security and helps to stabilize natural gas prices. It also provides much needed economic development opportunities to rural America. Moreover, renewable energy offers obvious environmental benefits by reducing greenhouse gas emissions as well as emissions of EPA regulated pollutants.

As Congress explores the best approach for limiting greenhouse gas emissions to address the threat of climate change, it is important that the program be designed in a manner that maximizes both environmental benefits and economic growth. Promoting increased opportunities for renewable energy is not the complete answer. However, it is an essential component of any meaningful program seeking to achieve both goals. To that end, PPM is submitting responses to Question Number 2 (and several corresponding clarifying questions), as well as the request for additional suggestions contained in the Committee's February 2 White Paper. In particular, PPM's responses call for:

- The allocation of emissions allowances to encourage investments in new non-greenhouse gas emitting electric generating facilities.
- The use of funds raised by an auction of allowances to encourage the near-term deployment of non-greenhouse gas emitting electric generating facilities.
- A long-term extension of the renewable production tax credit and the establishment of a federal renewable portfolio Standard requirement. And
- The allocation of greenhouse gas emissions allowances to electric generators based on the amount of electricity produced rather than the type of fuel used.

Submitter's Name/Affiliation: Stuart V. Price, Principal, RSVP Communications
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We propose securing a nonpartisan, professional media relations team to reach out to the general news media as well as to industry-specific media to explain the benefits of the new market-based control program. The selected media relations team would be strongly encouraged to assume the project as pro-bono work and communicate the facts behind the market-based control program (rather than opinions).

Climate change and the burning of fossil fuels may be two of the most significant issues to affect the U.S. Senate. While persons disagree about the degree of anthropomorphic influences, scientists have agreed that the Earth is experiencing severe changes (including ocean current, atmospheric, geophysical, and meteorological disruptions) and that these events will probably take an extreme toll on polar regions, shorefronts, and wildlife over the coming years.

Juxtaposed with these issues, our economy is consuming steadily increasing volumes of coal – one of our nation's largest natural resources.

Constituents deserve to know that Senate leaders are tackling this issue. While the media relations team with Senate Energy and Natural Resources Committee is one of the finest and most effective outreach organizations on the Hill, explaining how the Senate is tackling the mandatory market-based initiative would go far and beyond the normal call of duty. Explaining how the Senate is tackling the mandatory market-based initiative - and the growing issue of climate change - would necessitate a dedicated media relations effort.

The selected team must maintain an objective perspective and not favor one mindset over another. For instance, while the team would primarily profile the new market-based control program, it could also highlight how the Senate works with executive agencies (e.g., Climate Change Science Program, DOE, DOI, EPA, and NOAA) to define and address climate change.

Further, this team could highlight how the Senate considers the costs associated with reducing carbon dioxide emissions along with the best science findings available. This team might also work with major energy companies – including Cinergy and Public Service Electric and Gas – that have already expressed a willingness to comply with mandatory emission guidelines.

The selected team could also help distribute valid information regarding climate sciences to the mass media. This objective could emphasize how the Senate believes the public should receive factual and high quality climate change information via news article, books, presentations, and electronic media.

Running in parallel with these objectives, the media relations team could deliver an overarching message that greenhouse gas control is a patriotic endeavor, that this initiative helps U.S. interests shape domestic and international programs affecting our economy, and that this effort will highlight the Senate and the U.S. as international leaders.

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

The Professional Risk Managers' International Association (PRMIA) is an association of over 31,000 risk professionals from 168 countries. Our membership is diverse geographically as well as across industries. We are a non-profit association dedicated to the advancement of risk management practices globally.

The comments contained in this document were collected over a one week period ending March 9, 2006 and represent input from approximately 45 of our members, from 16 countries. The comments are the unedited opinions left by various members who have expertise and interests in energy and environmental risk management. These comments do not reflect the position of the PRMIA collectively. Rather, PRMIA has used its international network to assemble comments from our members individually. Where the member has provided us with such, their name, affiliation and geographic location is provided with each comment.

PRMIA is a member of the Chicago Climate Exchange and makes the general statement that substantial value can be derived by and created in societies (individuals, businesses and other members of the society) when the prices and costs of certain activities are made more transparent and where mechanisms are provided for the efficient transfer of risks related to those activities among counterparties.

With this in mind, we support the development of markets for emission trading and the concurrent increase in the transparency of costs that comes with such development. We note that environmental risk management is a rapidly growing field and its translation into a financial risk management process will only help with the development of better practices. We note also that risk management practices tend initially to be employed by corporations and large organizations, under one of these three conditions: 1. Large losses experienced by the corporation or organization; 2. Large losses experienced by a close substitute/competitor of the corporation or organization; or 3. Regulatory requirements.

With respect to "the environment", stimulation of environmental risk management practices under the first or second conditions above would likely be realized only in combination with a high level of externalities, impacting those outside of the specific corporation or organization. As such, effective environmental risk management by corporations and organizations may most appropriately be stimulated through a regulatory regime, allowing for the creation of markets that effectively price and facilitate the transfer of costs and risks associated with degradation of environmental factors.

We hope that you find our comments and those of our members to be helpful to you.

Executive Summary

Submitter's Name/Affiliation: Caroline Choi, Progress Energy Corporation

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The following is a brief summary of the questions to which we responded and the answers provided. In responding to the questions raised, Progress Energy is not necessarily endorsing nor opposing the concepts. As noted in our General Comments, it is difficult to comment on a comprehensive approach without a specific proposal that includes details of key elements. The questions posed appear to be focused on a cap-and-trade approach. We believe that other options should be considered as well.

Question 1: Who is regulated and where?

Clarifying Question 1a: Is the objective of building a fair, simple, and rational greenhouse gas program best served by an economy-wide approach, or by limiting the program to a few sectors of the economy?

Progress Energy strongly supports an economy-wide approach.

Clarifying Question 1b: What is the most effective place in the chain of activities to regulate greenhouse gas emissions, both from the perspective of administrative simplicity and program effectiveness?

Progress Energy favors an upstream system, which would be more economically efficient and, from an overall standpoint, would reduce administrative burdens compared to a downstream system.

Question 2: Should the costs of regulation be mitigated for any sector of the economy, through the allocation of allowances without cost? Or, should allowances be distributed by means of an auction?

Progress Energy would strongly support allocations over auctions in any regulatory system distributing allowances or emissions permits.

Question 3: Should a U.S. system be designed to eventually allow for trading with other greenhouse gas cap-and-trade systems being put in place around the world, such as the Canadian Large Final Emitter system or the European Union emissions trading system?

