



**Testimony of
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Committee on Oversight and Government Reform**

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Introduction

Chairman Waxman, Ranking Minority Member Davis, and members of this Committee, thank you for inviting me to testify here today. I will start by describing the Bush Administration's approach to climate change science and the steps this Administration has taken to support and advance this important area of scientific research. I will also provide context for documents that form the basis of this Committee's inquiry. Finally, I will address the specific allegations made regarding the integrity of the inter-agency review that was provided for drafts of an Environmental Protection Agency report known as the *Draft Report on the Environment*.

The Administration's Approach to Climate Change Science

The Bush Administration has devoted approximately \$12 billion to advancing world class climate change science since 2001. Even as we solidify our understanding of many aspects of climate change, this funding enables scientists at home and abroad to further their investigation of some of the most pressing and challenging research questions. Their efforts are significantly advancing our understanding of climate change and informing policymaking at the highest levels. Their peer-reviewed research and other scientific information are widely available to, and disseminated among, experts and the public. Our Federal agency websites provide the public access to tens of thousands of pages related to climate change, including advancements in science. These web-available documents are a reflection of the substantial public and professional work, discourse, lectures, and other communications that take place every day of the year on this important subject.

Over the last six years, this Administration has sought the advice and counsel of scientists from thirteen government agencies and departments, from the authoritative, non-partisan National Academies of Sciences, and in developing a strategic plan received comments from scientists from 36 countries, all in an effort to guide Federal climate change science and technology research and policymaking with the best available scientific advice. That advice and counsel has been reflected in comments on draft documents and in final agency policy and budget documents, as well as reports, speeches, and communications materials developed using the interagency policy review process that has been a routine part of executive branch decision-making in both Democratic and Republican Administrations. The Administration will continue to support and elicit such outside advice and counsel, as well as take full advantage of executive branch expertise and viewpoints to guide policy development from the highly accomplished political and career staff whose job it is to coordinate and participate in such processes. These individuals bring an important diversity of professional experience and skills important to policymaking, including the many scientific disciplines related to the mechanics of the climate system, biology, transportation, chemistry, engineering, economics, energy, agriculture, construction, law, accounting, and communications among others.

Over the last six years, this laudable record of ongoing support, publication, and communication of world-class climate change research, has at times been overshadowed because of misunderstandings, and in some cases misrepresentations, about the deliberative processes of developing and communicating policies related to climate science, and its interface with policy, management, and budgeting. The questions this Committee is examining are not new. Most in fact are several years old. Prior Congresses and Members of both parties have looked at them closely in the context of hearings, letter inquiries and oversight. On those past occasions, as now, the Administration worked cooperatively with Congress to address questions about climate change science, policy, and management. I have attached to this testimony copies of representative documents the Administration previously provided to Congress in response to many of the same matters once again being explored by this Committee. See Attachments. See also July 11, 2002 Testimony of J. Connaughton, G. Hubbard, J. Marburger, and J. Mahoney before the Senate Committee on Commerce, Science and Transportation.

Of particular focus today is the interagency review process concerning several Administration climate change documents, and the role played in reviewing those documents by my former chief of staff, Phil Cooney. Questions surfaced nearly two years ago about proposed changes and edits made by Mr. Cooney to those documents. Dr. James Mahoney, a Ph.D. scientist, who served as Assistant Secretary for Oceans and Atmosphere at the Department of Commerce and the top official overseeing the Climate Change Science Program (CCSP), has responded on several occasions to Congressional inquiries on this matter. The most pertinent for our purposes today is the letter Dr. Mahoney sent responding to Sen. James Inhofe's inquiry (R-Okla.) on July 29, 2005.

In that letter, Dr. Mahoney outlined the interagency process that governed review of documents produced for the CCSP. As he stated:

The referenced reports were produced through a customary interagency review process. The thirteen CCSP agencies, CEQ, OMB, and OSTP reviewed the drafts, provided comments, and suggested editorial revisions. The comments and suggested revisions were considered by CCSP scientific staff working under my supervision or by me, and revised drafts were prepared. These drafts were again circulated for final clearance and release. As Director of the CCSP, I have had final authority over the editorial process and the approved content of all CCSP reports disseminated since 2002.

Dr. Mahoney also stated explicitly that he had reviewed the reports and concluded that the content of those reports was scientifically sound. He further noted that changes and edits suggested by Mr. Cooney were both warranted and factually accurate, and that the final reports contained no errors or misstatements of fact:

Mr. Cooney proposed many specific edits, as did others involved in the interagency review process for the two reports [the 10-year Strategic Plan for the CCSP and *Our Changing Planet*, the CCSP's annual report to Congress]. These

proposed edits ranged from corrections of grammatical errors to suggestions for insertions or deletions of text. To the best of my knowledge, the edits proposed by CEQ did not misstate any specific scientific fact, but some of the proposed edits challenged the degree of confidence to be attached to various scientific statements. As is the case for all reports produced through the CCSP interagency process, some of the proposed edits were accepted and others were modified or rejected. In my capacity as CCSP Director, I approved final versions of the drafts. To the best of my knowledge, no errors were contained in the two reports.

Accordingly, as you carry out your oversight of the strong record of U.S. leadership on climate change science, I thought it would helpful to explain in some detail the Administration's record of managing Federal climate science programs, funding those programs, using research from those programs to guide and inform policymaking—all undertaken with integrity and respect for the scientific process. I will also specifically respond to some of the allegations that emerged during your recent hearing on the climate science process and in the January 30, 2007 Memorandum from Chairman Waxman to the members of the Committee ("Chairman's Memo").

Development of the Administration's Climate Change Science Program

The President has requested, and Congress has provided, substantial funding for climate-related science, technology, observations, international assistance and incentive programs – on the order of \$35 billion since 2001. Private sector investment in science, technology and other activities related to climate is also massive, backed up increasingly in recent years by initiatives at the state and local level. Among other things, Federal programs are helping further reduce scientific uncertainties associated with the causes and effects of climate change; promoting the advancement and deployment of cleaner, more energy efficient, lower carbon technologies; encouraging greater use of renewable and alternative fuels; accelerating turnover of older, less efficient technology through an array of tax incentives; and establishing dozens of international climate partnerships with the world's largest greenhouse gas emitters, designed to create markets, reduce pollution, alleviate poverty, and fuel economic growth in developing countries.

