



United States
General Accounting Office
Washington, D.C. 20548

**Resources, Community, and
Economic Development Division**

B-283052

July 14, 1999

The Honorable Christopher S. Bond
Chairman
The Honorable Barbara A. Mikulski
Ranking Minority Member
Subcommittee on VA, HUD, and
Independent Agencies
Committee on Appropriations
United States Senate

Subject: Climate Change: Observations on EPA's April 1999 Climate Change Report

In a June 1998 report, the Senate Committee on Appropriations directed the Environmental Protection Agency (EPA) to prepare a report on its climate change activities. The Committee's directive was included in its report on the bill that appropriated funds for the agency for fiscal year 1999.¹ The Committee's report also directed us to evaluate EPA's report and to submit our report to the Committee within 90 days of receiving it. A subsequent Senate colloquy restated and elaborated on the Committee's directive.²

The Committee report directed the agency to explain its plan for implementing the President's October 1997 proposal on climate change, called the Climate Change Technology Initiative. That proposal, made 2 months prior to an international conference on climate change, resulted in an agreement called the Kyoto Protocol. The United States and certain other nations agreed in principle to limit their emissions of carbon dioxide and other so-called greenhouse gases, which are believed to contribute to global climate change. The protocol has not been submitted to the Senate for ratification. The protocol would amend an international agreement on climate change, which the Senate did ratify.

As directed, we reviewed the agency's report³ to determine the extent to which it (1) provides a comprehensive explanation of the agency's climate change programs for fiscal year 2000, (2) justifies requested increases in funding for that fiscal year, (3) explains

¹S. Rep. No. 105-216, at 74-75 (1998).

²144 Cong. Rec. S8434 (daily ed. July 17, 1998) (statements of Senators Bond and Byrd).

³EPA's Climate Change Activities, Report to the Senate Appropriations Committee (Apr. 8, 1999).

how the climate change activities are justified independently of the Kyoto Protocol, and (4) includes performance measures and goals and similar elements, as would be required by the Government Performance and Results Act of 1993 (the Results Act).

Results in Brief

EPA's report on its climate change programs is not comprehensive and provides little information about its programs' funding and expected results. The report covers seven of the nine broad initiatives listed in EPA's fiscal year 2000 budget justification for climate change programs, which account for about \$240 million. The report does not discuss two broad initiatives, which account for about \$23 million, or about 10 percent, of EPA's total request for climate change programs. According to an agency official, EPA understood the Committee's directive as relating only to programs that are part of the Climate Change Technology Initiative and omitted the two broad initiatives that are not part of the technology initiative. Whereas the directive was linked to the technology initiative, the colloquy called for a "comprehensive explanation" of the agency's programs. Accordingly, we read the colloquy as seeking information on all of the agency's climate change programs, not just those that are part of the technology initiative. Moreover, the report generally provides data on funding and expected results only for the broad initiatives but does not explain how the individual programs that make up the initiatives will contribute to the initiatives' expected results. For example, the report discusses requested funding and expected results for the industry-sector initiative but not for the initiative's nine individual programs. Finally, although EPA was directed in the colloquy to issue the report by the time it submitted its fiscal year 2000 budget justification (which was Feb. 1), the report was not issued until April 8, 1999, about 2 months late.

EPA's report does not provide justifications for the proposed funding increases for individual climate change programs for fiscal year 2000. Instead, it provides justifications only for the total funding level requested, and this for only four of the six initiatives for which an increase was requested. (No funding for the seventh initiative was requested for fiscal year 2000.) For example, to justify its request for the transportation sector, the report estimates the benefits—in terms of reduced greenhouse gas emissions—expected from the total requested funding level of \$61.9 million, but it does not distinguish between the benefits that were anticipated from continued funding at the previous year's level of \$31.75 million and the additional benefits anticipated from the requested increase of \$30.15 million. For the other two of the six initiatives for which an increase was requested, the report does not provide estimates of the reductions in greenhouse gas emissions expected to result from the combined requested increase of \$13.8 million or explain why there are no such estimates.

EPA's report explains that its climate change activities are justified by long-standing agency goals and objectives and are not intended to implement the December 1997 Kyoto Protocol. Specifically, the report explains that these activities are justified by an international convention on climate change that was ratified by the Senate in 1992 and by seven specific environmental laws that EPA implements.