Progress Energy does not favor formal linkage with other GHG reduction systems at this time.

Question 4: If a key element of the proposed U.S. system is to "encourage comparable action by other nations that are major trading partners and key contributors to global emissions," should the design concepts in the NCEP plan (i.e., to take some action and then make further steps contingent on a review of what these other nations do) be part of a mandatory market-based program?

Progress Energy supports ensuring that U.S. actions are not more stringent than those of other countries. We would not endorse any program that would significantly harm the U.S. economy.

Submitter's Name/Affiliation: Daniel Cunningham/ PSEG Services Corporation on behalf of PSEG Power LLC (PSEG)
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PSEG is committed to addressing climate change and has taken actions to reduce or offset the greenhouse gas (GHG) emissions associated with its operations. In 2002, PSEG announced a voluntary agreement calling for a 15 percent reduction in its average annual CO_2 emission rate (relative to 1990 levels) by December 31, 2005. PSEG Fossil also made a $1.5 million payment to the New Jersey Department of Environmental Protection (NJDEP) to assist in the development of landfill gas projects and had agreed to make an additional payment equal to $1 per ton of CO_2 emitted greater than the 15 percent goal, up to $1.5 million, if that reduction was not achieved. PSEG exceeded the target and will pay approximately $700,000 per the agreement.

PSEG joined the EPA Climate Leaders Program in February 2002. On January 13, 2004, PSEG established a goal of reducing its CO_2 emissions intensity (pounds per megawatt-hour) by 18% (nuclear excluded) from 2000 levels by December 31, 2008. The goal will be met in part by re-powering the Bergen, Linden and Albany generating stations. PSEG has developed an emissions inventory and inventory management plan, which was accepted by the EPA Climate Leaders Program. As of December 31, 2005, PSEG is on track to meet the18% reduction commitment.

In response to the white paper, we have addressed Question 1, including clarifying questions 1a and 1b, and Question 2, including clarifying questions 2d and 2f.

PSEG supports the adoption of a cap-and-trade program for the electric generating sector as a prudent first step in addressing U.S. greenhouse gas emissions assuming a fair and cost-effective program design. However, we do not believe that this will be enough; ultimately we believe that an economy-wide approach will be necessary to address U.S. greenhouse gas emissions. As indicated in the White Paper, no single sector is responsible for the majority of U.S. greenhouse gas emissions, and efforts will have to be made to engage additional segments of the economy. Therefore, we support the efforts of Senators Pete V. Domenici and Jeff Bingaman and welcome the current debate. At the same time, we continue to support a sector-specific cap-and-trade program (with offsets) that could serve to demonstrate the merits and viability of a broader economy-wide approach.

The distribution of allowances is a challenging issue, but one that we believe can be resolved through continued dialogue like that initiated by the White Paper. PSEG advocates an updating output based allocation approach as the most equitable and most rationale basis for apportioning missions allowances to the electric generating sector because it encourages efficiency and innovation. The allocation is an important tool for policymakers to drive investment within the sector, as we transition to a less carbon intensive energy system. This approach is in contrast to a fixed, grandfathering approach in which companies receive a constant stream of allowances without regard to their operating efficiency, and new power projects are forced to purchase their allowances from the market.

Submitter's Name/Affiliation: Stephen P. Reynolds, Puget Sound Energy
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Thank you for the opportunity to comment on the white paper, "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System." As the provider of electric and natural gas services to over 1,000,000 electricity customers and over 675,000 natural gas customers in Washington State, Puget Sound Energy is pleased to provide you with our thoughts, comments and responses to the questions raised in the paper.

While Puget Sound Energy does have preferences on how a greenhouse gas regulatory system is structured within the United States, the most important issue for us and our customers is having regulatory certainty in the next couple of years. We currently project that we will need over 1,500 aMW of new electric energy resources to serve our customers by 2013. We are evaluating over 100 proposals to meet this requirement that range from wind and other renewable resources to various thermal generation facilities. Since we don't yet know the future mix of our generation supply, we are very interested in how Congress plans to address the climate change, greenhouse gases and other environmental issues.

Puget Sound Energy chose to reply to the first three of the four questions raised in the paper. To briefly summarize our responses, Puget Sound Energy prefers an economy-wide regulatory approach and we envision a "hybrid" system of capping some entities upstream and some entities at the point of emission in order to balance a high level of effectiveness with a relatively low administrative cost. Large emitters, like electricity generators, should be capped at the point of production, while emissions from the transportation sector should be capped upstream at the refinery level. In regard to the distribution of allowances, PSE believes that allowance should be distributed to fossil fuel users only and that distribution should be freely assigned based on a uniform allocation scheme similar to the one used in the Acid Rain program. However, PSE believes new sources of generation should be allowed allocation. To encourage innovation throughout all levels of the economy, credits for reductions should be provided outside the original permit allocation through certified offset programs.

We look forward to the Senate's future work on this important issue and Puget Sound Energy is willing to be a resource for the United States Senate as it proceeds with this issue in the coming months.

Executive Summary

Nigel Purvis, Senior Scholar, Foreign Policy Studies, The Brookings Institution
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I am a non-resident scholar in the foreign policy program at The Brookings Institution, a non-partisan, independent research center in Washington, DC, committed to innovative policy solutions. Previously, I was a senior U.S. climate change negotiator in the Clinton and Bush Administrations, serving most recently as the Deputy Assistant Secretary of State for Oceans, International Environmental and Scientific Affairs, and Deputy Head of the U.S. Delegation to global climate change negotiations. I serve today as Vice President and Managing Director for External Affairs and Policy at The Nature Conservancy, a leading international conservation organization based in the United States. This submission reflects my personal views and not necessarily those of The Nature Conservancy.

My comments are limited to the Committee's questions regarding whether to link U.S. and international climate systems, and whether to measure climate action by other nations. The United States should link its climate system to market-oriented climate systems in other nations. Importantly, this need not be done through a new *global* climate treaty. While such an approach may make sense at some future time, other approaches are more practical today. For example, emission reduction credits generated under legitimate foreign emission trading systems could be recognized unilaterally under U.S. law without the need for international negotiations. The United States could also negotiate *bilateral* agreements for mutual recognition of emission credits with a small handful of other nations, including Canada and the European Union.