Through a comprehensive suite of mandates, incentives, and partnerships, the President's climate change policies are contributing to meaningful progress in reducing the growth of U.S. greenhouse gas emissions, even as our population grows and our economy continues to expand. While the U.S. was behind the curve through much of the 1990s, since 2000 the U.S. is now outperforming many in the industrialized world in tackling emissions. For example, according to the International Energy Agency (IEA), from 2000 to 2004, U.S. emissions of carbon dioxide from fuel combustion grew by 1.7 percent, during a period when our economy expanded by nearly 10 percent. This percentage increase was lower than that achieved by Japan (2.5 percent), Canada (4.0 percent), the original 15 countries of the European Union (EU 15) (5.4 percent), India (13.5 percent) and China (58.9 percent). IEA data also show that the United States reduced its carbon dioxide intensity (emissions per unit of real GDP, kg CO₂ per 2000

US\$) by 7.2 percent between 2000 and 2004, better, for example, than Canada (5.6 percent), Japan (1.4 percent), or the EU 15 (1.1 percent).

President Bush's commitment to addressing the serious challenge of global climate change began in the earliest days of his Administration. In March 2001, the President convened a Cabinet-level working group, including the Departments of Treasury, State, Agriculture, Commerce, Energy, Interior, and the Environmental Protection Agency to conduct a comprehensive review of climate change science and policy. To help guide that review, the White House asked the National Academies of Sciences (NAS) to convene an expert panel of the National Research Council (NRC) to prepare an authoritative report on the state of climate change science. In a letter to Dr. Bruce Alberts, then president of the NAS, two of the President's senior advisors wrote, "The Administration is conducting a review of U.S. policy on climate change. We seek the Academy's assistance in identifying the areas in the science of climate change where there are the greatest certainties and uncertainties. We would also like your views on whether there are any substantive differences between the IPCC report and the IPCC summaries." The committee reviewed 14 questions subsequently developed by the Administration and NAS in the statement of task for the study and determined "they represent important issues in climate change science and could serve as a useful framework for addressing the [request]." The members of the NRC panel comprised a number of the most accomplished and highly respected scientists from diverse scientific fields critical to our understanding of climate change, including Dr. James Hansen of NASA, Dr. Richard Lindzen of MIT, Dr. Ralph Cicerone of the University of California Irvine, and Thomas Karl of NOAA. The NRC provided its report, *Climate Change Science: An Analysis of Some Key Questions* ("NRC Report"), to the President and the public in June, 2001.

After ten weeks of consultation by the President's Cabinet with outside scientists and policy experts, and following receipt of the NRC Report, on June 11, 2001, President Bush announced to the world in a Rose Garden address that global climate change is "an issue that should be important to every nation in every part of our world." Further, the President stated, "The issue of climate change respects no border. Its effects cannot be reined in by an army nor advanced by any ideology. Climate change, with its potential to impact every corner of the world, is an issue that must be addressed by the world." The President reaffirmed the longstanding obligations of the United States under the UN Framework Convention on Climate Change. And he said the United States would "work within the United Nations framework and elsewhere to develop with our friends and allies and nations throughout the world an effective and science-based response to the issue of global warming."

Accompanying the President's June 2001 speech was a 33-page policy book describing the Bush Administration's initial approach for addressing climate change. The book contained many separate quotations or references to the NRC report. It also contained several chapters highlighting in detail current domestic actions, an analysis of the Kyoto Protocol, scientific research priorities, ways to promote and advance technology, and efforts to address climate change on an international level. And the

policy book included the President's directive to his Cabinet-level working group to "press forward and develop innovative approaches to climate change in accordance with several basic principles," including making new U.S. policies consistent with the long-term goal of stabilizing greenhouse gas concentrations in the atmosphere, a goal articulated by the Framework Convention.

During his speech, the President criticized the Kyoto Protocol, which he said was a "fatally flawed" approach to effectively addressing climate change, principally because the treaty exempted some of the world's largest emitters of greenhouse gases from its requirements. At the time, the Energy Information Administration (EIA) projected that annual developing country emissions of carbon dioxide would double between 1990 and 2010—an increase that represented over twice as many tons as all of the reductions the United States would be required to take under the Kyoto Protocol. (Six years later, the situation is even more pronounced: according to the International Energy Agency, China's emissions alone are projected to exceed those of the U.S. in 2009, and perhaps earlier.) Another major flaw was the severe burden the treaty would have imposed on the U.S. economy. According to a scenario EIA analyzed during the prior Administration, U.S. implementation of the Kyoto Protocol could have reduced U.S. GDP by as much as four percent.

Long before the President's expression of opposition to the Kyoto Protocol, the U.S. Senate voted 95 to 0 in 1997 to approve the Byrd-Hagel resolution. That resolution stated that the United States would not be a signatory to any international climate change treaty that exempted developing country parties (e.g. China, India, South Korea, and Mexico) from the treaty's mandates or that would result in serious harm to the U.S. economy. Because the Kyoto Protocol failed the Byrd-Hagel test, in its remaining three years, the prior Administration never submitted the treaty to the Senate for ratification. As then Vice President Al Gore stated the day Kyoto was finalized, "As we said from the very beginning, we will not submit this agreement for ratification until key developing nations participate in this effort" (<http://www.cnn.com/ALLPOLITICS/1997/12/11/kyoto/>). Had the U.S. ratified Kyoto, it is likely that not only would many energy-intensive U.S. jobs have been lost to other countries that were exempt from the treaty, but the emissions associated with those jobs would have gone overseas too – undermining any claim to producing an actual reduction in emissions. Nevertheless, the President's well-founded opposition to the Kyoto Protocol triggered an avalanche of misinformation about his Administration's climate policies, which continues to this day.

The rejection of Kyoto represented the beginning, not the end, of the Bush Administration's aggressive action in dealing with global climate change. As the President stated in his June 2001 speech, "America's unwillingness to embrace a flawed treaty should not be read by our friends and allies as any abdication of responsibility. To the contrary, my administration is committed to a leadership role on the issue of climate change. We recognize our responsibility and will meet it—at home, in our hemisphere, and in the world."

