Testimony Summary

Jason Grumet
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Before the
Senate Committee on Environment and Public Works

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The National Commission on Energy Policy is a diverse and bipartisan group of energy experts that first came together in 2002 and issued a comprehensive set of consensus recommendations for U.S. energy policy in December 2004. Those recommendations included a proposal for a mandatory, market-based, economy-wide program to reduce U.S. greenhouse gas emissions in a manner that is economically responsible and encourages action by our major trade partners. More recently, in April 2007, the Commission issued a set of updated recommendations that called for strengthening several aspects of our original climate proposal.

These updated recommendations reflect our conviction that the case for mandatory action to limit U.S. greenhouse gas emissions has become more compelling and more urgent than ever. In our view, the most effective approach would:

- Establish a policy architecture that is robust enough to be sustained for many years while retaining the flexibility to adjust over time as scientific, economic, and technological developments, as well as actions by other nations, warrant.
- Be market-based and economy-wide.
- Provide cost certainty as a means of forging the political consensus needed to move forward without further delay.
- Create compelling positive incentives for wider international cooperation by conditioning future U.S. efforts on comparable action by other nations.
- Include a major technology program to spur the development and deployment of affordable, low-carbon technologies as a means of reducing the costs associated with achieving emissions goals while simultaneously advancing energy-security objectives and ensuring U.S. competitiveness in future global markets for clean technologies.
- Fairly distribute the burden of regulation among major stakeholders—including consumers and taxpayers as well as energy-intensive industries—while maximizing benefits to society as a whole through a thoughtful approach to key design issues such as allocation.
- Place the compliance obligation at or near primary fuel producers or suppliers to reduce administrative complexity and the potential for emissions "leakage" while facilitating efficient pass-through of the carbon price-signal

Allocation—that is, how government distributes allowances at the outset of an emissions trading program—is a contentious issue and one that is especially important, for reasons both substantive and political, to the success of a mandatory policy. The

Commission's current position on allocation is informed by several years of analysis and debate, the results of which are described in a Commission Staff White Paper. Our chief conclusions can be summed up as follows:

- Allocation should primarily be used to promote a more equitable distribution of cost burdens, recognizing that the overall burden imposed by regulation is likely to be small in the context of the economy as a whole and that allocation does not affect program incentives or outcomes.
- Compensating major energy-related industries (including suppliers of primary fuels, the electric power sector, and energy-intensive manufacturers) for any short-term economic dislocations incurred in the transition to a lower-carbon economy should require no more than roughly 50 percent of the total pool of allowances initially available *on an economy-wide basis* under a trading program.
- Remaining allowances should be used to generate funds for public purposes, such as mitigating impacts on low-income consumers and investing in low-carbon energy technologies and end-use efficiency.
- Over time, the share of allowances distributed at no cost should diminish in a predictable manner as part of a gradual transition to a more complete auction.
- Within the pool of allowances distributed for free to industry, *inter*-sector allocation decisions should be guided by the incidence of actual cost burdens. Because the ability to pass through costs varies across different industries, there should be no presumption that industry sectors are entitled to equal shares of allowances, either in absolute terms or as a fraction of their emissions or fuel use.
- Careful consideration will need to be given to *intra*-sector allocation within the electric utility industry where different regulatory structures create the potential for price distortions across regulated versus competitive markets. Policymakers should therefore explore a variety of allocation options within this sector that would assure equitable outcomes for consumers and companies in different parts of the country.

The Commission is well aware that reaching consensus on the issue of allocation will not be easy: the subject is inherently complex and many of the decisions involved are fundamentally distributional in nature, which makes them difficult to adjudicate in a manner that satisfies all parties. Nevertheless, few other nuts-and-bolts aspects of designing a greenhouse-gas trading program are likely to be more important to the ultimate goal of advancing meaningful and comprehensive climate policy in the United States.

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Good morning Chairman Boxer and Members of the Committee. I am Jason Grumet, Executive Director of the National Commission on Energy Policy—a bipartisan group of energy experts that first came together in 2002 with the support of the Hewlett Foundation and several other private, philanthropic foundations. The Commission's ideologically and professionally diverse 21-member board includes recognized energy experts from business, government, academia, and the non-profit sector (see attachment). In December 2004, we issued a comprehensive set of consensus recommendations for U.S. energy policy, which included a proposal for a mandatory, market-based program to limit economy-wide U.S. greenhouse gas emissions.[1] More recently, in April of this year, the Commission published updated recommendations that called for strengthening several key parameters of our original climate-policy proposal.