EPA's report includes information on performance measures and goals and related information, which is similar to the information required by the Results Act. For

example, the report identifies reductions in greenhouse gas emissions and other ways of measuring performance and, for each measure, specifies a reduction goal for fiscal year 2000. The information on goals is generally provided for the climate change activities as a whole, with little information on the broad initiatives and no information on individual programs. In addition, the report provides some information on the strategies and resources needed to achieve these goals and little information on procedures to verify and validate reported performance.

Background

Increasing emissions of carbon dioxide, methane, and other heat-trapping gases generated by human activity are believed to contribute to global warming. These so-called greenhouse gases have varied effects on the atmosphere, as measured by their potential ability to raise the earth's temperature (global warming) over a specified period of time. To arrive at a common measure for the various gases, their potential for global warming is applied to the volume of emissions. This measure can be expressed in terms of "million metric tons of carbon equivalent."

In 1992, the United Nations Framework Convention on Climate Change was signed by 154 nations, including the United States. The Senate ratified the convention the same year. The convention's objective was to stabilize the concentration of greenhouse gases in the atmosphere. Under the convention, developed countries agreed to try to return their greenhouse gas emissions to 1990 levels by the year 2000. However, this goal was not binding.

In 1993, EPA began a series of climate change programs that encourage businesses and others to voluntarily reduce energy use and otherwise curb their emissions of greenhouse gases. These programs now include the following, among others:

- The Energy Star Buildings and Green Lights programs encourage improved energy efficiency in commercial and industrial buildings in the private sector.⁴
- The Partnership for a New Generation of Vehicles involves seven federal agencies and an automobile industry research consortium in, among other things, developing automobiles with low emissions and 3 times the fuel efficiency of current comparable vehicles.
- The Ruminant Livestock Efficiency Program aims to increase the efficiency of livestock production while decreasing the amount of methane produced as a by-product of digestion.
- The Transportation Partners Program promotes and supports voluntary local programs that reduce greenhouse gas emissions from the transportation sector by improving transportation choices and efficiency.

⁴The Green Lights Program was merged into the Energy Star Buildings Program at the end of 1998. The EPA report sometimes refers to them as separate programs.

- The Waste Wise Program works with businesses, government units, and other institutions to reduce municipal solid waste by limiting waste, recycling, and buying and manufacturing recycled products.

The 1992 convention went into effect in 1994. However, by 1995, the parties to the convention realized that insufficient progress was being made towards its goals and therefore decided to begin negotiations on a legally binding protocol. In October 1997, in anticipation of an international conference in December, the President announced a multiyear proposal, called the Climate Change Technology Initiative, which involves EPA and other federal agencies in efforts to reduce emissions of greenhouse gases. In December 1997, the parties to the convention reconvened in Kyoto, Japan, to approve binding measures to reduce greenhouse gas emissions. The resultant Kyoto Protocol to the convention—agreed to in principle by the United States and 37 other nations—would generally establish binding limits on emissions for the years 2008 through 2012 for developed countries. The United States has signed the protocol but not ratified it, which requires the advice and consent of the Senate.

In June 1998, the Senate Committee on Appropriations directed EPA to prepare a detailed plan for implementing the President's October 1997 proposal on climate change. The Committee directed that EPA's report include an annual performance goal for the reduction of greenhouse gas emissions that has objective, quantifiable, and measurable target levels and provides substantial evidence on the effectiveness of implementing the President's proposal. EPA was directed, in preparing the report, to comply with the letter and spirit of the Results Act and to submit the report to the Committee by December 31, 1998.⁵ In addition to restating and elaborating on the report's objectives, as noted above, the colloquy allowed EPA more time to prepare its report. EPA was directed to issue its report by the time it submitted its fiscal year 2000 budget submission (which occurred on Feb. 1, 1999).

Report Is Not Comprehensive and Provides Little Information at Program Level

EPA's report does not provide a comprehensive explanation of its climate change programs and provides little information on the funding and expected results of individual programs. The report covers only seven of the nine broad initiatives listed in the agency's fiscal year 2000 budget justification for climate change programs. The two broad initiatives included in the budget submission but not in the April report are Climate Change Research (\$22.8 million requested) and Partnership With Industrial and Other Countries (\$0.4 million requested). These two initiatives account for about \$23 million, or 10 percent, of the agency's total request for climate change programs.