As noted above, the President based his climate policy on several principles. In addition to reaffirming U.S. obligations under the Framework Convention, he called for policies that are “measured as we learn more from science and build on it; flexible to adjust to new information and take advantage of new technology; balanced to ensure continued economic growth and prosperity; based on market-based incentives to spur technological innovation; and based on global participation, including developing countries.” According to these principles, the President articulated an overarching philosophical framework to guide climate change policy formation. “The policy challenge is to act in a serious and sensible way, given the limits of our knowledge,” he said. “While scientific uncertainties remain, we can begin now to address the factors that contribute to climate change.”

The President articulated his new policy on February 14, 2002, in a major address that reaffirmed the U.S. commitment to the Framework Convention “and its central goal, to stabilize atmospheric greenhouse gas concentrations at a level that will prevent dangerous human interference with the climate.” To meet this objective, the President set a specific near-term goal “to reduce America's greenhouse gas emissions relative to the size of our economy,” and called for cutting U.S. greenhouse gas intensity by 18 percent by 2012. This goal was designed to “set America on a path to slow the growth of greenhouse gas emissions and, as science justifies, to stop and then reverse the growth of emissions.” This ambitious but achievable commitment represented a nearly 30 percent improvement in the projected rate of improvement in emissions intensity at the time (14 percent).

To achieve this goal, the President urged policymakers in his Administration “to move forward on many fronts, looking at every sector of our economy. We will challenge American businesses to further reduce emissions...We will build on these successes with new agreements and greater reductions.” The result was a policy that was appropriately wide-ranging, focusing on, among many other things, billions of dollars in tax incentives for more renewable energy, more efficient energy systems and highly fuel efficient vehicles; creating the highly successful partnerships with industry such as the Climate Leaders and Climate VISION programs; funding to support hydrogen-powered vehicles and fuel cells; promoting advanced coal technology and carbon sequestration; greenhouse gas abatement resulting from new and reformed mandates on Corporate Average Fuel Economy; biological sequestration resulting from a multi-billion dollar increase in farm-bill conservation programs; enhancing the voluntary climate reporting registry under 1605 (b) of the 1992 Energy Policy Act, and promoting and expanding international climate partnerships including tropical forest conservation. Many of these initiatives were summarized in a policy book released the same day. In my testimony before this Committee last summer, I discussed these initiatives and many more that were added since 2002.

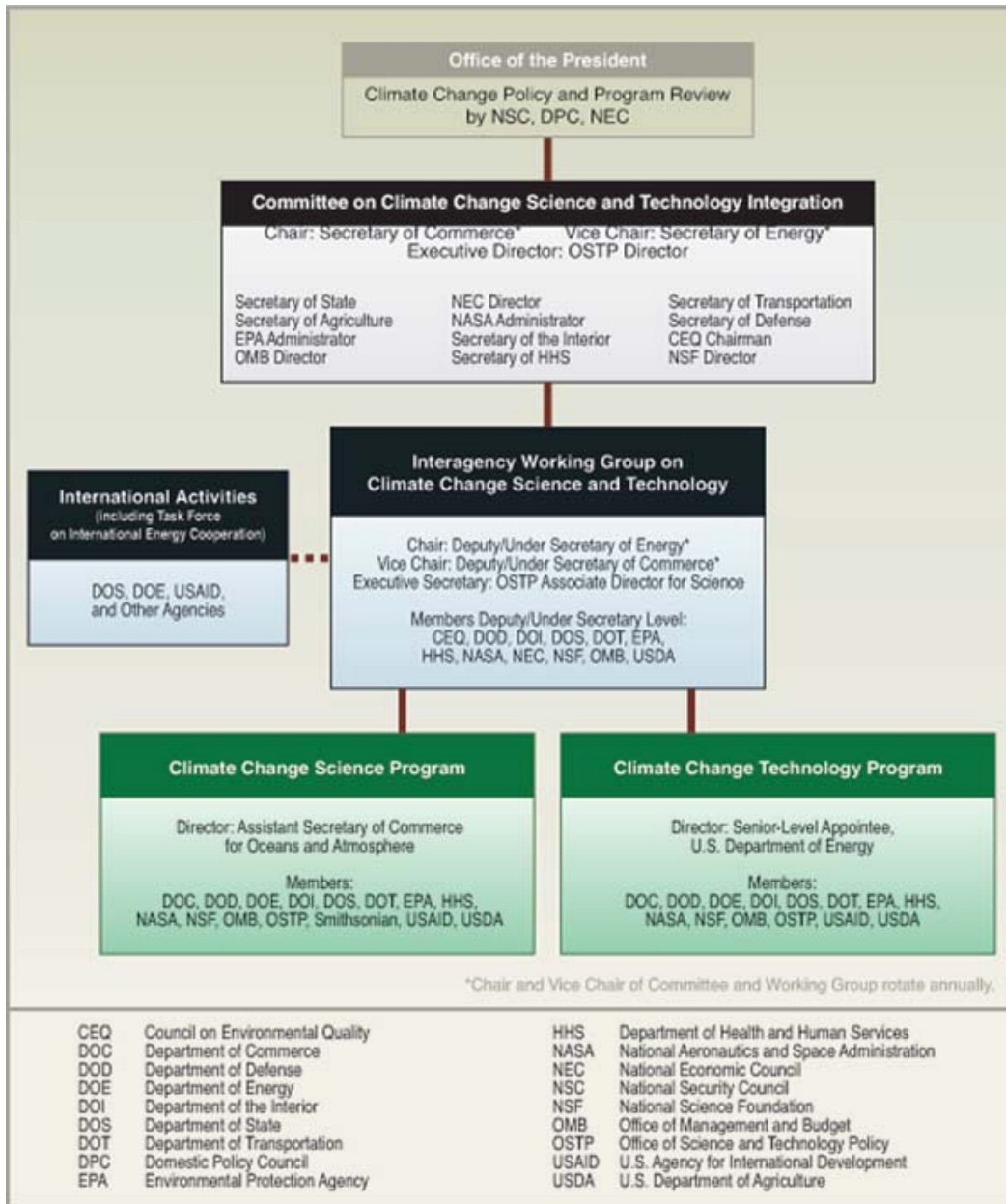
Supporting and Advancing Science

A key component of this policy was to strengthen Federal climate change science programs. Here, too, the President endeavored to follow the advice and recommendations of the NRC. In 1999, the NRC had informed the prior Administration that interagency management of the United States Global Climate Research Program (USGCRP), which was the principal program overseeing management of Federal climate research, had deteriorated in the 1990s. In *Global Environmental Change: Research Pathways for the Next Decade*, the NRC reaffirmed “the achievements and significance of the USGCRP,” but urged that “the Program must now be revitalized, focusing its use of funds more effectively on the principal unanswered scientific questions about global environmental change” (*Id.* at pages 1-2).