The fact that we are here today, discussing the arcane issue of allowance allocation, shows how far the political debate on climate change has moved in the last few years. Increasingly, the real question for all parties to this debate is not *whether* we should act, but *how*. What program design will achieve meaningful results, prompt wider international cooperation, and set this nation on an economically responsible path to a lower carbon future? The proposals now under discussion by this Congress contain, in our view, many of the necessary elements of a sound solution. At the same time, we are under no illusions about the difficulty of building the consensus needed to pass legislation. And in that process, we expect few issues will prove more important than allocation. Before turning to this critical subject, however, I'd like to briefly outline the

[1] The full report, titled *Ending the Energy Stalemate*, can be found at www.energycommission.org. The Commission's updated April 2007 recommendations are also available at the website.

Commission's broader views concerning climate policy and the reasons for urgency in moving forward.

The Science Points to Mandatory Action

Two years after the Commission released its original report, the scientific case for mandatory action to reduce greenhouse gas emissions is more urgent and more compelling than ever. Over the last several months, the United Nations Intergovernmental Panel on Climate Change (IPCC) has been releasing portions of its latest (fourth) assessment concerning the science, potential impacts, and mitigation options for global warming. The IPCC assessment, which represents the consensus view of hundreds of scientists around the world, tells us that evidence of global warming from the last six years of climate research is now "unequivocal." It points to multiple lines of evidence, from "observations of increases in global average air and ocean temperatures" to "widespread melting of snow and ice, and rising global mean sea level" and confirms that the current level of carbon dioxide (CO_2) in the atmosphere "exceeds by far the natural range over the last 650,000 years."[2]

This increase has already led to warming – eleven of the last twelve years rank among the twelve hottest years on record. And because of the long-lived gases already in the atmosphere, this warming will continue. In fact, after reviewing the likely impacts of further, unchecked warming, the IPCC estimates the onset of many of the most serious consequences—from damage to coasts from floods and storms, to impacts on water supply, disease vectors, and large-scale risk of species extinction—at somewhere between a 2ºC and 3ºC increase in global mean temperature. To limit warming to this level, it is now clear, will require that we begin to achieve significant reductions in global emissions by mid-century. It's an enormous challenge to be sure, since current trends are going in the wrong direction. In fact, if nothing is done we can expect global emissions to increase by as much as 50 percent in just the next 25 years (by 2030). In that case,

[2] IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom. This and other IPCC reports are available at http://www.ipcc.ch/.

climate scientists estimate that twice as much warming will occur over the next two decades than if we had stabilized heat-trapping gases at 2000 levels.

So to sum up: it is clear that we must begin to face this challenge. It is also clear that voluntary action will not be enough. That has been the policy of the United States for the last decade or more. And while we've seen admirable initiatives from several large companies and while important progress has been made in advancing new technologies, we are still headed in the wrong direction: down a path of continued emissions growth. In fact, U.S. energy-related CO_2 emissions were 13 percent higher in 2005 than they were a decade earlier, in 1995, and 19 percent higher than they were in 1990. According to the Energy Information Administration (EIA), our nation's energy-related CO_2 emissions are likely to grow another 34 percent by 2030 if current trends continue.[3] At the same time, we know the costs of further delay in initiating reductions are likely to be substantial. The faster we can get started, the smaller the burden of future mitigation and adaptation efforts and the smaller the human suffering and long-term environmental damage.

Elements of an Effective Climate Change Policy

With the potential risks of climate change no longer in doubt, it is imperative that the United States engage this issue, act responsibly, and provide leadership. Ours is the world's largest economy and it accounts for 25 percent of global CO_2 emissions.[4] Without our participation and leadership, the rest of the world cannot effectively address what could be the most difficult and far-reaching environmental problem we have yet faced. The Commission believes that the U.S. can best provide leadership by adopting approaches that do not significantly harm our economy and that encourage other nations to take comparable action.

[3] Based on reference case forecast in EIA's 2007 Annual Energy Outlook. Available at: http://www.eia.doe.gov/oiaf/aeo/aeoref_tab.html.

[4] Note that although carbon dioxide is the predominant greenhouse gas, there are other gases that contribute to climate change. These include methane, nitrous oxide, and some industrial fluorinated gases. These gases would all be covered in the Commission's climate proposal.