Given its role in the world and contribution to the climate problem, the United States should not condition adoption of a reasonable mandatory emissions cap on action by other nations. The United States should act now without precondition. Yet, it would be reasonable for the United States to adjust its emissions cap in the future based on whether other nations are taking equitable action, as the National Commission on Energy Policy recommended. If the Congress chooses this approach, however, it should avoid adopting a rigid definition of 'equity' because vastly different national circumstances make simple measures unfair and inadequate. Instead, the Congress should adopt general guidelines and benchmarks, and then require the President to report periodically on what other nations are doing. These guidelines, benchmarks and reports should inform future debates in the Congress about the adequacy of U.S. action.

These points are elaborated at length in the accompanying paper which I prepared originally at the request of the National Commission on Energy Policy in 2004. The paper played a role in guiding the Commission to recommend the 'act and review' approach to climate regulation in its final report. The paper addresses directly the specific questions raised in section four of the Committee's white paper.

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Provide an executive summary of your response(s).

My response to the Senate Energy Committee White Paper is filed under the "Additional Topics" document.

In this response I take a bottom-up view to the design of a mandatory market-based program to reduce greenhouse gas emissions by focusing on the tradeable instruments that form the basis of carbon markets, and recommend a few simple actions that Congress could take to promote the start of a market for emissions reductions well in advance of any final legislative action on a mandatory emissions program.

Best regards,
Alex Rau

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

On behalf of the UK Department of Environment, Food, and Rural Affairs, the British Embassy is pleased to respond to question # 5 and submit the attached comments on the elements of a mandatory, market-based greenhouse gas registry system. The UK considers climate change one of the greatest threats facing the global community. To respond, the UK is aggressively pursuing a shift to a low carbon economy and deploying an array of policies and mechanisms designed to achieve our targets in a manner that is both sustainable and economical, including both a tax (the UK Climate Change Levy) and participation in a mandatory, international market-based system (the European Union Emissions Trading Scheme).

The experience of the UK as a participant in the ETS has clarified a number of findings on the economic rationale and competitiveness which may be of interest to the committee. The attached response focuses on six key points:

1. Mandatory, economy-wide tradable permits are effective tools in achieving challenging emissions reduction targets. Future questions regarding linking absolute and voluntary schemes can be addressed.
2. Environmental targets based upon annual reductions in emissions intensity are beneficial and can be implemented effectively if robust monitoring, reporting, and verification are included.
3. A cost cap with a safety valve is not the preferred emission reduction mechanism.
4. Allocation of permits via a measured balance of both auction and free allocation offers the greatest opportunity for effective implementation.
5. Long-term planning is important for both the operators of any market-based regulatory system, and for those the system regulates.
6. Linking of multiple trading systems has the potential for increased economic and environmental benefits.

In conclusion, the UK finds that multiple policies are necessary to achieve desired emission reductions. A market-based emissions trading mechanism delivering emission reductions at the least cost location will lower the overall costs of combating climate change, and is particularly suited to the emissions of greenhouse gases. International cooperation, including the carefully designed and implemented linking of multiple trading schemes, can result in even greater economic and environmental benefits.

We appreciate the opportunity to respond, and look forward to the continued work of the Committee on this important matter.

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Question 2: Should the costs of regulation be mitigated for any sector of the economy, through the allocation of allowances without cost? Or, should allowances be distributed by means of an auction? If allowances are allocated, what is the criteria for and method of such allocation?

Summary of Findings and Recommendations

- Three overarching principles should guide the initial distribution of allowances in a CO_2 cap and trade policy:
  - Efficiency concerns making an auction the presumptive choice.
  - The public policy rationale for free distribution of allowances is compensation. Compensation should be carefully targeted and limited to benefit severely affected parties.
  - Competitiveness concerns suggest a policy design that levels the playing field between regulated and unregulated emission sources.
- With upstream compliance and allocation of allowances to fuel suppliers, the impact policy on electricity prices (consumers) tends to be bigger in regulated regions than in competitive regions but the difference is small on average. The more important issue in determining the effect on price is the mix of fuels used for generation.
- Free distribution to upstream fuel suppliers appears the same as an auction would from the perspective of electricity generators and consumers, except that unlike an auction there is no revenue available for compensation.
- Free distribution to electricity generators benefits firms in competitive regions and consumers in regulated regions.
- Free distribution of all allowances used in the electricity sector would provide compensation to producers far in excess of the cost of firms.

Additional: If there is an additional topic related to the design of a mandatory market based program that you would like to address, please submit comments on this form.

- The safety valve limits program costs but unless it is symmetric (ceiling and floor) it has unfortunate incentive and efficiency properties.

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Rio Tinto is a leading global producer of minerals and metals, with 30 percent of its assets located in North America, and the remainder located in Australia, Africa, Europe, Indonesia and South America. Rio Tinto produces aluminum, borates, coal, copper, diamonds, iron ore, gold, molybdenum, nickel, salt, silver, talc, titanium dioxide, uranium and zinc to help meet global needs and contribute to higher living standards. Rio Tinto's operations are diverse, ranging from small to large mining operations to large manufacturing facilities. Rio Tinto also carries out ancillary industrial activities including rail and port operations, maritime shipping, and power generation. Its US asset base includes:

- Kennecott Energy Company, the largest coal producer in the Powder River Basin, which provides fuel to generate nearly 6 percent of the nation's electricity;
- Kennecott Utah Copper Corporation, an integrated copper mining, concentrating, smelting and refining operation that produces approximately 10 percent of the annual US copper needs, as well as supplying an estimated 9% of the global molybdenum supply; and
- Rio Tinto Minerals, including US Borax, which produces almost half of the world's refined borates and Luzenac America, a large global supplier of talc.

Rio Tinto believes that emissions of greenhouse gases (GHGs) resulting from human activities are contributing to climate change. Avoiding human caused changes to the climate is an important international goal. In order to achieve this goal the world must reduce emissions of GHGs.

Rio Tinto recognizes this will impose costs for GHG abatement and necessitate a change in the way the world produces and uses energy. Given the diversity of our operations, climate change policy development presents a complex set of issues and effects for Rio Tinto. Climate policies and regulation will have broad reaching effects on our business as a user and producer of greenhouse gas emitting energy (fuels and electricity), an emitter of process GHGs, and a supplier of greenhouse gas emitting products as well as a supplier of products that contribute to better energy efficiency and lower GHGs (e.g., copper for high efficiency motors, borates for energy efficient insulation, and aluminum for light-weighting vehicles and equipment).

We must take action now to improve our understanding of the problem and provide technical and policy solutions for both adaptation and GHG emissions abatement. A full and comprehensive portfolio of policy and technology options will be required to achieve the highest benefit and lowest overall cost for society. Time and effort must be invested in a process designed to determine an effective blend of technologies, policies and complimentary programs.