In its 2001 report to President Bush, the NRC panel he commissioned restated its concerns about past management of the USGCRP: “A number of NRC reports have concluded that [the USGCRP] is hampered organizationally in its ability to address the major climate problems” (*Climate Change Science: An Analysis of Some Key Questions*, NRC 2001, at page 24 [citations omitted]). The NRC called for a significant reorganization “to ensure that U.S. efforts in climate research are supported and managed so as to ensure innovation, effectiveness and efficiency.” To ensure that climate change policies were being informed by the highest caliber science, and that science was not being inhibited by bureaucracy, the President initiated several management improvements to Federal climate change science programs.

In 2001, the President created the Climate Change Research Initiative (CCRI), which focused on near-term research priorities, including advancing understanding of aerosols, carbon sources and sinks, and climate modeling. The CCRI builds on the USGCRP, with a focus on accelerating progress of the most important issues and uncertainties in climate science, enhancing climate observation systems, and improving the integration of scientific knowledge into policy and management decisions and evaluation of management strategies and choices.

In February 2002, the President established the Climate Change Science Program (CCSP) as a collaborative interagency program, operating under a new cabinet-level management organization. That organization is the Committee on Climate Change Science and Technology Integration (CCSTI), which was designed to improve government-wide management of climate science and climate-related technology research and development. The CCSTI oversees the Federal climate change science and technology programs, which between 2003 and 2006 received combined funding of approximately \$5 billion annually. The management structure places accountability and leadership for the science and technology programs at the highest level in each of the relevant cabinet departments and agencies. Ongoing research continues to be coordinated through the National Science and Technology Council in accordance with the Global Change Research Act of 1990.



The CCSP combines the near-term focus of the CCRI with the breadth of the long-term research elements of the USGCRP. The CCSP Interagency Committee, comprising the Federal government’s most senior science managers, provides overall management direction and is responsible for ensuring the development and implementation of an integrated interagency research program. It oversees the program, including setting top-level goals for the program and determining what products will be developed and produced to meet those goals. The CCSP also coordinates with the Climate Change Technology Program (CCTP) to address issues at the intersection of science and technology.

In July 2002, in order to advance the priority research recommendations he received from the NRC, the President directed the CCSP to prepare a 10-year strategic

plan, a first for the program. At every turn, the Administration's process for developing the strategic plan was open, transparent, and included a plethora of views from across the Federal government and the global scientific community. Just four months later, in November 2002, the Administration released a *CCSP Discussion Draft Strategic Plan* for public review, followed a month later by a Climate Change Science Program Workshop, in Washington, D.C., which facilitated extensive discussion and comments on the draft plan. About 1,300 scientists and other participants attended the session, including individuals from 47 states and 36 nations.

Written comments on the *Discussion Draft Strategic Plan* were submitted during a public review period ending in January 2003. The CCSP received comments from hundreds of scientists, interest groups, and other members of the public. In addition, the Administration asked a special committee of the NRC to review the discussion draft plan and reported its detailed recommendations in February 2003. The final *Strategic Plan for the U.S. Climate Change Science Program* was released in July 2003 after consideration of all of the workshop discussions, the full range of written public review comments, and the NRC review of the discussion draft plan, as well as an extensive internal U.S. Government review process. The final product was submitted once more to the NRC for review prior to publication.

In 2004, the NRC praised the Strategic Plan, writing that it “articulates a guiding vision, is appropriately ambitious, and is broad in scope....Advancing science on all fronts identified by the program will be of vital importance to the nation.” *Implementing Climate and Global Change Research: A Review of the Final U.S. Climate Change Science Program Strategic Plan*, NRC, 2004, p. 1. The *Strategic Plan* is now guiding research activities sponsored or conducted by the U.S. Government and serves as an important point of reference for activities undertaken in other countries. It will be modified as warranted by the emergence of key findings and important new scientific questions of public interest.

Supported by this Administration's efforts, scientists around the world are continuing to improve their grasp of the causes and impacts of climate change, as well as effective strategies for mitigating and adapting to it. In fact, important science used in the recently announced Fourth Assessment Report by the United Nations Intergovernmental Panel on Climate Change was produced by U.S. scientists funded by the Federal government budgets. A portion of this work recently was synthesized in a process co-chaired by Dr. Susan Solomon, an internationally renowned U.S. scientist working at the National Oceanic and Atmospheric Administration.

Context for the Oversight and Government Reform Committee's Inquiry to Date

As questions over the process of describing science-related information in policy, budget, and communication materials are examined by the Oversight and Government Reform Committee, it is important to have a complete understanding of what the NRC report actually said in 2001 and how the President and his Administration responded.

As noted earlier, in March of 2001, the President commissioned the NRC to conduct a comprehensive survey of the latest climate science. “When we make decisions,” the President said, “we want to make sure we do so on sound science; not what sounds good, but what is real.” This study was instrumental in guiding the Administration’s climate policy formation, and it continues to serve as an important point of reference for climate change research.

In his June 2001 Rose Garden address, the President accepted the NRC report and summarized its basic findings. He began with the fact that the earth is warming and that greenhouse gas emissions from human activities contribute:

First, we know the surface temperature of the earth is warming. It has risen by .6 degrees Celsius over the past 100 years. There was a warming trend from the 1890s to the 1940s. Cooling from the 1940s to the 1970s. And then sharply rising temperatures from the 1970s to today. . . . Concentration of greenhouse gases, especially CO₂, has increased substantially since the beginning of the industrial revolution. And the National Academy of Sciences indicates that the increase is due in large part to human activity.