As I have already said, the first requirement of an effective policy is that it be mandatory. In a competitive market economy, where companies are expected to maximize shareholder value, it is unrealistic to expect them to invest significant resources absent a profit motive. As importantly, if the world's largest economy continues to rely on voluntary action alone it is very unlikely that countries like China, India, and Brazil will take serious action aimed at limiting their own rapidly growing emissions.

What are the critical components of a mandatory approach? First, we believe that the immediate goal should be to put in place a policy architecture or framework that can last many years and be adjusted as we learn more about the evolving science, economic impacts, technological developments, and actions of other nations. We must get started with a clear signal to investors, consumers, and other nations.

Second, a climate change program should be market-based and economy-wide. We are convinced that market-based approaches, like the landmark Acid Rain Program, are the most effective way to marshal the least cost emissions-reduction options and create powerful technology incentives. And although the focus of today's hearing is the power sector, we believe that a climate program should cover the entire economy. CO2 emissions arise from fossil-fuel consumption throughout the economy; hence only an economy-wide program can deliver maximum emission reductions at the lowest possible cost. The Commission believes that the most efficient way to implement an economy-wide program is to make the point of regulation upstream (i.e., with fuel producers or processors).

Third, we continue to believe that cost certainty is critical to forging the political consensus needed to move forward without further delay. Debates about economic impact usually bog down in fruitless disagreements over whose economic model uses the right assumptions about technology change, fuel prices, and other factors. Different assumptions can produce wildly different estimates of the costs of reducing emissions. The safety valve feature in our proposal—which would make additional emissions allowances available for purchase from the government at a predetermined, but steadily

escalating price—helps to cut through that debate by assuring that the per-ton cost of emissions reductions required under the program cannot rise above a known level

The Commission recognizes that the "safety-valve" feature is highly controversial because it favors cost certainty over emissions certainty. But we continue to feel this trade-off is justified in the interests of overcoming political gridlock and allaying the legitimate competitiveness concerns of U.S. workers and industry. At the same time, the Commission recognizes that the need for environmental certainty is likely to outweigh the need for cost certainty at some point in the future. Indeed, once there is greater international consensus about the policy commitments needed to address climate change it will likely be appropriate to transition away from the safety valve toward firm emission caps. Meanwhile, we are also aware that other legislative proposals provide alternative cost-containment mechanisms and welcome further debate and analysis to determine which approach best addresses the cost concerns that might otherwise stand in the way of timely action..

Fourth, the Commission believes that any successful national policy must place considerable emphasis on promoting wider international cooperation. By some accounts, China is now adding new coal capacity at the rate of one large power plant every week to ten days and is set to surpass the United States in total carbon emissions in the next year or two.[5] We continue to believe that the United States should lead and that once the United States takes action, it is imperative that our major trade partners and other large emitters follow suit. We have therefore proposed that the United States (a) review its policy every five years in light of international and scientific developments, (b) explicitly link continued tightening of program goals and escalation of the safety valve to progress in other countries, and (c) signal its intent to work with other countries to forcefully address trade and competitiveness concerns if other major emitting nations fail to act within a reasonable timeframe.

[5] See http://select.nytimes.com/search/restricted/article?res=F50B12F83A5B0C748CDDA80994DE404482

Fifth, the Commission believes that market-based efforts to limit greenhouse gas emissions must be accompanied by a major technology push to develop and deploy the low-carbon alternatives that will allow us to meet our environmental objectives while maintaining secure, reliable, and affordable means of meeting our energy needs. We strongly believe that a combined strategy of market signals and robust technology incentives is the most effective and least costly way to achieve a meaningful shift from business-as-usual trends, while equitably sharing the burden of emissions mitigation among shareholders and taxpayers. Our approach therefore calls for a complementary package of policies and public incentives to accelerate the development and early deployment of promising energy-efficiency and low-carbon-supply technologies. Incentives would be funded from revenues generated by an auction of emission allowances, thus avoiding additional burdens on the federal Treasury. I will elaborate on this point later in my testimony.