The process initiated by Senators Domenici and Bingaman, including requesting the work of the National Commission on Energy Policy, to explore these and related issues are important steps in developing further understanding of these challenging issues. Rio Tinto is continuing to review these complex issues and looks forward to participating constructively in the ongoing dialogue on climate change policies.

Submitter's Name/Affiliation:

David Sandalow
Director, Environment & Energy Project
The Brookings Institution

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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

I responded to Question 4, making the following points:

- A regular review of what other nations are doing to address global warming should be part of a mandatory market-based program.

- Each review should be based upon a report to Congress from a respected, non-partisan source. The official report to Congress should present facts, not judgments.

- There is no single correct answer to the question "Are mitigation efforts by Country X comparable to those in the United States?" Many factors are relevant in evaluating this question and the value of these factors will change from year to year. Congress should not constrain itself by identifying in legislation the relative importance of such factors or authorizing a federal agency to do the same.

Submitter's Name/Affiliation: Karen Kerrigan, Small Business & Entrepreneurship Council
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Executive Summary

The Small Business & Entrepreneurship Council (The SBE Council) is pleased to provide responses to key questions presented by Senators Pete V. Domenici and Jeff Bingaman regarding design elements of a "mandatory market-based systems" approach, the goal of which is to reduce greenhouse gas emissions. The SBE Council provides response to the four questions – in full, or in part.

The approach advocated by our organization is one that calls for a voluntary mechanism that encourages global engagement and cooperation rather than a "mandatory cap-and-trade" program. Encouraging the development and use of technology in addressing greenhouse gas emissions, better incentives to unleash innovation, and more cooperation between nations is an executable strategy that produces all "winners." Conversely, a mandatory approach will not be embraced by all – particularly developing nations – and put countries like the U.S. at a competitive disadvantage.

A voluntary approach is the more positive and realistic path to take in reducing greenhouse gas emissions.

Submitter's Name/Affiliation: Michael J. Murray, Director of Legislative Policy, Sempra Energy
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Executive Summary

Sempra Energy appreciates this opportunity to comment on your proposed Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System, dated February 2006. Sempra Energy (NYSE: SRE), based in San Diego, is a Fortune 500 energy services holding company whose subsidiaries provide electricity, natural gas and value-added products and services. The Sempra Energy companies' more than 14,000 employees serve more than 29 million consumers in the United States, Europe, Canada, Mexico, South America and Asia.

Sempra Energy found the Climate Proposal of the National Commission on Energy Policy to be well thought-out and contain a number of ideas worthy of serious consideration. The broadly represented Commission proposal suggests that their ideas could find support from both the business and the environmental community. We believe the questions raised in your Design Elements document are going to be the crux of serious debate at the national level on the regulation of greenhouse gasses (GHG), and we would like to provide our thoughts on these issues.

Sempra Energy believe that a national cap & trade program designed to reduce GHG emissions needs to include a hybrid auction of allowances in a national GHG cap & trade program that allocates some allowances to downstream electric generators. This Cap & Trade program should also allow for banking and the use of offsets to minimize costs. Sempra Energy also believes that a provision for a financial safety valve, as originally proposed as part of the amendment to the Energy Bill, is very important. Lastly, Sempra believes that any national program of this nature must provide for a direct linkage to international cap & trade programs. It is important that the primary goal of such a national GHG program be to encourage the development of innovative new technologies not only for electric generation, but also for GHG sequestration and environmental adaptation.

Sempra Energy is in a position to provide some unique value to your April Climate Conference for a number of reasons. These include our experience in California, which is presently establishing a cap on GHG emissions associated with the electric load served by our utilities, our leadership in national LNG infrastructure, and our international presence in generation, pipelines and LNG. Sempra Energy has been debating this issue with California's environmental policy-makers for a number of years, and has expressed its interest in helping to make the program work, as most recently proposed by the California Public Utilities Commission.

We are also at the cutting edge in pursuing acquisition of renewable energy resources, and understand the need for adequate electric transmission infrastructure to provide access to those resources. We look forward to participating in your Conference.

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We have included answers to all four questions that are summarized below.

A "market-based approach" to climate change is one that creates commodity value for "carbon dioxide emissions" (and other greenhouse gases) through measures such as emission caps (e.g. a particular sector of the economy having a total limit on CO2 emissions placed on it) or performance standards (e.g. new automobiles to target a certain CO2 emissions per mile driven), and then allows the market to trade that commodity in order to optimize its use.

The role of an emissions trading system is to direct capital within the covered sector to the point at which it can be most effectively used to mitigate emissions. Within this, there will be periodic compliance obligations to contend with, effectively driving the system forward. Conversely, the objective is not to withdraw capital from the economy and redistribute it to projects according to some subjective or non-market based set of criteria.

The periodic compliance obligations are derived from a long-term national objective, without which an emissions trading system can function.

Capital is used to invest in facilities and mitigate emissions through certain projects. The projects then deliver the necessary reductions that free up allowances for trading in the market.

This means that the point of regulation, i.e. the holder of allowances, should be both the emitter and the party that can initiate the projects that create the reductions.

At the start of a new emissions trading scheme, grandfathering has much to offer in terms of simplicity and a relatively easy transition from business as usual to carbon managed businesses. However it is not sustainable in the long term. Whilst some industries might be able to use a benchmarking approach for allowance allocation, this is unlikely to be universally applicable. Auctioning offers the necessary transparency of allocation, but withdraws capital from the market. An auction-based approach with transparent "in-built" recycle addresses many of the allocation issues and is illustrated in our Q2 submission.

Some technologies needed to mitigate emissions hardly exist today, with one particular example being geological carbon capture and storage. Yet the scale of change (http://www.wbcsd.org/web/publications/pathways.pdf) required in our energy systems over the next 25 and 50 years to address the climate change issue indicates that these technologies will play an important role. Therefore, development funding needs to be set at a level commensurate with the objective of short to medium term commercialization (e.g. 10 years) through a number of large-scale demonstration facilities. Government needs to play a role in such projects, possibly through the funding of one-off infrastructural developments (e.g. CO2 pipeline network) and a proactive approach to planning and construction permit approval.

Addressing climate change is a global issue that will require action by all countries. An open architecture approach, which encourages a global carbon market through linking with other systems, is the most positive way forward. The incentive offered by a global price for CO2 through accessible commodity instruments will encourage a wider number of participants to seek reductions. This will result in a lower overall cost for a given goal.