See, e.g., NRC Report, p. 1-3

In the next passage of his speech, the President also recounted key questions on the effects of climate change identified by the NRC that warranted further scientific study:

Yet, the Academy's report tells us that we do not know how much effect natural fluctuations in climate may have had on warming. We do not know how much our climate could, or will change in the future. We do not know how fast change will occur, or even how some of our actions could impact it.

For example, our useful efforts to reduce sulfur emissions may have actually increased warming, because sulfate particles reflect sunlight, bouncing it back into space. And finally, no one can say with any certainty what constitutes a dangerous level of warming, and therefore what level must be avoided.

See, e.g., NRC Report, p. 2, 20-21

Based on the NRC findings, the President determined the following: “The policy challenge is to act in a serious and sensible way, given the limits of our knowledge. While scientific uncertainties remain, we can begin now to address the factors that contribute to climate change.” Since that time, the President and senior Administration officials have publicly reiterated the basic points that: (1) the earth is warming, (2) human activities are contributing, and (3) we must focus on sensible efforts to advance research and investment in the technologies that provide the solution.

These passages in the President’s speech drew directly from findings that the NRC panel reported to him in 2001. For example:

Greenhouse gases are accumulating in Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise. Temperatures are, in fact, rising. The changes observed over the last several decades are likely mostly due to human activities, but we cannot rule out that some significant part of these changes is also a reflection of natural variability.

NRC Report, p. 1

At the time, many commentators zeroed in on the NRC panel “consensus” with respect to the first part about the probability of a human contribution to climate change, without also referencing or taking into account the equally apparent “consensus” on the second component concerning the probability of natural variability. For whatever reason, debates (mainly among non-scientists) about where the “consensus” lies in climate science center on what essentially is an abstraction: whether the science of climate change is unequivocal. But typical of most scientific articles and reports, the NRC report was more thoughtful than that, reflecting both general “consensus” about what is known as well as general “consensus” about what remains to be known -- agreement that some aspects of the science seem settled and that some are not yet settled.

For example, the NRC cautioned against relying on estimates of future warming because of uncertainty about the role of natural variability in the climate system: “Because there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases and aerosols, current estimates of the magnitude of future warming should be regarded as tentative and subject to future adjustments (either upward or downward).” *Id.* at p. 1. Later in the document, the NRC observed: “Because of the large and still uncertain level of natural variability inherent in the climate record and the uncertainties in the time histories of various forcing agents (and particularly aerosols), a causal linkage between the buildup of greenhouse gases in the atmosphere and the observed climate changes in the 20th century cannot be unequivocally established.” *Id.* at p. 17.

In addition, the NRC report specifically discussed the variability in the warming trend in relation to the Northern Hemisphere and potential natural and human influences on that variability: “[T]he rate of warming has not been uniform over the 20th century. Most of it occurred prior to 1940 and during the past few decades. The Northern Hemisphere as a whole experienced a slight cooling from 1946-75, and the cooling during that period was quite marked over the eastern United States.” *Id.* at p. 16. The NRC stated that the “cause of this hiatus in the warming is still under debate” and described three possible explanations: the buildup of sulfate aerosols due to the widespread burning of high sulfur coal during the middle of the century; natural origin attributed to “a remote response to changes in the oceanic circulation at subarctic latitudes in the Atlantic sector, as evidenced by the large local temperature trends over this region”; and variations in solar luminosity or the frequency of major volcanic emissions. *Id.* at p. 16.

The 2001 NRC report further described a number of critical areas of inquiry requiring further study by the research community, including how much carbon is sequestered by oceans and terrestrial sinks and how much remains in the atmosphere, *id.* at p. 11, 13, 18; feedbacks in the climate system that determine the magnitude and rate of temperature increases, *id.* at p. 1, 4; details and impacts of regional climate change resulting from global climate change, *id.* at pages 16, 19, 20; the nature and causes of the natural variability of climate and its interactions with forced changes, *id.* at p. 14, 17; and the future usage of fossil fuels and the future emissions of methane, *id.* at p. 11, 13.

The content and length of the NRC discussion of these topic undercuts any argument that these areas of uncertainty were of limited significance and value in the overall scheme of their report and subsequent policy development and budgeting. These lines of inquiry clearly were important to the identification of priority areas of research funding. Consider the inverse: if all aspects of climate science are settled, why are we spending nearly \$2 billion annually to do more? Further, the discussion of uncertainties also provided helpful context for the report's central conclusions about the scientific importance of climate change and its anthropogenic component. The NRC apparently thought such context was important enough to dedicate several pages of discussion to such context in its 2001 report to the President for consideration when formulating policy. In such an instance, it is reasonable and important to reflect those additional perspectives in subsequent agency documents or other materials summarizing or describing climate science, even if only with a few sentences or phrases. Indeed, omission of any reference to such questions would be the more questionable choice.

Interagency Review Process on the “Report on the Environment”

With this context in mind, the following points respond to specific allegations raised at this Committee's January 30, 2007 hearing. These points correct unfortunate inaccuracies and misconceptions and seek to clarify why certain edits were made to the documents committee staff reviewed.

