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CLIMATE CHANGE

Greater Clarity and Consistency Are Needed in Reporting Federal Climate Change Funding

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Highlights of [GAO-06-1122T](#), testimony before the Committee on Government Reform, House of Representatives

Why GAO Did This Study

The Congress has required annual reports on federal climate change spending. The Office of Management and Budget (OMB) reports funding for: technology (to reduce greenhouse gas emissions), science (to better understand the climate), international assistance (to help developing countries), and tax expenditures (to encourage emissions reduction). The Climate Change Science Program (CCSP), which coordinates many agencies' activities, also reports on science funding.

This testimony is based on GAO's August 2005 report *Climate Change: Federal Reports on Climate Change Should Be Clearer and More Complete* (GAO-05-461). GAO examined federal climate change funding for 1993 through 2004, including (1) how total funding and funding by category changed and whether funding data are comparable over time and (2) how funding by individual agencies changed and whether funding data are comparable over time.

What GAO Recommends

GAO recommended, among other things, that OMB include data on existing climate-related tax expenditures. OMB agreed with most of GAO's recommendations and has implemented several of them. CCSP agreed with all of GAO's recommendations and has begun explaining changes in report format or content when they are introduced.

www.gao.gov/cgi-bin/getrpt?GAO-06-1122T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact John B. Stephenson at (202) 512-3841, or stephensonj@gao.gov.

CLIMATE CHANGE

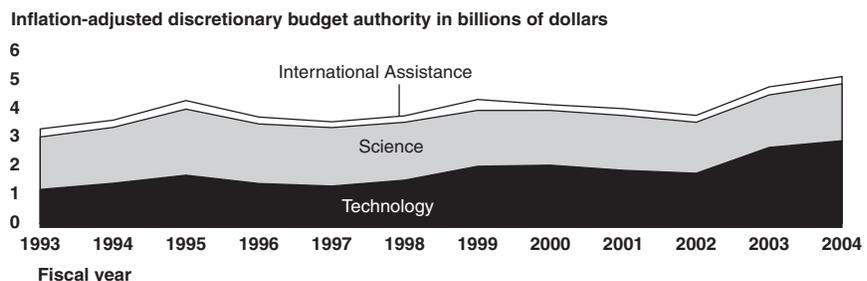
Greater Clarity and Consistency Are Needed in Reporting Federal Climate Change Funding

What GAO Found

According to OMB, from 1993 to 2004, federal funding for climate change increased from \$3.3 billion to \$5.1 billion (55 percent) after adjusting for inflation. During this period, reported inflation-adjusted funding increased for technology and science, but decreased for international assistance. However, it is unclear whether funding changed as much as reported because changes in the format and content of OMB and CCSP reports make it difficult to compare funding data over time. For example, over time, OMB expanded the definitions of some accounts to include more activities, but did not specify how it changed the definitions. OMB officials stated that it is not required to follow a consistent reporting format from year to year. Further, CCSP's science funding reports were difficult to compare over time because CCSP introduced new methods for categorizing funding without explaining how they related to previous methods. The Director of CCSP said that its reports changed as the program evolved. These and other limitations make it difficult to determine actual changes in climate change funding.

Similarly, OMB reported that 12 of the 14 agencies that funded climate change programs in 2004 increased such funding between 1993 and 2004, but unexplained changes in the reports' contents limit the comparability of data on funding by agency. For example, reported funding for the Department of Energy (DOE), the agency with the most reported climate-related funding in 2004, increased from \$1.34 billion to \$2.52 billion (88 percent) after adjusting for inflation. DOE and the National Aeronautics and Space Administration accounted for 81 percent of the reported increase in funding from 1993 through 2004. However, because agency funding totals are composed of individual accounts, changes in the reports' contents, such as the unexplained addition of accounts to the technology category, make it difficult to compare agencies' funding data over time and, therefore, to determine if this is a real or a definitional increase. Furthermore, GAO found that OMB reported funding for certain agencies in some years but not in others, without explanation. OMB told GAO that it relied on agency budget offices to submit accurate data. These data and reporting limitations make determining agencies' actual levels of climate change funding difficult.

Reported Federal Climate Change Funding by Category, 1993-2004



Source: GAO analysis of OMB data.

Mr. Chairman and Members of the Committee:

Increases in the earth's average temperature that have already occurred over the last 100 years, combined with additional future increases projected by a consensus of scientists, have the potential to dramatically change life on earth. For example, changes in the frequency and intensity of rainfall, both possible effects of climate change, could affect agriculture and forest health in certain locations. Effects on planetary biodiversity are projected to be even more pronounced. For more than a decade, the federal government has funded programs to study the earth's climate and to reduce emissions of carbon dioxide and other greenhouse gases linked to climate change. According to the Office of Management and Budget (OMB), 9 of the 15 cabinet-level executive departments, along with 5 other federal agencies, received funding for climate change activities in 2004.

In annual reports and testimony before the Congress, OMB reported climate change funding for 1993 through 2004 using the following four categories:

- **Technology**, which includes the research, development, and deployment of technologies and processes to reduce greenhouse gas emissions or increase energy efficiency. Funding for this category focuses on programs for energy conservation, renewable energy, and related efforts.
- **Science**, which includes research and monitoring to better understand climate change, such as measuring changes in forest cover.
- **International assistance**, which helps developing countries to address climate change by, for example, providing funds for energy efficiency programs.
- **Tax expenditures** related to climate change, which are federal income tax provisions that grant preferential tax treatment to encourage emission reductions by, for example, providing tax incentives to promote the use of renewable energy.¹

¹The revenue losses resulting from provisions of federal tax laws may, in effect, be viewed as expenditures channeled through the tax system. The Congressional Budget and Impoundment Control Act of 1974, as amended, requires that the budget include the level of tax expenditures under existing law. Like the annual lists of tax expenditures prepared by the Department of the Treasury, this testimony considers only tax expenditures related to individual and corporate income taxes and does not address excise taxes.