According to an EPA official, EPA understood the Committee's directive as relating only to programs that are part of the Climate Change Technology Initiative and omitted the

⁵The Congress enacted the Results Act to improve the management of federal programs, as well as their effectiveness and efficiency, by establishing a system under which agencies set goals for programs' performance and measure their results. While EPA's climate change report is not required under the Results Act, we take the Committee's directive to mean that EPA should have included the kind of information contained in plans that are required by the Results Act.

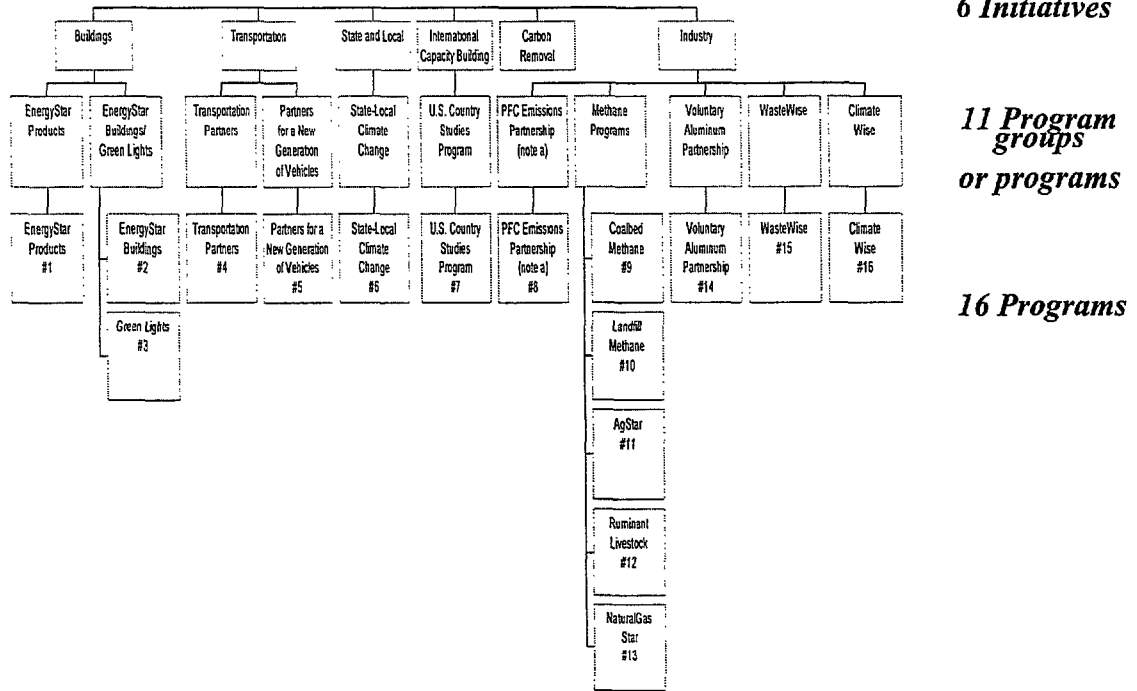
other two initiatives because they are not considered part of that initiative. While the Committee report links EPA's report to the Climate Change Technology Initiative, the colloquy that restated and elaborated on the Committee report does not do so. The colloquy calls for a "comprehensive explanation" by EPA of its energy and environment programs, which we took to mean EPA's climate change programs.

Although EPA's report provides narrative information on the programs' rationales, operations, and examples of successes, it provides little quantitative information on funding and explanation of how the individual programs contribute to achieving the initiatives' expected results. The report provides information on funding and expected results for only the six initiatives for which increased funding was sought, even though some of these initiatives include numerous individual programs.

For example, the industry-sector initiative accounts for \$55.6 million, or 26 percent, of the funds requested and is expected to provide 65 percent of the reductions in greenhouse gas emissions. However, the report does not provide fiscal year 2000 information on the amount of funding requested and the expected accomplishments of each of the nine individual programs that make up that initiative. These individual programs cover a wide range of industries, including coal mining, livestock production, banking, and aluminum production, and are aimed at reducing the emissions of various greenhouse gases. According to an EPA official, EPA has historically presented only this type of aggregated information in its budget justifications and Results Act performance plans. Furthermore, EPA believed that presenting information at the program level would make the report lengthy and unnecessarily detailed and thus more difficult for the Congress and others to use.