Submitter's Name/Affiliation: Chris M. Hobson/Southern Company
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

Southern Company strongly supports a voluntary approach to the climate change issue that focuses on development and deployment of innovative, cost-effective, lower-emitting technologies. We oppose approaches that impose mandatory regulation of CO_2 and/or greenhouse gas (GHG) emissions – whether they are intensity-based, cap-and-trade-based, or tax-based. Our comments on certain aspects of a mandatory program are made in response to the Committee's request and should not be construed to constitute endorsement of any mandatory program to address GHGs or CO_2. Southern Company is also a member of the Edison Electric Institute (EEI) and hereby supports and endorses EEI's comments on the White Paper.

It is important to note that the Committee's request for comments has left out the most basic elements that define the stringency of any GHG control program – the timing of its imposition, the level of reductions required, and the availability of cost-effective technology with which to comply with the program. The Committee has also left out the important issue of whether there is a safety valve, an important feature that can limit the economic impact of any such program. These omissions make it difficult for interested parties to comment on the other aspects of a mandatory program.

As to the Committee's specific questions, on the point of regulation, we favor approaches that address the GHG emissions of all sectors, not just large emitters like fossil-fuel-fired electricity generation. There are pros and cons to regulation in an "upstream" or a "downstream" manner. The Committee should also consider hybrid systems that include an upstream point of control for some sources, like transportation, and a downstream point of control for others, like the electric utility industry (all within the context of an economy-wide cap and trade system).

Southern Company believes that allowances should be allocated to emitters, with a small set-aside for new sources, and, for utilities, should be based on heat input, using historical data. Southern Company generally opposes allowance set-asides for the many entities listed by the Committee because they increase the cost of the program for the customers of regulated entities.

Southern Company believes that the door should be left open for any domestic program to link to those in other countries. It is especially important that regulated entities be able to purchase and use international offsets for compliance.

As to whether further steps should be included in a mandatory program based on action by other countries, Southern Company believes that any further steps should require affirmative action by the Congress, and should be contingent on many factors, not just real action by other countries. For example, before taking further steps, the Congress should consider the need for such steps (from an environmental standpoint), and an assessment of whether technology is available.

Executive Summary

Nigel Purvis, Jimmie Powell, Cathleen Kelly; The Nature Conservancy
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The Nature Conservancy is an international, nonprofit organization dedicated to the conservation of biological diversity. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Anchored in strong science and supported by our work on the ground in all 50 states and 27 foreign countries, the Conservancy is committed to finding cost-effective, achievable solutions that reduce the impacts of climate change and benefit people and nature.

The Conservancy strongly supports the immediate adoption of a cost-effective, mandatory program to limit greenhouse gas emissions in the U.S. The Conservancy would like to thank Senators Domenici and Bingaman for the opportunity to share our views on the design of a federal climate change program, particularly those on offsets, climate change adaptation spending and linking a U.S. emissions trading program to those in other countries.

The Conservancy strongly supports the unlimited use of real and verifiable offsets in a federal greenhouse gas cap and trade program. Offsets offer real emission reductions and lower the cost of emission reduction programs. Offsets also protect the market against the price volatility and, thus, lessen the need for cost control instruments such as a safety valve. In particular, the Conservancy strongly recommends including offsets from land conservation and restoration projects in a federal climate program. Proven methods for reliably measuring, monitoring and verifying land-based carbon offsets already exist and are in widespread use.

The Conservancy believes that 25% of the allowance pool revenues should be transferred into a Climate Change Adaptation Fund to support research and other activities that will help plants, animals, ecosystems and the most vulnerable Americans adapt to the impacts of climate change. The Conservancy recommends that these funds be used to support programs that offer the most benefit for people and wildlife at the lowest cost, and restore and protect natural resources that guard against damages linked to climate change (e.g., coastal wetlands that protect against storm surge from hurricanes), among others. The Conservancy believes that 70% of these funds should be given to federal programs and 30% should go to state programs.

Any cap and trade program should be designed to leave open the possibility of linkages with carbon trading programs in other countries, particularly those in Canada and the European Union. Linking a U.S. carbon trading program to a foreign scheme will likely improve market liquidity and lower overall emissions reduction costs for a minimal increase in administrative burden. The Nature Conservancy believes that, because of the United States' large historic responsibility for the climate change problem, our nation must act now to abate greenhouse gas emissions through a mandatory domestic carbon trading program without precondition concerning other nations. Future U.S. actions to reduce emissions even further should be considered in light of the efforts to address climate change by major developed and developing countries and major U.S. trading partners. However, the Congress should avoid setting a rigid, one-size-fits-all quantitative standard under U.S. law.

Submitter's Name/Affiliation: Dr. Margo Thorning, American Council for Capital Formation
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Executive Summary

Comments by Dr. Margo Thorning, Senior Vice President and Chief Economist, American Council for Capital Formation on "Design Elements of a Mandatory Market Based Greenhouse Gas Regulatory System"

This submission includes responses all four questions included in the White Paper. The American Council for Capital Formation does not know how the Senate can design a mandatory GHG reduction program that is consistent with the Sense of the Senate Resolution -- the program should "not significantly harm the US economy" and should "engage comparable action by other nations that are major trading partners and key contributors to global emissions." Key to addressing climate change is to promote global participation and address climate risks in the context of developing countries -- Fossil fuels provide over 80% of the energy used in the U.S. to maintain our standard of living and promote robust economic growth. That is also the level used globally, which IEA projects will be maintained through 2025. The percentage of global GHG emissions from developed countries continues to decline, while that from developing counties increases with economic growth. There is no credible basis for assuming that major developing countries like China and India would adopt a mandatory program to reduce GHG emissions. Climate policy must address the links between energy use, economic development, international competitiveness and poverty reduction. Technology development and deployment offers the most efficient and effective way to reduce GHG emissions -- There are only two ways to reduce CO2 emissions from fossil fuel use -- use less fossil fuel or develop technologies to use energy more efficiently, to capture emissions or to substitute for fossil energy. There is an abundance of economic literature demonstrating the relationship between energy use and economic growth, as well as the negative impacts of curtailing energy use. Long-term, new technologies offer the most promise for affecting GHG emission rates and atmospheric concentration levels. In the interim, actions to reduce the growth of emissions should focus on the deployment of existing, efficient technologies, particularly in the developing world where current efficiency levels are lower than in the developed world. Use of cap/trade programs to drive GHG emission reductions will have a significant economic impact and creates disincentives for innovation -- Cap/trade systems for greenhouse gas emissions, whether downstream or upstream, would be overly bureaucratic and result in sectoral distortions due to the differential application of caps and/or the selective allocation of credits. These sectoral distortions result in raising the cost of GHG reductions and unfairly favoring or damaging individual business sectors. Cap/trade systems with auctioned credits or 'safety value' government sales of credits are distorted tax systems, incurring the economic damages of a carbon tax without the efficiency of a uniform, economy-wide cost of carbon emissions. Implementation of a carbon tax to drive GHG emission reductions will have a similar economic impact as a cap/trade system -- A carbon tax would raise energy costs significantly and have an economy wide impact. For example, a CO2 price of about $27/MtCO2 (or $100/MtCarbon) is equivalent to about a $10 per barrel increase in oil prices.