Over the same time period, the administration also reported annually on funding specifically for climate change science, one of the four categories used in OMB reports. The Climate Change Science Program (CCSP)—a multiagency coordinating group—is currently responsible for preparing the climate change science reports, which duplicate to some extent OMB’s science funding reports.

My remarks today are based on our August 2005 report on federal climate change funding from 1993 through 2004² and will focus on (1) how total funding and funding by category changed and the extent to which data on such funding are comparable over time and (2) how funding by agency changed and the extent to which data on such funding are comparable over time. We also examined whether OMB reports on climate change funding provided the data required by the Congress. It is important to note that in April 2006, OMB issued its fiscal year 2007 report to the Congress on federal climate change expenditures and has implemented several of GAO’s August 2005 recommendations in that report. Likewise, in November 2005, CCSP issued its fiscal year 2006 report to the Congress and has also implemented a GAO recommendation in that report. My testimony today addresses only climate change spending and reporting through fiscal year 2004.

To determine how federal climate change funding by category and agency changed, we analyzed data from annual OMB and CCSP reports, as well as congressional testimony. To determine the extent to which the data on climate change funding were comparable, we analyzed and compared the contents of the reports and interviewed responsible officials. To determine whether OMB and CCSP reports provided the data the Congress required, we reviewed the reporting requirements, the legislative history of these requirements, and the data OMB and CCSP presented in their reports. The term “funding” in this testimony reflects discretionary budget authority, or the authority provided in law to incur financial obligations that will result in outlays, as reported by OMB and CCSP in their reports.³ Unless otherwise stated, we report funding in nominal terms (not adjusted for

²U.S. Government Accountability Office, *Climate Change: Federal Reports on Climate Change Funding Should be Clearer and More Complete*. GAO-05-461 (Washington, D.C.: Aug. 25, 2005).

³An OMB official stated that there is no mandatory budget authority for climate change programs.

inflation), and all years refer to fiscal years.⁴ This testimony is based on work that was conducted between July 2004 and August 2005 in accordance with generally accepted government auditing standards.

In summary, federal funding for climate change, as reported by OMB, increased from \$2.35 billion in 1993 to \$5.09 billion in 2004 (116 percent), or from \$3.28 billion to \$5.09 billion (55 percent) after adjusting for inflation. OMB reports show that, during this period, funding increased for technology and science. CCSP, which reports only science funding, generally presented totals that were consistent with OMB's, but provided more detail. However, changes in reporting methods used by both OMB and CCSP limit the comparability of funding data over time, and therefore it was unclear whether total funding actually increased as much as reported. Furthermore, we were unable to compare changes in the fourth category—climate-related tax expenditures—because OMB reported estimates for proposed but not existing tax expenditures from 1993 to 2004. Specifically, for 1993 through 2004:

- **Technology** funding, as reported by OMB, increased from \$845 million to \$2.87 billion (239 percent), or from \$1.18 billion to \$2.87 billion (183 percent) in inflation-adjusted dollars. The share of total climate change funding devoted to technology increased from 36 percent to 56 percent. However, we identified several ways that technology funding presented in OMB's more recent reports may not be comparable to previously reported technology funding. For example, OMB added accounts to the technology category that were not reported before or were presented in different categories, but it did not explain whether these accounts reflected the creation of new programs, or a decision to count existing programs for the first time. OMB also expanded the definitions of some accounts to include more activities without clarifying how the definitions were changed. Furthermore, OMB reports include a wide range of federal climate-related

⁴When we adjusted for inflation, we used a fiscal year price index that we calculated based on a calendar year price index published by the Department of Commerce's Bureau of Economic Analysis. Unless otherwise specified, figures represent actual funding (not estimates), with the exception of 1993, 1994, and 2004, where we present estimated funding reported by CCSP because actual data are not available. For the purposes of this testimony, the term "agency" includes executive departments and agencies, and we use the term "account" to describe the budget accounts, line items, programs, and activities presented in OMB and CCSP reports. Throughout this testimony, we characterize all climate change science reports from 1993 through 2004 as CCSP reports, even though CCSP has been in existence only since 2002, and reports prior to 2002 were published by a predecessor organization. Totals and percentages may not add due to rounding.

programs and activities, some of which—such as scientific research on global environmental change—are explicitly climate change programs, whereas others—such as technology initiatives promoting emissions reduction or encouraging energy conservation—are not solely for climate change purposes.

- **Science** funding increased from \$1.31 billion to \$1.98 billion (51 percent), according to both OMB and CCSP, or from \$1.82 billion to \$1.98 billion (9 percent) in inflation-adjusted dollars. However, its share of total climate change funding decreased from 56 percent to 39 percent. OMB and CCSP generally presented consistent climate change science funding totals from 1993 through 2004. CCSP reports also presented more detailed data, but these data were difficult to compare over the entire period because CCSP periodically introduced new categorization methods without explaining how the new methods related to the ones they replaced. Specifically, over the period CCSP used seven different methods to present detailed science funding data, making it impossible to develop consistent funding trends of the entire timeframe.
- **International assistance** funding reported by OMB increased from \$201 million to \$252 million (25 percent), but decreased from \$280 million to \$252 million (10 percent) in inflation-adjusted dollars. Moreover, its share of total climate change funding decreased from 9 percent to 5 percent. International assistance funding reported by OMB was generally comparable over time, although several new accounts were added without explanation.
- **Tax expenditures** were not fully reported by OMB for any year, even though climate-related tax expenditures amounted to hundreds of millions of dollars in revenue forgone by the federal government in fiscal year 2004. Although not required to do so, OMB reported proposed climate-related tax expenditures. However, OMB did not report revenue loss estimates for existing climate change-related tax expenditures. Whereas OMB reported no funding for existing climate change-related tax expenditures in 2004, the federal budget for that year listed four tax expenditures related to climate change in that year, including estimated revenue losses of \$330 million for incentives to develop certain renewable energy sources.