Finally, the Commission continues to believe that solutions to climate change must be pursued in concert with other critical energy policy objectives such as improving America's energy security, reducing oil dependence, and ensuring that the nation's energy systems are adequate and reliable to meet future needs. Thus, our recommendations in 2004 and again in 2007 called for concerted efforts to improve vehicle fuel economy; promote cost-effective energy efficiency investments; develop promising renewable energy resources, including biofuels; diversify available supplies of conventional fuels, especially natural gas, in an environmentally responsible manner; address obstacles to nuclear power; develop the technologies needed to preserve a major role for coal, especially technologies for carbon capture and storage; and invest in critical energy infrastructure.

Allowance Allocation

As I have already noted, the question of how government distributes allowances at the outset of an emissions trading program is likely to emerge as one of the most important and contentious issues in developing viable legislation. It is contentious precisely because allowances represent a valuable financial asset—one that could be

worth, in aggregate, tens of billions of dollars under an economy-wide greenhouse gas trading program. How that asset gets divvied up obviously matters enormously to the many stakeholders in this debate.

In past emissions trading programs, notably the U.S. Acid Rain Program and more recently, the European Union Emission Trading Scheme, the great majority of allowances has been distributed for free to the entities that appeared most directly affected by regulation (this happened to be electric power generators in the Acid Rain Program and both power plants and other large industrial emitters in the European program.). The Commission has concluded, however, that these precedents do NOT provide a good model for allocating allowances under an economy-wide U.S. greenhouse gas trading program. Rather we recommend that roughly half of the total pool of available allowances be distributed for free to industry in the early years of program implementation, while reserving the remaining half of the allowance pool to be directed for public purposes. Over time, we believe the share of allowances distributed for free should diminish gradually and in a predictable manner in favor of a more complete auction that would make additional resources available for more productive and widely-shared societal investments.

Economic analyses conducted by the Commission to explore the distribution of costs under its original program proposal suggest that this approach will provide adequate allowances to compensate major energy-related industries (including suppliers of primary fuels, the electric power sector, and energy-intensive manufacturers) for any short-term economic dislocations incurred in the transition to a lower-carbon economy. At the same time, it will reduce the potential for large windfall profits and generate substantial public resources to assist low-income consumers and to invest in low-carbon technologies and end-use efficiency.

The rationale for this approach is detailed in a recent White Paper on allowance allocation developed by Commission staff. The White Paper develops a number of crucial points that are important for understanding how allowance allocation does and

does not affect the way an emissions trading program works. Indeed, it is worth repeating some of the key conclusions from that report's Executive Summary here:

(1) Allocation affects the *distribution* of benefits and burdens among firms and industry sectors—it does <u>not</u> change program results or overall costs.
Under a trading program, using an allowance is always costly—even for a firm that got the allowance for free—because it means giving up an asset that could otherwise be sold in the marketplace. Thus the incentive to reduce emissions is the same for all firms, regardless of allocation. Since allowances have real monetary value, they can be used to compensate firms or consumers without changing how different entities respond to the policy or what measures are taken to reduce emissions going forward.

(2) The sum value of allowances is <u>not</u> a measure of the program's cost to society.
The market value of allowances in circulation will far exceed the costs incurred by society to actually reduce emissions. This is simply because the number of tons being reduced or avoided is much smaller than the number of tons for which allowances are issued. Trade in allowances generates costs for allowance buyers, but equal and offsetting gains for allowance sellers. It does not represent a cost to society.

(3) The economic burden imposed on a particular firm or industry sector under a greenhouse gas trading program is <u>not</u> a direct function of its emissions or fossil-fuel throughput. Rather, the burden depends on ability to pass through costs, available emission reduction opportunities, and other factors. Available analyses suggest that consumers and businesses at the end of the energy supply chain will bear the largest share of costs under a trading program, while primary producers or suppliers of fossil fuels (oil, coal, and natural gas) will bear a smaller share. Certain firms or industries, however, may encounter more difficulty than others in passing through costs and may bear a disproportionate burden as a result.

(4) Because they do not bear most of the cost, allocating most allowances for free to energy producers creates the potential for large windfall profits. Economic analysis suggests that energy companies can and will pass most program costs through to consumers and businesses at the end of the energy supply chain. Allocating a large share of free allowances to these firms would likely result in windfall profits. This occurred under the EU trading program and caused considerable political outcry.