When the report provides information about programs, that information is not well integrated. For example, the report includes descriptions of 11 program groups or programs, which include 16 identifiable programs. However, the report does not explain how these 11 program groups or programs relate to the six initiatives around which the report is generally organized. (Fig. 1 illustrates the six initiatives, as well as the 11 program groups or programs and the 16 individual programs.)

Figure 1: EPA's Climate Change Initiatives, Program Groups, and Programs, as Reflected in Its April 8 Report



*PFC's are perfluorocarbons, unusually long-lived greenhouse gases.

Source: GAO's illustration based on EPA's April 8 report and discussions with EPA officials.

Finally, the information that is presented below the initiative level seems to be inconsistent. For example, two chapters present details on EPA's programs. The first chapter, which is organized by the six initiatives, identifies 16 work areas. However, these 16 work areas are often different from the 16 programs identified in the second chapter. For example, the first chapter lists five work areas in the buildings sector: (1) Energy Star Products, (2) Energy Star Buildings Label, (3) the Partnership for the Advancement of Technology in Housing, (4) Federal Energy Efficiency, and (5) the Million Solar Roofs Initiative. The second chapter's presentation of activities in the buildings sector also includes the two Energy Star efforts but not the other three efforts; conversely, it lists the Green Lights Program, which is not listed in the first chapter.

Although in the colloquy EPA was directed to issue the report by the time it submitted its fiscal year 2000 budget justification (which was Feb. 1), the report was not issued until April 8, 1999. According to EPA, the report was late because of internal reviews and coordination with the Office of Management and Budget and the Department of Energy. Because the report was issued on April 8, it was not available to the Congress for the first 2 months of the annual budget process, although it has been available for the balance of the process.

Justification Provided for Total Funding Requested but Not for Fiscal Year 2000 Increases

EPA was directed to provide “justifications for funding increases,” and its report states that it “provides a justification” for the fiscal year 2000 funding increase. However, we found that, while the report provides information to justify the total amount requested for fiscal year 2000, it does not provide information to justify the requested increase for that year.

EPA requested an increase in funding for six of the seven initiatives covered by the report but not for the seventh initiative. For four of these six initiatives, the report provides information to explain the total funding level requested for fiscal year 2000. However, for the other two initiatives, \$13.8 million is requested, but the report provides no estimate of the benefits—in terms of reductions in greenhouse gas emissions or other terms—from these two initiatives.

For fiscal year 2000, the report estimates that the requested funding level of \$216.4 million will result in reduced greenhouse gas emissions of 58 million metric tons of carbon equivalent. The report also estimates other accomplishments, such as reducing nitrogen oxide emissions by more than 152,000 tons, U.S. energy consumption by more than 59 billion kilowatt-hours, and consumers’ and businesses’ energy bills by \$8 billion.

For reductions in greenhouse gas emissions, the report shows the following distribution of the overall goal of 58 million metric tons among four of the six initiatives: buildings, 12.7 million metric tons; industry, 37.9 million metric tons; transportation, 5.7 million metric tons; and state and local programs, 1.7 million metric tons. (According to EPA, it provided these benefit estimates at the initiative level because the Committee report specifically requested them.) However, the report does not provide an estimate for the other two initiatives—carbon removal⁶ and international capacity building⁷—of the benefits to be achieved, in terms of reduced greenhouse gas emissions, or explain why there are no such estimates.

Even when the report provides an estimate of the total results expected from one of the four initiatives, it does not provide an estimate of the additional benefits that would be achieved by the proposed increase in funding for fiscal year 2000. For example, the report estimates that EPA’s transportation programs will reduce emissions by 5.7 million metric tons. However, the report does not estimate how much of the reduction is expected to result from a continuation of the existing funding level of \$31.75 million and how much is expected to result from the requested funding increase of \$30.15 million.⁸

⁶Emissions of greenhouse gases can be offset, to some extent, by the absorption, or removal, of carbon dioxide by growing plants. The agency’s efforts include determining the amount of carbon dioxide absorbed and developing incentives to increase carbon storage on agricultural and forest lands.

⁷The agency’s goal is to promote actions in developing countries that reduce greenhouse gas emissions.

⁸The report does not quantify the dollar amount of the requested funding changes by initiative. We calculated the dollar amount of the change for each initiative, as well as the percentage change, and present this information in enclosure I.