OMB and CCSP officials told us that time constraints and other factors contributed to changes in report structure and content over time. For example, OMB officials said that the short timeline for completing the report required by the Congress (within 45 days of submitting the upcoming fiscal year's budget for the three most recent reports) limited OMB's ability to analyze data submitted by agencies. They also noted that

they were not directed to use the same report format over time or explain differences in methodology from one report to another. Regarding tax expenditures, OMB officials said that they consistently included in the reports those proposed tax expenditures where a key purpose was specifically to reduce greenhouse gas emissions. They also stated that they had not included existing tax expenditures that may have greenhouse gas benefits but were enacted for other purposes, and that the Congress had not provided any guidance to suggest that additional tax expenditure data should be included in the annual reports. However, in response to a recommendation we made in our 2005 report, OMB in its fiscal year 2007 report to the Congress included existing tax expenditures that could contribute to reducing greenhouse gases. Because of these and other limitations, determining actual changes in federal climate change funding is difficult.

OMB reported that 12 of the 14 agencies receiving funding for climate change programs in 2004 received more funding in that year than they had in 1993, but it is unclear whether funding changed as much as OMB reported because unexplained changes in what was defined as climate change funding. Reported funding for the Department of Energy (DOE), the agency with the most reported climate-related funding in 2004, increased from \$963 million to \$2.52 billion (162 percent), or from \$1.34 billion to \$2.52 billion (88 percent) after adjusting for inflation. DOE and the National Aeronautics and Space Administration (NASA) accounted for 81 percent of the reported increase in funding from 1993 through 2004. However, because agency funding totals are composed of individual accounts, the changes in the reports' contents discussed earlier, such as the unexplained addition of accounts to the technology category, limit the comparability of agencies' funding data over time, making it difficult to determine if these are real or definitional increases.

We found that OMB reports presented information on budget authority, not—as required by the Congress—on expenditures. The Congress has required that information be provided on expenditures and obligations, the amounts actually spent or committed to be spent, while OMB reports generally have presented information on a different measure, budget authority, or the amount of funding provided by the Congress. OMB officials told us that they adopted their approach because the relevant congressional committees generally use budget authority. They told us that they reported on this basis because these committees have not objected to OMB's approach.

We recommended that OMB and CCSP, from year-to-year, use the same format for presenting data, explain changes in report content or format when they are introduced, and provide and maintain a crosswalk comparing new and old report structures when changes in report format are introduced. We also recommended that OMB include data on existing climate-related tax expenditures in future reports. Finally, we recommended that OMB request that the Congress clarify whether future reports should be presented in terms of expenditures and obligations or in terms of budget authority, and if the Congress prefers the former, OMB should request the necessary time to prepare reports on that basis.

We received oral comments from OMB on August 1, 2005, and written comments from CCSP in a letter dated July 28, 2005. OMB agreed with the recommendations relating to report content and format and said it was studying the other recommendations. CCSP agreed with all of our recommendations.

After our report was issued in August 2005, OMB released its fiscal year 2007 report to Congress on climate change expenditures. Several of our recommendations were implemented in that report. For example, OMB included data on existing climate-related expenditures. OMB also labeled its tables for the major types of funding with respect to fiscal year and budgetary metric (actual budget authority, enacted budget authority, obligations, outlays, and proposed budget authority). CCSP has implemented our recommendation about explaining changes in report content or format.

Background

In 1990, the Congress enacted the Global Change Research Act.⁵ This act, among other things, required the administration to (1) prepare and at least every 3 years revise and submit to the Congress a national global change research plan, including an estimate of federal funding for global change research activities to be conducted under the plan; (2) in each annual budget submission to the Congress, identify the items in each agency's budget that are elements of the United States Global Change Research Program (USGCRP), an interagency long-term climate change science research program; and (3) report annually on climate change

⁵Pub. L. No. 101-606, 104 Stat. 3096 (1990) (partially terminated pursuant to the Federal Reports Elimination and Sunset Act of 1995, Pub. L. No. 104-66, § 3003 (1995)).

“expenditures required” for the USGCRP.⁶ In 1992, the United States signed and ratified the United Nations Framework Convention on Climate Change, which was intended to stabilize the buildup of greenhouse gases in the earth’s atmosphere, but did not impose binding limits on emissions.

In response to the requirements of the 1990 act, the administration reported annually from 1990 through 2004 on funding for climate change science in reports titled *Our Changing Planet*.⁷ From 1990 through 2001, the reports presented detailed science funding data for the USGCRP. Federal climate change science programs were reorganized in 2001 and 2002. In 2001, the Climate Change Research Initiative (CCRI) was created to coordinate short-term climate change research focused on reducing uncertainty, and in 2002, CCSP was created to coordinate and integrate USGCRP and CCRI activities. CCSP is a collaborative interagency program designed to improve the government wide management of climate science and research. Since 2002, CCSP has been responsible for meeting the reporting requirement and has published the *Our Changing Planet* reports. The most recent report in this series was published in November 2005.

The Climate Change Technology Program (CCTP) is a multiagency technology research and development coordinating structure similar to CCSP. Its overall goal is to attain, on a global scale and in partnership with other entities, a technological capability that can provide abundant, clean, secure, and affordable energy and related services needed to encourage and sustain economic growth, while achieving substantial reductions in emissions of greenhouse gases and mitigating the risks of potential climate change.

In March 1998, OMB, in response to a congressional requirement for a detailed account of climate change expenditures and obligations, issued a brief report summarizing federal agency programs related to global climate change. OMB produced another climate change expenditures report in March 1999 and, in response to a request at a 1999 hearing, OMB provided climate change funding data for 1993 through 1998 for the

⁶The annual reporting requirement for climate change expenditures was terminated effective May 15, 2000. The reporting requirement had called for “(A) the amounts spent during the fiscal year most recently ended; (B) the amounts expected to be spent during the current fiscal year; and (C) the amounts requested for the fiscal year for which the budget is being submitted.”