Submitter's Name/Affiliation: Tom Tietnberg/Colby College
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

I have answered Question 1 and added an additional topic. In Question 1, I show my preference for an upstream regulation. In the additional topic, I show a preference to include a safety valve.

Submitter's Name/Affiliation: Shawn Glacken, TXU Power
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Summary of TXU's Responses to the White Paper

TXU is opposed to the mandatory regulation of greenhouse gas emissions, whether in the form of a carbon tax, a cap-and-trade program or any other form of mandatory emissions controls. We believe that there would not be any real environmental benefits from such a program and that mandatory controls would have adverse effects on the nation's economy, and on jobs, lifestyles, and financial well-being.

While we are choosing to participate in the debate posed by Senators Domenici and Bingaman, we question the entire premise and effectiveness of a mandatory, market-based greenhouse gas program in the United States. The most famous and extensive example of this model is the Kyoto Protocol, and this treaty has not resulted in any meaningful emissions reductions among its parties. Even if Kyoto's average emissions reductions target of 5.2% below 1990 levels among industrialized countries were achieved, this result would have almost no effect on climate change. We wonder why the United States Congress would consider adopting this flawed model. Accordingly, the following responses to the questions posed in the Domenici-Bingaman White Paper should not be interpreted to mean that we believe a carbon control bill should be passed by the Congress.

Our attached responses reiterate our opposition to greenhouse gas regulation, but also point out some design issues in such a program if one were to go forward. Our responses to the four major questions posed can be summarized as follows:

Question One: Any legislation should cover all sectors of the economy and should focus on the upstream segments of the economy.

Question Two: Allowances should be distributed without charge to help offset the costs of compliance, and some allowances should be set aside to allow for new sources and increased growth for existing sources.

Question Three: TXU supports a worldwide solution to climate change that incorporates developed and developing countries equally. Assuring that any U.S.-based cap-and-trade system is compatible with cap-and-trade programs outside the U.S. would help facilitate this larger goal.

Question Four: The U.S. should not take unilateral actions unless other nations, especially developing nations, are also part of a mandatory market-based program. In twenty years, developing country emissions are expected to overtake developed country emissions and thus must be addressed now.

Submitter's Name/Affiliation: William L. Kovacs/U.S. Chamber of Commerce
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The U.S. Chamber's submission consists of this Executive Summary and an "Additional Topics" document. As discussed in the Additional Topics document, the U.S. Chamber's main interest is that first and foremost, any legislative initiative aimed at reducing greenhouse gas emissions must be true to the plain language of the Sense of the Senate Resolution that any actions taken to address climate change must not significantly harm the United States economy. It is important to note that the Resolution certainly does not say that any actions taken to address climate change must not significantly harm the United States economy *only in the near term*. Rather, the Resolution indicates that the economy must not be harmed, *ever*—in other words, not now, not tomorrow, not in the mid-term, and not in the long-term. If Congress had intended to allow the U.S. economy to be harmed at some point in time, it surely would have said so. Yet no member of Congress has gone on the public record stating that it would be okay at some point in time to harm the U.S. economy. Congress clearly understands that economic harm is never in America's best interest, hence the Resolution that actions taken must not harm the economy. The reason for stressing this point is that the U.S. Chamber sees no indication that, with regard to addressing climate change, there has ever been a careful assessment of the long-term economic consequences and impacts of any legislatively proposed mandatory emissions control regime, which is sure to evolve with time. This observation is important, for as discussed in the "Additional Topics" portion of this submittal of the U.S. Chamber, if the price of carbon credits is allowed to rise over time, this is sure to impact the U.S. economy. Perhaps more problematic, such a legislative initiative is sure to place the U.S. at a competitive disadvantage in a global marketplace wherein developing nations fail to participate in mandatory regimes aimed at curtailing greenhouse gas emissions, even though in the future these developing nations will be major emitters of such gases. Taken as a whole, unless due consideration is given to the long-term impacts of mandatory regimes for controlling greenhouse gas emissions, legislative efforts will neither satisfy the "no harm" imperative of the Sense of the Senate Resolution nor can they be expected to induce massive technological innovation. Indeed, there is strong reason to believe that the proposed framework will fail to get needed innovative technology up and running and out in the field when and where it is needed—Congress has already heard in previous testimony given by Stanford University trained economist Anne Smith that a cap-and-trade program cannot stimulate massive technological innovation. Though this point must receive careful consideration, it is essentially ignored in the White Paper. It is equally important that actions taken to address climate change not be carried out in isolation; rather, they must concurrently accommodate manifold other important issues—such as assuring the availability of an adequate energy supply over the long term, providing for national and international security, and facilitating a smoothly operating global marketplace in concert with long term sustainable development. In relation to the above expressed concerns, the U.S. Chamber believes that the White Paper will not suffice as an adequate framework for consideration of the climate change issue. Moreover, the White Paper is built on a framework that is and will indefinitely continue to be muddled in controversy owing to conflict among competing interests, the inevitable intricacy of the proposed approach, and failure to provide a vision that accommodates the manifold needs of all the nations of the world and the global marketplace. In sum, the White Paper framework raises the looming prospect of having to depend on inefficient management systems of almost incomprehensible complexity and uncertainty. A greatly expanded dialogue must precede any legislative action, and this will take time to accomplish.