(5) Allocation provides an opportunity to advance equity and other broad societal interests without diminishing the price signal necessary to elicit cost-effective, economy-wide emissions reductions. A trading program works by creating market incentives—effectively attaching a price to every ton of carbon emitted. Giving away allowances won't shield firms or consumers from this price signal (indeed, this would not even be desirable since the program will generate efficient outcomes only if all parties face the same incentive to reduce emissions). But allowances <u>can</u> be used for a variety of productive purposes: to compensate those who bear a disproportionate burden under the policy, to advance other public policy objectives (such as supporting energy R&D), or to

provide broad societal benefits (for example, making it possible to cut taxes on income or investment).

Several important implications flow from these conclusions. One is that—because cost burdens vary across different sectors and industries—there should be no presumption that different sectors are entitled to equal shares of allowances, either in absolute terms or as a fraction of their emissions or fuel use. Thus, the recommendation that 50 percent of the total allowance pool be distributed for free to affected industry should not be misconstrued to imply that every sector is entitled to 50 percent of its emissions obligation in free allowances. Rather, an allocation guided by equity considerations would award some sectors significantly more than 50 percent because they face substantial un-recovered costs, while it would award other sectors that could pass through the great majority of their costs significantly less than 50 percent.

A second very important finding in the NCEP staff White Paper is that *intra*-sector allocation—that is, deciding how allowances should be distributed to individual firms from within the share dedicated to a particular sector under the broader allocation—may be as difficult and contentious in some cases as *inter*-sector allocation. A particular challenge for policy-makers in this regard—and one that merits careful consideration—is allocation within the electric power sector. Equity considerations in this case are complicated by the various regulatory structures that govern the electric industry in different states and regions. One concern is that program costs would be largely passed through to customers in competitive retail markets (allowing generators to "keep" most of the asset value of a free allocation), while companies operating in regulated markets could be required by regulators to use free allowances to offset price impacts to consumers. Since retail markets in the most coal-intensive regions tend to be regulated, this creates the potential for a perverse outcome in which consumers that rely on a more carbon-intensive generation mix see a weaker price signal than consumers that rely on a lower-carbon mix.

In response to these concerns, some have proposed allocating directly to electric distribution companies (and providing specific guidance to state regulators about the proper treatment of these allowances), rather than allocating directly to generators. In this way all electric sector allocations would come under the purview of economic regulators—state public utility commissions in the case of investor-owned utilities, and local boards in the case of publicly owned utilities and cooperatives. Proponents argue that these authorities are in the best position to sort out the equity implications of different allocation schemes, direct appropriate levels of compensation to adversely affected firms, and ensure that end-use customers, who bear the largest share of the program costs, receive an equitable share of the asset value associated with free allowances. Others have argued for a hybrid approach that would divide the utility sector's share of direct allowances between generation and distribution companies.

In addition, as mentioned above, allowances can be used to advance other public policy objectives such as providing incentives for carbon capture and storage (CCS). The Commission believes that CCS systems should be provided with deployment incentives that are at least equal to those currently available under EPAct05 for new nuclear power plants and (via the federal production tax credit) for renewable energy resources. In particular, the Commission strongly supports the concept of awarding bonus allowances under a greenhouse-gas trading program for projects with CCS. The financial incentives generated by such provisions could substantially exceed any direct increase in public R&D spending on CCS

In sum, allowance allocation is extremely important and can be complicated. But I don't want to leave the impression that it's too complicated. It is neither possible nor necessary to precisely estimate net cost burdens for different sectors, let alone individual firms. But available economic models do provide a tool for assessing the rough distribution of costs and tailoring allocation decisions accordingly so that the overall result is generally transparent and can be accepted as fair by most parties. The Commission is confident that the initial approach we have proposed—by combining a 50 percent free allocation with a 50 percent auction—strikes a reasonable balance between

the interests of consumers and taxpayers and the legitimate cost concerns of some industry stakeholders. By providing adequate resources to compensate firms that lose under the policy without risking significant windfall profits and while also generating resources to assist in the transition to low-carbon technologies, we believe this approach will help to ensure the success of the overall policy and advance the prospects for reaching political consensus.

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Clearly, important debates on allocation and other important aspects of climate-policy design lie ahead. In closing, I would like to re-iterate that the urgent imperative to act—and to act soon—must not get lost as these debates unfold in the months to come. Getting it right is important. But so is getting started.

Thank you for the opportunity to testify today. We hope that the suggestions we have put forward will be helpful, even as we recognize that ours is not the only approach and that there are many worthwhile ideas that the Committee will consider as it moves forward. The Commission and its staff will be happy to provide whatever assistance we can offer as you continue to engage these issues in the weeks and months ahead.

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