⁷To maintain consistency with OMB data, which are available from 1993 to 2004, we reviewed reported science funding from 1993 to 2004.

hearing record. Each year since 1999, the Congress has included a provision in annual appropriations laws requiring OMB to report in detail all federal agency obligations and expenditures, domestic and international, for climate change programs and activities. As a result of these reporting requirements, OMB annually publishes the *Federal Climate Change Expenditures Report to Congress*, which presents federal climate change funding for the technology, science, and international assistance categories, and tax expenditures. The climate change activities and associated costs presented in OMB reports must be identified by line item as presented in the President's budget appendix. OMB has interpreted this to mean that the data in the reports must be shown by budget account. For the last 3 years for which we reviewed data, the Congress had required that the administration produce reports for climate change expenditures and obligations for the current fiscal year within 45 days after the submission of the President's budget request for the upcoming fiscal year. OMB's most recent report was released in April 2006.

OMB reports include a wide range of federal climate-related programs and activities. Some activities, like scientific research on global environmental change by USGCRP, are explicitly climate change programs, whereas others, such as many technology initiatives, are not solely for climate change purposes. For example, OMB reports included some programs that were started after the United States ratified the Framework Convention in 1992 and were specifically designed to encourage businesses and others to reduce their greenhouse gas emissions, for example, by installing more efficient lighting. OMB reports also included programs that were expanded or initiated in the wake of the 1973 oil embargo to support such activities as energy conservation (to use energy more efficiently), renewable energy (to substitute for fossil fuels), and fossil energy (to make more efficient use of fossil fuels), all of which can help to reduce greenhouse gas emissions, but were not initially developed as climate change programs.

Reported Federal Climate Change Funding Increased for Three of the Four Funding Categories, but Data May Not Be Comparable Over Time

Federal climate change funding, as reported by OMB, increased from \$2.35 billion in 1993 to \$5.09 billion in 2004 (116 percent), or from \$3.28 billion to \$5.09 billion (55 percent) after adjusting for inflation. Funding also increased for technology, science, and international assistance between 1993 and 2004, as shown in table 1. However, changes in reporting methods have limited the comparability of funding data over time; therefore it is unclear whether funding increased as much as reported by OMB.⁸ OMB did not report estimates for existing climate-related tax expenditures during this period, although climate-related tax expenditures amounted to hundreds of millions of dollars in revenue forgone by the federal government in fiscal year 2004. OMB officials told us that changes in reporting methods were due to such reasons as the short amount of time available to prepare the report, the fact that the reporting requirement is not permanent law, but appears each year in their appropriations legislation, and changes in administration policy and priorities. As a result of our recommendations, however, OMB made changes in its report on climate change funding for fiscal year 2007, which was published in April 2006. For example, OMB more clearly labeled data throughout the report and added information on existing tax provisions that can contribute to reducing greenhouse gas emissions.

Table 1: Reported Federal Climate Change Funding by Category, Selected Years

Discretionary budget authority in millions of dollars				
Category	1993	1997	2001	2004
Technology	\$845	\$1,056	\$1,675	\$2,868
Science	1,306	1,656	1,728	1,976
International assistance	201	164	218	252
Tax expenditures	^a	^a	^a	^a
Total	\$2,352	\$2,876	\$3,603	\$5,090

Source: GAO analysis of OMB data.

^aOMB did not report revenue loss estimates for existing climate-related tax expenditures for this year.

⁸Technology funding increased as a share of total funding over time, while science and international assistance funding declined as shares of the total because technology funding increased at a faster rate than the other categories.

Technology

From 1993 through 2004, technology funding increased as a share of total federal climate funding from 36 percent to 56 percent, as reported by OMB. Over this period, technology funding increased from \$845 million to \$2.87 billion (239 percent), or adjusted for inflation, from \$1.18 billion to \$2.87 billion (143 percent). For example, funding for energy conservation increased from \$346 million to \$868 million, and funding for renewable energy increased from \$249 million to \$352 million. Table 2 presents funding data for selected years for the seven largest accounts, which accounted for 92 percent of technology funding in 2004.

Table 2: Reported Technology Funding for Selected Accounts and Years

Discretionary budget authority in millions of dollars					
Agency	Account	1993	1997	2001	2004
Department of Energy	Energy Conservation	\$346	\$414	\$810	\$868
	Energy Supply — Fossil Energy Research and Development (R&D)	250	201	292	455
	Energy Supply — Renewable Energy	249	244	370	352
	Science (Fusion, Sequestration, and Hydrogen) ^a	b	b	35	333
	Energy Supply — Nuclear ^c	b	b	39	309
National Aeronautics and Space Administration	Exploration, Science, and Aeronautics	b	b	b	227
Environmental Protection Agency	Environmental Programs and Management	b	70	96	89
Other		b	127	33	235
Total		\$845	\$1,056	\$1,675	\$2,868

Source: GAO analysis of OMB data.

^aSequestration can be defined as the capture and isolation of gases that otherwise could contribute to global climate change.

^bOMB did not report a value in the technology category for this account for this year.

^cFor 2001 Energy Supply — Nuclear funding, we counted the Nuclear Energy Research Initiative and Energy Supply — Nuclear budget accounts as presented by OMB. OMB did not separately present these accounts for 2004, and included funding for the Nuclear Energy Research Initiative within the Energy Supply—Nuclear account.

We identified three ways that the data on technology funding presented in three of OMB's recent reports may not be comparable to the data presented in previous reports. First, OMB added accounts that were not previously presented. For example, OMB reported that NASA had \$152

million in funding for technology-related activities, which included research to reduce emissions associated with aircraft operations in 2003. OMB did not report this account in the technology category in 2002. In addition, OMB included and removed some accounts, without explanation, from reports in years other than 2003. For example, OMB reported combined funding of \$195 million in 1999, and \$200 million in 2000, for bio-based products and bio-energy at the Departments of Energy and of Agriculture. No funding for these accounts was reported from 1993 through 1998 or from 2001 through 2004. In each of these cases, OMB did not explain whether the new accounts reflected the creation of new programs, a decision to count an existing program for the first time, or a decision to re-classify funding from different categories as technology funding.