Submitter's Name/Affiliation: Union of Concerned Scientists
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Global warming is one of the most serious challenges humankind has ever faced. It raises fundamental principles of stewardship and our shared responsibility to future generations. Scientists are acutely aware that our window for stabilizing greenhouse gas concentrations at reasonably safe levels is closing quickly. The scientific community has long moved past discussion of whether there is warming to the more profound question of how much time we have left to avert catastrophe. Long-lived heat-trapping gases in the atmosphere have already consigned the planet to significant warming. Several recent analyses have concluded that, to avoid dangerous climate change, the United States and other industrialized countries will need to reduce emissions by 60 to 80% from 2000 levels by 2050—and that we must have the national (and international) policies in place within the next 5 to 10 years to achieve this ambitious outcome.[1]

We welcome the opportunity to comment on the design elements of an economy-wide system to slow, stop and reverse emissions of greenhouse gas emissions. We urge the Congress to act expeditiously and aggressively to pass legislation that meets the criteria of the Sense of the Senate Resolution. UCS has provided responses to questions 1, 2, 2a, 3 and 4. The following is a brief summary of those responses.

Question 1: UCS believes that a national program should (a) adjust the point of regulation by sector to achieve maximum leverage on producer and consumer actions and (b) employ complementary sector-based policies to spur innovation and increase consumer benefits.
Question 2: UCS recommends that the primary mechanism for distribution of emissions allowances be an auction. We also believe that technology R&D and incentives are critical to stimulating technology innovation.
Question 3: UCS recommends that a U.S. cap-and-trade system be designed to eventually allow for trading with other systems and believe that intensity-based systems and price caps create significant hurdles to system integration. There are significant advantages to both U.S. companies as well as the environment to designing a U.S. system that can be linked to systems in other countries.
Question 4: UCS believes that the United States can best encourage action by other nations by committing to reduce our emissions of greenhouse gases.

[1] "The scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action. It is vital that all nations identify cost-effective steps that they can take now, to contribute to substantial and long-term reduction in net global greenhouse gas emissions." Joint Science Academies Statement: Global response to climate change, June 2005.

Submitter's Name/Affiliation: Jerry Unruh/Member of Union of Concerned Scientists
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

How ever a plan to deal with climate change is structured, it should be done rapidly and with "Manhattan Project" type urgency and resources. Virtually all recent research shows that the problem is real and worse than initially thought. No matter how fast mitigation is implemented, we are already in for substantial change because of the greenhouse gases that have already been emitted. Katrina, if nothing else, should be a wakeup call that business as usual is no longer appropriate. In fact, I remain quite concerned that oil and gas production in the Gulf of Mexico may become unsustainable due to the increased severity of hurricanes in the Gulf.

As such, I have submitted responses to Questions 1 and 2. I have focused mainly on regulation of primary producers of fossil fuels, relatively non-bureaucratic ways of regulating individual consumers, the need to focus on R&D of energy storage, and education to reduce consumption. I have used our private residence as an example of reduced consumption, not out of self-aggrandizement, but to show that it is possible. I have not specifically addressed changes required in our transportation system, and readily admit that the changes there may be harder than for consumption elsewhere in the economy.

Submitter's Name/Affiliation: United States Conference of Catholic Bishops
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Provide an executive summary of your response(s). ***Do not exceed the remainder of this page.***

The United States Conference of Catholic Bishops (USCCB) urges Congress to further a constructive dialogue about ways to address global climate change and to consider the moral obligation of leading other nations in safeguarding the global environment and our natural resources for future generations.

USCCB recommends the following as central priorities: 1) addressing the needs of populations in the United States (and internationally) who are most vulnerable to the economic changes resulting from global climate change and ameliorative policies, i.e., people who are poor and displaced workers; and (2) providing technological and economic assistance to developing countries to help them control and mitigate the effects of global warming.

Submitter's Name/Affiliation: United States Combined Heat and Power Association
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Phone: (413)-863-3500

We are pleased to respond to the questions posed by Senators Bingaman and Domenici in their Feburary 2 White Paper. These comments are filed on behalf of the United States Combined Heat and Power Association (USCHPA), located at 218 D Street SE, Washington DC 20003. The USCHPA brings together diverse market interests to promote the growth of clean, efficient CHP in the United States. It is a private, non-profit association, formed in 1999 to promote the merits of CHP and achieve public policy support. Accompanying this summary, please find our responses to Questions 1, 2 and 3. A brief summary of our responses to these questions is as follows:

Question 1

- Economy-wide cap-and-trade systems are preferable to sector-specific approaches.
- The point of regulatory oversight should be the maximum number of opportunities for the most cost-effective reduction exist, on a full-fuel-chain basis. This location will vary by sector, and may not the concurrent with the point of GHG emissions.
- All tons of GHG emission should be treated equally, with an equivalent $/ton value.
- Low- or negative-cost approaches to GHG reduction should be favored, and the point of regulatory control should be chosen to ensure that they are.

Question 2

- We favor auctions over allowances. If allowances must be allocated, they should be allocated on an output basis where all useful outputs (e.g., electrical and thermal) are counted. Ignoring thermal output encourages the wasting of thermal energy.
- Offsets should be used only to the extent required to address inefficiencies caused by the lack of economy-wide participation in the cap-and-trade program. To the extent that such inefficiencies arise, offsets for technology deployment should take preference over R&D. As the scope of a cap-and-trade system expands to include more of the economy, it is appropriate to spend proportionally more money on R&D.
- In all cases, offsets, set-asides and other funding mechanisms should be preferentially directed to those actions that deliver the lowest cost of GHG abatement. Protocols should not make the mistake of presuming that GHG reductions cannot be realized synergistically with economic growth, nor should they make the mistake of assuming that energy markets are currently efficient.
- We do not favor setting funds aside for consumer protection or other purposes, due to the economic inefficiency so introduced, and the fact that the costs of inaction on GHG reduction are probably more regressive for disadvantaged cohorts than the costs of action.

Question 3

- We strongly support linkage to other GHG cap-and-trade systems.

Submitter: Raymond Bracy, Vice President for Corporate Affairs, Wal-Mart Inc. 702 SW 8th St., Mitchell Building Bentonville, AR 72716-0130 E-mail: Raymond.bracy@wal-mart.com Ph: 479-277-0938

EXECUTIVE SUMMARY

Wal-Mart Stores, Inc. ("Wal-Mart") appreciates the opportunity to provide input to the Senate Energy and Natural Resources Committee on the "Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System." As the largest retail company in the world, the largest private consumer of electricity in the United States and the owner of the largest private heavy-duty truck fleet in the country, Wal-Mart takes keen interest in the work of the Committee on this critical issue. Wal-Mart understands that the scope and scale of its business have significant environmental impact and that its operations lead to significant greenhouse gas ("GHG") emissions. However, the scope and scale of Wal-Mart's business also enable the company to effectuate substantial improvements on a global scale. Wal-Mart recently has adopted a number of strong commitments to sustainability. Our environmental goals at Wal-Mart are simple and straightforward: 1) to be supplied 100 percent by renewable energy; 2) to create zero waste; and 3) to sell products that sustain our resources and environment. A crucial part of reaching the company's environmental goals is reducing the company's GHG emissions and its impact on the world's climate. Wal-Mart already has taken steps to reduce its GHG emissions and is committed to making significant further progress. In the comments attached, the company provides input on each of the four questions posed by the White Paper.