The central contention from the Chairman's Memo, p. 4, is: “There are many examples in the documents of edits requested by the White House that seem to minimize the impacts of climate change or inject unjustified doubt into the issue.” The implication is that officials acted “in ways that impeded public understanding of the threat of climate change.” *Id.* at p. 7. The Chairman's Memo primarily focuses on comments from both career and non-career officials participating in the interagency process of reviewing drafts of the *Draft Report on the Environment* produced by the Environmental Protection Agency (EPA) in 2003 in consultation with the Council on Environmental Quality and many other Federal agencies and offices within the Executive Office of the President. According to Chairman's Memo, a preliminary draft of this draft report “contained a discussion of the dangers global warming posed for human health and the environment,” *id.* at p. 3, and that “White House and agency officials repeatedly pushed to undermine EPA's scientific conclusions about global warming.” *Id.* The Chairman's Memo states that the “release of EPA's conclusions would have put the Administration on record as

recognizing the prevailing scientific consensus on global warming. This would have been a significant milestone in the public debate about global warming” *Id.*

First, as described in detail above, that milestone had already been reached with the NRC’s Report in 2001, the President’s acceptance of that report, and the subsequent Presidential speeches in 2001 and early 2002 on this subject. Second, the draft climate section of the draft report was not intended as a statement of “EPA’s scientific conclusions about global warming.” Indeed, the main document dealt with a myriad of environmental topics other than climate. From the outset, the EPA draft discussion of climate change was limited to a few pages. Third, to the extent there was editorial disagreement among a number of the reviewers over the climate change passage in the draft report, it was rendered moot by the EPA Administrator’s overarching decision to replace what was proving to be a too compressed discussion with a direct reference to two substantial Federal government publications specifically dedicated to the subject of climate change, one of which had recently been published and the other soon to be published. Based on the Administrator’s decision, reached in consultation with me, the final text provides links to pages of discussion of climate change:

The issue of global climate change involves changes in the radiative balance of the Earth—the balance between energy received from the sun and emitted from Earth. This report does not attempt to address the complexities of this issue. For information on the \$1.7 billion annual U.S. Global Climate Research Program and Climate Change Research Initiative, please find *Our Changing Planet: The Fiscal Year 2003 U.S. Global Climate Research Program* (November 2002) at <http://www.usgcrp.gov> and the *Draft Ten-Year Strategic Plan for the Climate Change Science Program* at <http://www.climatescience.gov>.

Draft Report on the Environment, p. 26.

The Chairman’s Memo is replete with assertions that certain edits were made. In fact, none of those suggested were incorporated into the final published document. Far from “impeding” public understanding, the final document pointed the public to two substantial government volumes that most certainly would help to expand it. These two documents, which represented the science, budget and policy input of all the major Federal agencies involved in this issue, including EPA, further reinforced the “milestone” of recognition of prevailing climate change science, established in the President’s June 2001 statement.

With respect, then, to the purely intramural editorial exchange over the *Draft Report on the Environment*, as a general matter, the edits identified in the Chairman’s Memo had a reasonable foundation and were well within the range of reasonable differences of opinion that might be expected in any internal document review process, especially on a matter of this complexity. Moreover, these edits were part of the well-established, time honored interagency review process, in which multiple offices and agencies, including policy and career staff in the Executive Office of the President, provide comments on policy and documents prepared for public release, a process that

includes oversight and approval by senior government scientists of material addressing scientific issues when needed.

Most of the editorial recommendations identified in the Chairman's Memo closely reflected views contained in the 2001 report from the NRC—one of the most authoritative scientific bodies in the world. The Chairman's Memo does not examine whether there was underlying validity to any of the comments before taking issue with them.

For example, the Chairman's Memo questions comments from the Office of Management and Budget that the draft EPA report "needs balance. Global climate change has beneficial effects as well as impacts." This point reasonably reflects information that the NRC included in its 2001 NRC report to the President: "In the near term, agriculture and forestry are likely to benefit from CO₂ fertilization effects and the increased water efficiency of many plants at higher atmospheric CO₂ concentrations." NRC Report, p. 19. The NRC further wrote that "many crop distributions will change, thus requiring significant regional adaptations," and that, "[g]iven their resource base, the [National] Assessment concludes that such changes will be costlier for small farmers than for large corporate farms. However, the combination of the geographic and climatic breadth of the United States, possibly augmented by advances in genetics, increases the nation's robustness to climate change." *Id.* at p. 19.

The Chairman's Memo also takes issue with comments from the White House Office of Science and Technology Policy (OSTP), which "urged deletion of a discussion of the human health and ecological effects of climate change." Yet, here too, OSTP's recommendation of deletion reasonably conformed to the NRC Report:

Health outcomes in response to climate change are the subject of intense debate. . . . Much of the United States appears to be protected against many different adverse health outcomes related to climate change by a strong public health system, relatively high levels of public awareness, and a high standard of living. Children, the elderly, and the poor are considered to be the most vulnerable to adverse health outcomes. The understanding of the relationships between weather/climate and human health is in its infancy and therefore the health consequences of climate change are poorly understood. The costs, benefits, and availability of resources for adaptation are also uncertain.

Id. at p. 20. Particularly in this instance, it seems strange that the Chairman's Memo is taking significant issue with scientists from the President's science office offering comments on expressions of science. Moreover, it was particularly appropriate for scientists from the President's science office to offer comments on a science matter.

The Chairman's Memo cites Department of Energy comments recommending deletion of a discussion of atmospheric carbon concentrations, arguing that it was not a "good indicator of climate change." This is a reasonable reflection of the NRC report, which observed that no consensus existed on the definition of a "safe" level of

greenhouse gas concentrations: “The potential for significant climate-induced impacts raises the question of whether there exists a ‘safe’ level of greenhouse gas concentration. The word ‘safe’ is ambiguous because it depends on both viewpoint and value judgment.” *Id.* at p. 20. According to the NRC, future climate change will depend on several factors, including the “nature of the climate forcing (e.g., the rate and magnitude of changes in greenhouse gases, aerosols) and the sensitivity of the climate system.” “Therefore,” the NRC concluded, “determination of an acceptable concentration of greenhouse gases depends on the ability to determine the sensitivity of the climate system as well as knowledge of the full range of the other forcing factors, and an assessment of the risks and vulnerabilities.” *Id.* at p. 21.

Regarding another set of edits, the Chairman’s Memo states that OMB recommended deleting text from the draft that climate change may “alter regional patterns of climate” and “potentially affect the balance of radiation.” Chairman’s Memo, p. 4. Here too, the Chairman’s Memo implies that such suggestions were unfounded or politically biased. Yet, in light of the fact that potential regional impacts of climate change were poorly understood, the NRC had recommended making the study of the “details of the regional and local climate change consequent to an overall level of global climate change” a top research priority. NRC Report, p. 23.