According to OMB officials, these changes in report structure and content for technology funding, as well as similar changes in science and international assistance funding, were the result of time constraints and other factors. They told us that the short timeline required by the Congress for completing the report (within 45 days of submitting the upcoming year's budget) limited OMB's ability to analyze data submitted by agencies. They said that they must rely on funding estimates quickly developed by agencies in order to produce the report within the specified timeframe, and that the reports are often compilations of agency activities and programs, some of which may or may not have been presented separately in prior years. Moreover, these officials told us that the presentation of data has changed over time for a variety of reasons other than short time limits, including changes in administration priorities and policy, changes in congressional direction, changes to budget and account structures, and attempts to more accurately reflect the reporting requirement as specified in the annual appropriations language. The officials also stated that in each report they ensured consistency for the 3 years covered (prior year, current year, and budget year).

Furthermore, OMB officials told us that the presentation of new accounts in the technology category, as well as the international assistance category, was due to the establishment of new programs and the inclusion of existing programs. They told us that the account-by-account display in the reports has been changed over time as the CCSP and the Climate Change Technology Program (CCTP), a multiagency technology research and development coordinating structure similar to the CCSP, have become better defined.

Second, OMB reported that it expanded the definitions of some accounts to include more activities but did not specify how the definitions were changed. We found that over 50 percent of the increase in technology funding from 2002 to 2003 was due to increases in two existing DOE accounts: nuclear energy supply and science (fusion, sequestration, and hydrogen). OMB reported funding of \$32 million in 2002 and \$257 million in 2003, for the nuclear energy supply account⁹ and reported funding of \$35 million in 2002, and \$298 million in 2003, for the science (fusion, sequestration, and hydrogen) account. Although OMB stated in its May 2004 report that 2003 funding data included more activities within certain accounts, including the research and development of nuclear and fusion energy, the report was unclear about whether the funding increases for these two existing accounts were due to the addition of more programs to the accounts or increased funding for existing programs already counted in the accounts. Finally, if new programs were counted in these accounts, OMB did not specify what programs were added and why.

OMB officials told us that the definitions of some accounts were changed to include more nuclear programs because, while the prior administration did not consider nuclear programs to be part of its activities relating to climate change, the current administration does consider them to be a key part of the CCTP.

Third, OMB did not maintain the distinction that it had made in previous reports between funding for programs whose primary focus is climate change and programs where climate change is not the primary focus. As a result, certain accounts in the technology category were consolidated into larger accounts. From 1993 through 2001, OMB presented funding data as directly or indirectly related to climate change. The former programs are those for which climate change is a primary purpose, such as renewable energy research and development. The latter are programs that have another primary purpose, but which also support climate change goals. For example, grants to help low-income people weatherize their dwellings are intended primarily to reduce heating costs, but may also help reduce the consumption of fossil fuels. OMB did not maintain the distinction between the two kinds of programs for 2002, 2003, and 2004 funding data. For example, OMB presented energy conservation funding of \$810 million

⁹We counted the Nuclear Energy Research Initiative (NERI) account as Nuclear Energy Supply funding for 2002. The NERI line item is counted in the aggregate Energy Supply – Nuclear budget account in OMB’s 2004 and 2005 reports, and is no longer presented separately.

in 2001, including \$619 million in direct research and development funding, and \$191 million in indirect funding for weatherization and state energy grants. In contrast, 2002 funding data presented by OMB reflected energy conservation funding of \$897 million, including \$622 million in research and development, \$230 million for weatherization, and \$45 million for state energy grants, but did not distinguish between direct and indirect funding. OMB presented energy conservation funding of \$880 million in 2003 and \$868 million in 2004 as single accounts without any additional detail.

OMB officials stated that they had adopted a different approach to reporting climate change funding to reflect the new program structures as the CCSP and CCTP were being established. They stated that the result was, in some cases, an aggregation of activities that may have previously been reported on separate accounts. According to the officials, the 2003 and 2004 data more accurately reflect the range of climate change-related programs as they are now organized. OMB included a crosswalk in its May 2004 report that showed 2003 funding levels as they would have been presented using the methodology of previous reports. While the crosswalk identified funding for accounts that were presented in previous reports, it did not identify new funding reported by OMB or specify whether such funding was the result of counting new programs, a decision to start counting existing programs as climate change-related, or shifts between categories. OMB officials told us that the reporting methodology has changed since the initial reports and that it may be difficult to resolve the differences because of changes in budget and account structure. Finally, they noted that each report has been prepared in response to a one-time requirement and that there has been no requirement for a consistent reporting format from one year to the next or for explaining differences in methodology from one report to another. However, in its fiscal year 2007 report to the Congress, OMB responded to our recommendations by labeling the data more clearly and reporting changes were footnoted.

Science

According to both OMB and CCSP, the share of total climate change funding devoted to science decreased from 56 percent in 1993 to 39 percent in 2004, even though science funding increased from \$1.31 billion to \$1.98 billion (51 percent), or from \$1.82 billion to \$1.98 billion (9 percent) after adjusting for inflation. For example, according to OMB, funding for NASA on activities such as the satellite measurement of

atmospheric ozone concentrations increased from \$888 million to \$1.26 billion.¹⁰

OMB reported new science funding for 2003 and 2004 to reflect the creation of CCRI. Funding for CCRI increased from \$41 million in 2003, the first year funding for CCRI was presented, to \$173 million in 2004, and included funding by most of the agencies presented in table 3. We present funding for CCRI as a separate program to illustrate the new organization's role in increasing reported climate change funding. Table 3 presents funding as reported by OMB for the eight largest agencies and programs in the science category, which accounted for 99 percent of the science total for 2004.