Wal-Mart understands the critical need for action to address climate change and would accept the approach of a mandatory cap-and-trade system to control GHG emissions. Wal-Mart strongly believes that such a system must provide fairness to those companies and entities, like Wal-Mart, that have already taken substantial steps to reduce GHG emissions and that are committed to making further significant progress. Wal-Mart will not wait for a mandatory control system to reduce its GHG impact, but any mandatory system should recognize previous measures taken and should ensure future incentives for such investments and best practices. In addition, Wal-Mart's top priority always has been the well-being of its customers. Any GHG control system must protect the interests of all consumers.

Wal-Mart believes that electric generators, large industrial entities and the transportation sector are the logical sectors to be covered by a mandatory cap-and-trade system. These three sectors account for approximately 70% of the GHG emissions in the United States and represent sectors where emissions trading could most easily be implemented. Regardless of which sectors are regulated or where within those sectors emission limitations are imposed, Congress should set aside a portion of the allowances under emission caps for non-regulated entities that undertake projects to reduce GHG emissions. Such a set-aside must be used to incentivize companies to take beneficial action and reward them for doing so. Wal-Mart also believes that a U.S. cap-and-trade program should leave open the opportunity for integrating with other cap-and-trade programs around the world. In addition, Congress should ensure that trade barriers do not restrict the transfer GHG reduction technology to U.S. trading partners.

Wal-Mart believes that the U.S. should provide strong leadership on climate change, with the help of companies like Wal-Mart, while serving the interests of U.S. consumers. Wal-Mart welcomes the opportunity to participate in this process.

March 13, 2006
Via Electronic Mail
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Waste Management, Inc. (WM) is pleased to submit comments in response to Questions 2a—Technology R&D and Incentives, and Question 3—Design of a U.S. System Comprising Global Cap & Trade.

As the nation's largest operator of municipal solid waste (MSW) landfills, waste-to-energy facilities, and refuse collection vehicles, as well as the nation's largest recycler, Waste Management is a major stakeholder in any public policy that addresses climate change. WM recognizes its obligation as an industry leader to continue its efforts in developing technical solutions to reduce greenhouse gas (GHG) emissions from the waste industry and to participate in the development of sound climate change policy in the U.S. WM's contributions to greenhouse gas reduction occur through:

1. *The destruction of methane gas emissions from landfills,*
2. *The operation of both landfill gas-to-energy and waste-to-energy plants that produce electricity, fuels, and chemicals to displace fossil fuel use,*
3. *Development of landfill gas to liquid natural gas conversion technology,*
4. *Development of bioreactor landfill technology that will allow the more effective collection and use of landfill gas,*
5. *Advancing technology for alternative fuel use and engine design to lower the greenhouse gas emissions from refuse collection and transport vehicles, and*
6. *Increasing the recovery of valuable materials through the nation's largest recycling program.*

WM recommends further stimulation of private investment and R&D such as the highly successful Section 45(d) of the Internal Revenue Code, which provides tax credits for development of technology to produce electricity from renewable resources.

WM was the first environmental services sector company to join the California Climate Action Registry, and is also a founding member of the Chicago Climate Exchange (CCX), the nation's first voluntary industry market for trading of GHG reduction credits. WM has committed to a 1% per year reduction in its climate change baseline gas emissions from 2003 through 2006 as part of its participation in CCX. Should Congress design a mandatory, market-based GHG cap and trade system, it should look to the successful CCX system, which is multi-sector, transparent, rules-based and verifiable as a system model. Further, Congress should include a robust, flexible GHG offsets program that achieves real, surplus, and verifiable emissions reductions in all six gases. A flexible offsets program offers the most cost-effective means to promote diverse compliance options. Flexibility should extend to the location of the offset projects, the type of offset projects, and the amount of offsets a regulated entity can use to achieve compliance with emission limits. Finally, Congress should ensure that those entities already making reductions are recognized and receive credit for early action.

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EXECUTIVE SUMMARY

The World Resources Institute (WRI) is submitting responses to Questions 1, 2, 3(a)(b)(c), and 4(a)(b)(c).

To mitigate the risk of dangerous climate change and avoid the worst physical and economic impacts, scientific evidence suggests that policies are needed to drive significant near-term reductions in emissions and achieve long-term stabilization of atmospheric greenhouse gas (GHG) concentrations. For the U.S., this challenge implies that economy-wide emissions will need to peak and begin declining on an absolute basis within the next 10 years. In light of the urgency and stringency required in a U.S. program to address climate change, a mandatory market-based system for GHG regulation is a vital option that could serve to reign in emissions quickly and at least cost. While there are additional policy options that are complementary and deserve consideration, market-based systems have proven to be powerful tools and are a key means to making cost-effective emission reductions.

Experience with mandatory market-based systems for GHG emissions implies that political considerations have as much to do with program design as technical or efficiency-based considerations. In all existing or proposed GHG emission trading systems, upstream regulation has been eschewed in favor of downstream regulation. One important reason for this is that an upstream system is effectively a carbon tax for which the value will be variable and unknown in advance. Another is to establish a relatively simple system first rather than cover every economic sector, with all that entails in terms of complexity and interest groups. Downstream systems tend to start with narrow coverage and an explicit aim to become more inclusive over time.

Distribution of allowances too is predominantly political. Auctioning as opposed to free allocation presents considerable practical and theoretical strengths, but in general these have not been sufficient to overcome industry opposition to auctioning. As greater experience is gained with market-based systems, however, the appeal of an auction is increasing. If a free allocation is pursued, several inter-related design variables must be considered simultaneously.

Linking emission trading systems is desirable where possible but can be done successfully only where a number of conditions are satisfied, especially mutual confidence. This makes linking plausible with the European Union and Canada but not with countries such as China and India for the foreseeable future. No overseeing structure is needed to link trading systems.

There is no single metric for evaluating relative efforts of different countries, though there is a range of metrics that can throw light on the subject. The appropriate consideration is whether international partners are taking *appropriate* levels of action rather than *equal* levels. Making U.S. policy formally contingent on specific actions in other nations would be counter-productive, but formal or informal review of relative efforts is a normal part of international negotiations.