The Chairman’s Memo also criticized a recommendation to delete the phrase “changes observed over the last several decades are likely mostly the result of human activities.” The Chairman’s Memo omitted the remainder of the same sentence also recommended for deletion: “but it is not possible to rule out that some significant part of these changes is a reflection of natural variability.” In its place, the commenter suggested alternative language: “A causal linkage between the buildup of greenhouse gases in the atmosphere and the observed climate changes during the 20th century cannot be unequivocally established.” As it happens, all of this alternative language comes verbatim from the NRC report. Replacing one formulation from the NRC report with another similar formulation from the NRC report left the substance of the underlying point—that science cannot attribute all of the recent warming to a single factor—unchanged. At most, the substitution created a change in emphasis, a result on which reasonable minds could differ.

The Chairman’s Memo singles out by name my former chief of staff, Mr. Phillip Cooney, beginning with the assertion that Mr. Cooney was a “former oil industry lobbyist, not a scientist.” At the time of the review process, Mr. Cooney was a dedicated employee of the U.S. Government, representing and serving the interests of the American people, the Executive Branch, and the Council on Environmental Quality. Mr. Cooney had long since left employment with the American Petroleum Institute, where he primarily served as a manager and policy development and project coordinator. Mr. Cooney joined CEQ as a highly skilled attorney with years of experience covering a wide variety of policy areas. And as discussed above, the interagency review process included a diversity of agencies and officials from a variety of professional disciplines. The fact Mr. Cooney was not a scientist is no more remarkable than the fact that innumerable other non-scientists worked alongside scientists in the highly multi-disciplinary realm of

environmental and energy policy, including in the development of documents such as the *Draft Report on the Environment*.

An example of the contributions of other non-scientists can be found in the Committee's last hearing on "political influence on government climate change scientists," the premise of which was that Federal climate change science has been "politicized" because non-scientists made changes to climate change documents. The lead witnesses called by the Committee to provide an authoritative voice in support of this premise was Mr. Rick Piltz, a former Federal official working on some of the same climate change documents with Mr. Cooney. Mr. Piltz is not a scientist, let alone a credentialed expert in climate change science. Yet in his role as a former senior associate in the Climate Change Science Program Office, Mr. Piltz had far more day-to-day involvement and influence than Mr. Cooney, not only in the editing, but also in the authoring of many government reports, documents and other materials involving climate science content. By the logic of the hearing's title, Mr. Piltz himself, as a non-scientist, not only was unqualified to be involved with these documents, but could be accused of "politicizing" them. In my view, not only was Mr. Piltz's editorial role wholly appropriate, it was a necessary and important function of his job. No less for Mr. Cooney. That they might have differed only from time to time on language over a relatively few sentences out of the hundreds (probably thousands) of pages that crossed their desks without any change, objection or disagreement from either of them is a testament to the strengths, not flaws of the interagency review process.

Nevertheless, the Chairman's Memo specifically notes that Mr. Cooney inserted a "claim that satellite data disputes [sic] global warming, and he deleted the statement that 'regional patterns may be altered' by climate change." The assertion that Mr. Cooney's edit on satellite data disputes global warming is mistaken. The original draft of the sentence on satellite data read:

Although warming at the surface has been quite pronounced during the past few decades, satellite measurements indicate that the temperature of the lower to mid troposphere (the atmospheric layer extending from the earth's surface up to about 8 km) has exhibited a smaller rise in temperature.

With Mr. Cooney's changes, the sentence would have read:

Although warming at the surface has been quite pronounced during the past few decades, satellite measurements indicate relatively little warming of air temperature in the troposphere (the atmospheric layer extending from the earth's surface up to about 8 km).

By any objective measure, the fundamental point would not have changed and in no way "disputes global warming." Here again, the language Mr. Cooney recommended was taken nearly verbatim from the NRC Report:

Although warming at Earth's surface has been quite pronounced during the past few decades, satellite measurements beginning in 1979 indicate relatively little warming of air temperature in the troposphere.

NRC Report, p. 17. There is no indication that the NRC intended that statement to dispute global warming.

The Chairman's Memo further suggests that calling attention to the temperature data difference was unwarranted or politically motivated, an assertion wholly at odds with the NRC findings:

The committee concurs with the findings of a recent National Research Council report, which concluded that the observed difference between surface and tropospheric temperature trends during the past 20 years is probably real, as well as its cautionary statement to the effect that temperature trends based on such short periods of record, with arbitrary start and end points, are not necessarily indicative of the long-term behavior of the climate system. The finding that surface and troposphere temperature trends have been as different as observed over intervals as long as a decade or two is difficult to reconcile with our current understanding of the processes that control the vertical distribution of temperature in the atmosphere.

Id. at p. 17.

Importantly, since that time, on the recommendation of the NRC and with the full backing of President Bush's climate policy team and climate research program, significant research was undertaken that substantially reconciled the dichotomy (for information on this, see the first of the peer-reviewed Synthesis and Assessment Products released by the CCSP: *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences*, <http://www.climate-science.gov/library/sap/default.htm>). This advancement in our knowledge was publicly reported in the scientific literature without fanfare or controversy.

Taking another editorial recommendation out of context, the Chairman's Memo states that Mr. Cooney "struck climate change from a discussion of environmental issues that have global consequences." The words "climate change" were deleted from this section because its focus was on the global consequences of ozone depletion, an issue that is related but distinct from climate change. The edit, therefore, made it consistent with the discussion of ozone depletion.

The Chairman's Memo next raises the fact that Mr. Cooney recommended deletion of "a chart depicting historical temperature reconstruction." Yet deleting this chart was reasonably justified considering the concern the 2001 NAS report expressed over the chart's scientific validity and reliability, a concern later more fully investigated by independent researchers and another NRC panel of climate science experts which

reached similar conclusions in 2006. The chart depicted the so-called “hockey stick” graph, which showed relatively stable temperatures over the last 900 years in the Northern Hemisphere, with a sharp increase starting at the beginning of the 20th century to the late 1990s. The implication reached by the authors was that the 1990s were likely the warmest decade over the last 1,000 years. Though the hockey stick graph was featured prominently in the IPCC’s Third Assessment Report, the NRC Report in 2001 questioned its underlying scientific basis:

On the basis of these analyses, [the hockey stick authors] conclude that the 0.6°C (1.1°F) warming of the Northern Hemisphere during the 20th century is likely to have been the largest of any century in the past thousand years. . . . The data become relatively sparse prior to 1600, and are subject to uncertainties related to spatial completeness and interpretation making the results somewhat equivocal, e.g., less than 90% confidence. Achieving greater certainty as to the magnitude of climate variations before that time will require more extensive data and analysis.