Table 3: Reported Science Funding by Agency or Program for Selected Years

Discretionary budget authority in millions of dollars					
Agency or program	Account	1993	1997	2001	2004
NASA ^a	Science, Aeronautics, and Technology	\$888	\$1,218	\$1,176	\$1,256
National Science Foundation	Research and Related Activities	124	166	181	185
CCRI	Various accounts for eight agencies	b	b	b	173
DOE	Science (Biological and Environmental Research)	118	109	116	102
Department of Commerce - National Oceanic and Atmospheric Administration	Operations, Research, and Facilities	66	60	93	82
Department of Agriculture	Agriculture Research Service and four other accounts	55	57	51	64
Department of Health and Human Services	National Institutes of Health (NIH)	b	b	54	62
Department of Interior – U.S. Geological Survey	Surveys and Research	22	26	27	28
Other		33	20	30	24
Total		\$1,306	\$1,656	\$1,728	\$1,976

Source: GAO analysis of OMB data.

¹⁰The \$1.26 billion includes NASA's reported funding for the United States Global Change Research Program. NASA funding for CCRI is reported separately.

Note: OMB generally presented climate science funding with one account per agency.

^aBeginning in 2004, NASA funding reflects full-cost accounting, meaning institutional activities such as personnel and facilities (which had been held in separate accounts) are included. NASA's climate change funding varies based on changes in its budget for space-observing platforms, the natural development cycle of its satellites, and revisions to mission profiles.

^bOMB did not report a value in the science category for this agency or program for this year.

Science funding data from 1993 through 2004, as reported by OMB and CCSP, were generally comparable, although there were more discrepancies in earlier years than in later years.¹¹ Science funding totals reported by CCSP from 1993 through 1997 were within 3 percent of the OMB totals for all years except 1996 and 1997. Science funding totals reported by CCSP in 1996 and 1997 were \$156 million (9 percent) and \$162 million (10 percent) higher than those reported by OMB. Over 90 percent of the difference for those years occurred because CCSP reported greater funding for NASA than OMB reported. CCSP stated in its fiscal year 1998 report that it increased its 1996 and 1997 budget figures to reflect the reclassification of certain programs and activities in some agencies that were not previously included in the science funding total.

Total science funding reported by OMB and CCSP from 1998 through 2004 was identical for 4 of the 7 years. The largest difference for the 3 years that were not identical was \$8 million in 2001, which represented less than 1 percent of the science funding total reported by OMB for that year. The other differences in total science funding were \$3 million in 2002, and \$1 million in 1999, and each represented less than 1 percent of the OMB science total for those years.

Science funding by agency, as presented by OMB and CCSP from 1993 through 1997, differed in many cases, with the exception of funding for the National Science Foundation (NSF), which was nearly identical over that time period. For example, CCSP reported \$143 million more funding for NASA in 1996 than OMB reported, and OMB reported \$24.9 million more funding for DOE in 1994 than CCSP reported. The greatest dollar difference related to NASA's funding in 1997. Whereas OMB reported funding of \$1.22 billion, CCSP reported funding of \$1.37 billion—\$151 million, or 12 percent more than the OMB amount. The greatest

¹¹CCSP's most recent report (July 2004) presents estimated 2004 funding, whereas OMB's most recent report (March 2005) presents actual 2004 funding. Whenever we compare 2004 science funding as reported by OMB and CCSP, we are comparing estimated 2004 funding presented in OMB's May 2004 report and CCSP's July 2004 report.

percentage difference related to the Department of the Interior's funding in 1993. Whereas OMB reported funding of \$22 million, CCSP reported funding of \$37.7 million—\$15.7 million, or 71 percent more than reported by OMB. Further, from 1993 through 1997, OMB did not report science funding by some agencies that were reported by CCSP. For example, CCSP reported that DOD's funding ranged from \$5.7 million to \$6.6 million from 1993 through 1995, and that the Tennessee Valley Authority received funding of \$1 million or less per year from 1993 through 1997, but OMB did not report any such funding.

OMB officials told us that data used for the 1993 to 1997 science funding comparison with CCSP were collected too long ago to be able to identify the differences. However, they stated that the data from early years were produced in a very short period for use in testimony or questions for the record. According to OMB, this quick turnaround did not allow time for a thorough consistency check with other data sources.

From 1998 through 2004, OMB and CCSP data on funding by agency were nearly identical. Both OMB and CCSP reported science funding for nine agencies over the entire 7-year period, for a total of 63 agency funding amounts. Of these, 52, or 83 percent, matched exactly. Of the 11 differences, there was one difference of \$8 million, one of \$2 million, and nine of \$1 million or less. The greatest difference from 1998 through 2004 was \$8 million in funding for the Department of Commerce in 2001, which was 9 percent of the Department of Commerce total, or less than 1 percent of total science funding as reported by OMB for that year.

The director of CCSP told us that changes to reports, such as the creation and deletion of different categorization methods, were made because CCSP is changing towards a goals-oriented budget, and that categorization methods changed as the program evolved. The director also said that future reports will explicitly present budget data as they were reported in prior reports to retain continuity, even if new methods are introduced. Another CCSP official told us that CCSP now works with OMB to ensure that consistent funding information is presented in Our Changing Planet reports and OMB reports, and that, beginning with the fiscal year 2006 report (which was published in late 2005), CCSP would attempt to explain when and why changes are made to reporting methods. In its 2006 fiscal year report, CCSP did explain changes to its reporting.

International Assistance

From 1993 through 2004, international assistance funding decreased from 9 percent to 5 percent of total federal funding on climate change, as reported by OMB. Over the same time period, international assistance

funding increased from \$201 million to \$252 million (an increase of 25 percent), but after adjusting for inflation, decreased from \$280 million to \$252 million (a decrease of 10 percent). For example, reported funding for the Department of the Treasury to help developing countries invest in energy efficiency, renewable energy, and the development of clean energy technologies, such as fuel cells, increased from zero in 1993 to \$32 million in 2004. Table 4 presents funding as reported by OMB for the three largest accounts in the international assistance category.

Table 4: Reported International Assistance Funding for Selected Accounts and Years

Discretionary budget authority in millions of dollars					
Agency	Account	1993	1997	2001	2004
U.S. Agency for International Development (USAID)	Development Assistance	\$200	\$147	\$112	\$125
	Assistance for the Independent States of the Former Soviet Union	^b	^b	31	47
Department of the Treasury	Global Environment Facility ^a	^b	14	41	32
Other		1	3	34	48
Total		\$201	\$164	\$218	\$252

Source: GAO analysis of OMB data.

^aOMB did not include the Department of the Treasury's funding for the Global Environment Facility (GEF) in the international assistance category from 1994 through 2001. OMB presented GEF funding in the international assistance category from 2002 through 2004. To maintain consistency, we included GEF funding in the international assistance category from 1994 through 2004 for the purposes of this testimony.

^bOMB did not report a value in the international assistance category for this account for this year.

International assistance funding reported by OMB was generally comparable over time, although some new accounts were added without explanation. In its reports, OMB did not provide an explanation of whether such new accounts reflected the creation of new programs or a decision to count existing programs as climate change-related for the first time. OMB officials told us that the presentation of new accounts in the international assistance category was due to the establishment of new programs and the inclusion of existing programs. They told us that the account-by-account display in the reports has been changed over time as climate change programs have become better defined.

Tax Expenditures

Although not required to provide information on tax expenditures related to climate change, OMB reported certain information related to climate-related tax expenditures for each year. Specifically, it listed proposed climate-related tax expenditures appearing in the President's budget, but it did not report revenue loss estimates for existing climate-related tax expenditures from 1993 through 2004. Based on the Department of the Treasury's tax expenditure list published in the 2006 budget,¹² we identified four existing tax expenditures that have purposes similar to programs reported by OMB in its climate change reports. In 2004, estimated revenue losses amounted to hundreds of millions of dollars for the following tax expenditures:¹³

- \$330 million in revenue losses was estimated for new technology tax credits to reduce the cost of generating electricity from renewable resources. A credit of 10 percent was available for investment in solar and geothermal energy facilities. In addition, a credit of 1.5 cents was available per kilowatt hour of electricity produced from renewable resources such as biomass, poultry waste, and wind facilities.
- \$100 million in revenue losses was estimated for excluded interest on energy facility bonds to reduce the cost of investing in certain hydroelectric and solid waste disposal facilities. The interest earned on state and local bonds used to finance the construction of certain hydroelectric generating facilities was tax exempt. Some solid waste disposal facilities that produced electricity also qualified for this exemption.
- \$100 million in revenue losses was estimated for excluded income from conservation subsidies provided by public utilities to reduce the cost of purchasing energy-efficient technologies. Residential utility customers could exclude from their taxable income energy conservation subsidies provided by public utilities. Customers could exclude subsidies used for installing or modifying certain equipment that reduced energy consumption or improved the management of energy demand.

¹²The Department of the Treasury reported 2004 tax expenditures in the *Budget of the U.S. Government, Fiscal Year 2006* edition, Analytical Perspectives volume, chapter 19.

¹³The Department of the Treasury calculated each tax expenditure estimate assuming other parts of the tax code remained unchanged. Because tax provisions can be interdependent, we do not report the mathematical sum of the revenue losses estimated for the four climate-related tax expenditures, and instead present this general gauge of the magnitude of revenue forgone for climate-related tax expenditures.

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- \$70 million in revenue losses was estimated for tax incentives for the purchase of clean fueled vehicles to reduce automobile emissions. A tax credit of 10 percent, not to exceed \$4,000, was available to purchasers of electric vehicles. Purchasers of vehicles powered by compressed natural gas, hydrogen, alcohol, and other clean fuels could deduct up to \$50,000 of the vehicle purchase costs from their taxable income, depending upon the weight and cost of the vehicle. Similarly, owners of refueling properties could deduct up to \$100,000 for the purchase of re-fueling equipment for clean fueled vehicles.

OMB officials said that they consistently reported proposed tax expenditures where a key purpose was specifically to reduce greenhouse gas emissions. They also stated that they did not include existing tax expenditures that may have greenhouse gas benefits but were enacted for other purposes, and that the Congress had provided no guidance to suggest additional tax expenditure data should be included in the annual reports.

OMB's decision criteria for determining which tax expenditures to include differed in two key respects from its criteria for determining which accounts to include. First, OMB presented funding for existing as well as proposed accounts, but presented information only on proposed, but not existing, tax expenditures. Second, OMB presented funding for programs where a key purpose was specifically to reduce greenhouse gas emissions, as well as for programs that may have greenhouse gas benefits but were enacted for other purposes. However, OMB presented information only on proposed tax expenditures where a key purpose was specifically to reduce greenhouse gas emissions. In response to GAO's recommendation to report existing climate-related tax expenditures, OMB's fiscal year 2007 report to the Congress includes existing tax expenditures that contribute to reducing global warming.

Reported Funding for Most Agencies Increased, but Unexplained Changes in Report Content Limit the Comparability of Data Over Time

OMB reported that 12 of the 14 agencies that received funding for climate change programs in 2004 received more funding in that year than they had in 1993. However, it is unclear whether funding changed as much as reported by OMB because unexplained modifications in the reports' contents limit the comparability of agencies' funding data. From 1993 through 2004, climate change funding for DOE increased more than any other agency, from \$963 million to \$2.52 billion, for an increase of \$1.56 billion (162 percent). Adjusted for inflation, such funding increased from \$1.34 billion to \$2.52 billion, for an increase of \$1.18 billion (88 percent). The second largest increase in agency funding was for NASA, which received a \$660 million (74 percent) increase in funding over the same time period. NASA's funding increased \$310 million (25 percent) over this period after adjusting for inflation. The funding increases for these two agencies accounted for 81 percent of the reported total increase in federal climate change funding from 1993 through 2004. Conversely, USAID experienced the largest decrease in funding—from \$200 million in 1993 to \$195 million in 2004 (3 percent), or, in inflation-adjusted terms, from \$279 million to \$195 million (30 percent). Table 5 shows OMB's reports on climate change funding by agency for selected years.