NRC Report, p. 16. In 2006, in a study titled *Surface Temperature Reconstructions for the Last 2000 Years* (“NRC Temperature Report”), the NRC re-examined the hockey stick and noted the “debate in the scientific literature” about its validity “continues even as this report goes to press.” The NRC concluded that the central implication presented by the hockey stick was “plausible,” but added a significant caveat:

The substantial uncertainties currently present in the quantitative assessment of large-scale surface temperature changes prior to about A.D. 1600 lower our confidence in this conclusion compared to the high level of confidence we place in the Little Ice Age cooling and 20th century warming. Even less confidence can be placed in the original conclusions by Mann et al. (1999) that ‘the 1990s are likely the warmest decade, and 1998 the warmest year, in at least a millennium’ because the uncertainties inherent in temperature reconstructions for individual years and decades are larger than those for longer time periods, and because not all of the available proxies record temperature information on such short timescales.

NRC Temperature Report, p. 4.

From the written record, it would appear that this proposed deletion was proposed to ensure that the draft report was relying on and presenting the best available science on this particular subject, science that appears to remain in question even today, after rigorous review.

Referring to another document, the Chairman’s Memo, p. 5, claims that Mr. Cooney recommended reference to a peer-reviewed scientific paper by scientists Willie Soon and Sally Baliunas “to rebut the views of the National Academy of Sciences and Intergovernmental Panel on Climate Change and assert that the 20th century is probably not the warmest nor a uniquely extreme climatic period of the last millennium.” Yet, as

discussed above, the NRC in 2001 did not endorse the view that the 1990s were the warmest decade of the last 1,000 years in the Northern Hemisphere.

Moreover, the Chairman's Memo, p. 6, implies that the Soon-Baliunas study was tainted or flawed because it was "funded by the American Petroleum Institute," carrying with it a negative implication about the integrity of the scientists conducting the research. In fact, according to the press release from the Harvard-Smithsonian Center for Atmospheric (<http://cfa-www.harvard.edu/press/pr0310.html>), almost all of the funding came from NOAA, NASA, and the Air Force Office of Scientific Research, with only a small portion of funding coming from API and other organizations. I believe shared funding is a common practice for research of common interest to the public and private sectors. Both Dr. Soon and Dr. Baliunas are distinguished scientists. After receiving a doctorate in astrophysics from Harvard, Dr. Baliunas served as Deputy Director of Mount Wilson Observatory. She has received numerous awards for her work, including the Newton-Lacy-Pierce Prize of the American Astronomical Society and the Bok Prize from Harvard University. She has written over 200 scientific research articles. In 1991, *Discover* magazine profiled her as one of America's outstanding women scientists. Dr. Soon is an astrophysicist at the Solar and Stellar Physics Division with Harvard-Smithsonian Center for Astrophysics.

Moving beyond these allegations, the Committee should also be aware of the fact that Mr. Cooney endeavored throughout his time at CEQ to ensure that we stayed current on emerging climate science. For example, Mr. Cooney was instrumental in hiring an outstanding new CEQ Associate Director with a Ph.D. in Earth System Science from the University of California, Irvine coupled with a strong professional background in energy, climate and technology policy. It was Mr. Cooney who, in 2003, recommended that we invite Dr. James Hansen to the White House complex to brief senior officials in the Executive Office of the President on the most recent and important advances in climate change science. I was pleased to personally host his presentation in CEQ's conference room. Building on that presentation, Mr. Cooney was the driving force behind arranging for me to visit the Scripps Institute in California to meet with atmospheric scientists doing cutting edge work on a number of the priority research areas identified by Dr. Hansen and his colleagues in the NRC Report.

Moreover, precisely because of his professional experience in the energy sector, it was Mr. Cooney who rapidly zeroed in on an extremely useful policy recommendation by Dr. Hansen urging the substantial climate, economic, and clean development benefits of aggressively tackling methane emissions and black soot in the near-term, even as we pursue longer term technology strategies for addressing carbon dioxide emissions on a large scale. Mr. Cooney, working closely with EPA, DOE, State and other agencies, was the driving force in creating the international Methane-to-Markets Partnership, which is dedicated to removing 50 million metric tons of carbon-equivalent emissions from the atmosphere by 2015. Also taking advantage of prior expertise, Mr. Cooney was a critical force in the creation of the Department of Energy's Climate VISION program, a public-private partnership that includes 14 energy-intensive industrial sectors and The Business Roundtable. Each sector has committed to contribute to meeting the President's 18

percent intensity reduction goal by establishing specific goals for improving its energy efficiency or greenhouse gas intensity.

Finally, the Chairman's Memo, p. 6, refers to an email stating that "CEQ Chairman James Connaughton was personally involved in the review of the EPA report." This should not be particularly interesting, let alone surprising. This is my job. As CEQ Chairman, I have an institutional responsibility as the President's environmental advisor and a statutory responsibility under the National Environmental Policy Act (NEPA) to "gather timely and authoritative information concerning the conditions and trends in the quality of the environment both current and prospective." The *Draft Report on the Environment* was just that, a report on conditions and trends in the quality of the environment both current and prospective. This report was no different than countless other reports in which CEQ has played a leading, supporting, oversight or consultative role since the office was established more than 35 years ago. Drawing a negative inference from my direct involvement or indirect oversight of such environmental reports is akin to suggesting something nefarious about the national security advisor being involved in matters of national security, or the President's science advisor being involved in matters of science.

Conclusion

This Administration has an unparalleled record of supporting, funding, and advancing climate change research. It has time and again consulted the world's most prestigious scientific bodies, and scientists from multiple countries, for advice and recommendations before setting research priorities and strategic thinking on long-term climate change research. Based on those recommendations, the Administration has developed a robust architecture in which Federal climate change research occurs openly, transparently, and productively. That research has played an indispensable part in guiding and shaping the Administration's comprehensive climate change policies and research strategies.