Table 5: Reported Climate Change Funding by Agency, Selected Years

Discretionary budget authority in millions of dollars				
Agency	1993	1997	2001	2004
DOE	\$963	\$968	\$1,665	\$2,519
NASA	888	1,218	1,176	1,548
NSF	124	222	181	226
USAID	200	147	157	195
Department of Commerce	66	102	93	144
EPA	26	99	146	127
Department of Agriculture	55	57	54	115
Other	30	63	131	216
Total	\$2,352	\$2,876	\$3,603	\$5,090

Source: GAO analysis of OMB data.

Unexplained changes in the content of OMB reports make it difficult to determine whether funding changed as much as was reported by OMB. Because agency funding totals are composed of individual accounts, the changes in the reports' contents discussed earlier, such as the unexplained addition of accounts to the technology category, limit the comparability of agencies' funding data over time. For example, OMB reported Army, Navy,

Air Force, and Defense-wide funding totaling \$83 million in 2003, and \$51 million in 2004, in accounts titled Research, Development, Test, and Evaluation, but did not report these accounts for prior years. OMB did not explain whether these accounts reflected the creation of new programs or a decision to count existing programs for the first time.

OMB officials told us that agencies can be included in reports for the first time when new initiatives or programs are started, such as the CCTP. In some cases, those initiatives or programs are made up of entirely new funding but in other cases they may be additions on top of a small amount of base funding. These officials told us that agencies sometimes include data that were not previously reported when they requested funding for those initiatives, but they assured us that the data are reported consistently for the 3 years presented in each report.

OMB Reports Presented Information on Budget Authority Rather Than—as Required by the Congress—on Expenditures and Obligations

The federal budget process is complex, and there are numerous steps that culminate in the outlay of federal funds. Among the key steps in this process are the following, as defined by OMB:

- Budget authority means the authority provided in law to incur financial obligations that will result in outlays.
- Obligations are binding agreements that will result in outlays, immediately or in the future.
- Expenditures are payments to liquidate an obligation. The Congress, in the Congressional Budget and Impoundment Control Act of 1974, as amended, has defined outlays as being the expenditures and net lending of funds under budget authority.

In simplified terms, budget authority precedes obligations, which precede outlays in the process of spending federal funds.

As noted above, since 1999, the Congress has required the President to submit a report each year to the Senate and House Committees on Appropriations describing in detail all federal agency obligations and expenditures, domestic and international, for climate change programs and activities. In response, OMB had annually published the *Federal Climate Change Expenditures Report to Congress* which presented budget authority information in summary data tables instead of obligations and expenditures, as the title of the report and the table titles suggested. The only indication that the table presented budget authority information,

rather than expenditures, was a parenthetical statement to that effect in a significantly smaller font.

OMB officials told us that the term “expenditures” was used in the report title and text because that was the term used most often in the legislative language. They also said that the reports presented data in terms of budget authority because OMB had always interpreted the bill and report language to request the budget authority levels for each activity in a particular year. They stated further that, from a technical budget standpoint, expenditures are usually synonymous with outlays, and that one way to think of budget authority is that it is the level of expenditures (over a period of 1 or more years) that is made available in a particular appropriations bill. OMB viewed this as an appropriate interpretation of the congressional requirements since the committees on appropriations work with budget authority and not outlays. Moreover, OMB told us that these committees had never objected to its interpretation of “obligations and expenditures” as budget authority and that OMB had always identified the data provided in the table as budget authority.

In our August 2005 report, we expressed several concerns with OMB’s approach. First, OMB’s approach of reporting budget authority did not comply with the language of the annual legal requirements to report on climate change “obligations and expenditures.” Second, in reviewing the legislative history of these reporting requirements, we found no support for OMB’s interpretation that when the Congress called for “obligations and expenditures” information, it actually meant “budget authority” information. Third, OMB’s interpretation was not consistent with its own Circular A-11, which defines budget authority as stated above, not actual obligations and expenditures. Nonetheless, we recognize that it is not possible for OMB to meet the most recent reporting requirements because it must provide a report on climate change obligations and expenditures for the current fiscal year within 45 days of submitting the President’s budget for the following fiscal year (which must be submitted the first Monday of February). For example, the President submitted the fiscal year 2006 budget on February 7, 2005, so OMB’s report on fiscal year 2005 climate change expenditures and obligations had to be submitted in March 2005—approximately halfway through the 2005 fiscal year. However, complete expenditures data are available only after the end of each fiscal year. Thus, OMB could not meet both the timing requirement and report all actual expenditures and obligations in fiscal year 2005.

CCSP has also reported budget authority data in its Our Changing Planet reports. As noted above, CCSP, or its predecessor organization, initially

was required to report annually on certain climate change “amounts spent,” “amounts expected to be spent,” and “amounts requested,” but this reporting requirement was terminated in 2000. Currently, CCSP is responsible for reporting information relating to the federal budget and federal funding for climate change science, not climate change expenditure information. Since 2000, CCSP has fulfilled these reporting requirements by providing budget authority information in its Our Changing Planet reports.

Conclusions

In conclusion, we found that the lack of clarity in OMB’s and CCSP’s reports made it difficult to comprehensively understand the federal government’s climate change expenditures. A better understanding of these expenditures is needed before it is possible to assess CCSP’s and other federal agencies’ progress towards their climate change goals. We therefore made seven recommendations to OMB and three to CCSP to clarify how they present climate change funding information. OMB agreed with most of our recommendations and has also implemented several of them. CCSP agreed with all of our recommendations and has implemented our recommendation about explaining changes in report content or format.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any question you or other Members of the Committee may have.

Contact and Staff Acknowledgments

For further information regarding this testimony, please contact me at (202) 512-3841. John Healey, Anne K. Johnson, and Vincent P. Price made key contributions to this testimony. Richard Johnson, Carol Kolarik, Carol Herrnsstadt Shulman, and Anne Stevens also made important contributions.

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