The report does provide information on the benefits expected over a longer time period if funding is increased. The report explains that the request for fiscal year 2000 is part of the 5-year Climate Change Technology Initiative. The report also estimates that increased funding for EPA's programs would reduce greenhouse gas emissions by at least 354 million metric tons of carbon equivalent over 10 years.

Climate Change Activities Justified Overall but Not for Each Program

The report explains that EPA's climate change programs are fulfilling U.S. commitments under the United Nations Framework Convention on Climate Change, ratified by the Senate in 1992. Nevertheless, the report would have been more helpful if it had specified the U.S. commitment and the extent to which that commitment has been fulfilled. The commitment was to undertake measures to reduce greenhouse gas emissions to their 1990 level by 2000. According to the most recent estimate, U.S. carbon emissions from energy use were about 10 percent higher in 1998 than in 1990.⁹

The report also lists seven laws as the "primary statutory authorities" for its climate change programs. Specifically, it cites the Clean Air Act, Clean Water Act, Federal Technology Transfer Act, Global Climate Protection Act, Pollution Prevention Act, National Environmental Policy Act, and Solid Waste Disposal Act. Because of the diversity of the six initiatives and 16 programs, on the one hand, and the seven laws, on the other hand, the report's information would have been more useful if it had explained which laws cover which activities.

Finally, the report states that most of the programs began prior to December 1997 and that the others, which started after December 1997, are extensions of the earlier programs. However, the report does not provide start dates for all programs. For example, while the report states that the Partnership for a New Generation of Vehicles was announced in 1993, it does not state when the Ruminant Livestock Efficiency Program and the Transportation Partners Program began. By stating that "most" of the programs began prior to December 1997 and omitting the start dates for some programs, the report does not make clear which programs started after the Kyoto Protocol was agreed to.

Report Provides Performance Measures and Goals but Data Quality Is Unclear

In preparing its report, EPA was directed to provide the types of information that would be required by the Results Act, which seeks to improve federal management by focusing on program results. Under the act, agencies are to prepare performance plans that clearly describe (1) annual performance goals and measures, (2) the strategies and resources to be used to achieve those goals, and (3) procedures to verify and validate reported performance. Accordingly, we reviewed EPA's report to determine the extent to which it includes these components. At a general level, EPA's report provides annual performance measures and goals and some information on the strategies and resources

⁹Preliminary data from Energy Information Administration, Emissions of Carbon from Energy Sources in the United States—1998 Flash Estimate (June 30, 1999).

needed to achieve these goals, but it provides little information on procedures to verify and validate reported performance.

Performance Measures and Goals

The report identifies six performance measures that EPA uses to gauge programs' accomplishments and success, and it specifies a goal for fiscal year 2000 for each measure. The measures and goals for the activities covered in the report are shown in table 1.

Table 1: Performance Measures and Goals for Climate Change Programs

Measure	Fiscal year 2000 goal
Reduced greenhouse gas emissions	58 million metric tons of carbon equivalent
Reduced nitrogen oxide emissions	More than 152,000 standard tons
Reduced sulfur dioxide emissions	220,000 standard tons
Reduced energy consumption	More than 59 billion kilowatt hours
Money saved on utility bills	\$8 billion
Number of participating organizations	Nearly 10,000

Source: EPA's report.

For these six measures, the report also provides—for the programs as a whole—actual results for fiscal years 1995 through 1998, as well as goals for fiscal years 1997 through 2000. These data establish trends over the 6-year period.

However, as noted above, the report generally does not explain how the six initiatives will contribute to EPA's fiscal year 2000 goals for these six measures. For greenhouse gas emissions, but not for the other five goals cited above, the report explains how the six initiatives will contribute. And, as noted above, the report provides information for only four of the six initiatives.

Strategies and Resources

The report provides some information on the strategies and resources EPA will use to achieve its performance goals in fiscal year 2000. With respect to strategies, the report provides inconsistent descriptions of program operations, actions, and activities. In some cases, EPA explains its strategy in clear terms. For example, the report says that in the commercial buildings area, EPA will sign up an additional 2,000 small business and school partners for its Energy Star Buildings Program. But in other cases, it is not clear what specific actions or activities EPA will undertake to achieve its goals. For example, in the transportation sector, the report states that EPA's Transportation Partners network will expand its existing efforts "through promoting the restoration of communities, collaboration among neighboring communities, and expanded public involvement." In addition, the network will encourage "better transportation decisions that help create more livable communities." It is unclear what specific actions EPA will take and how these actions will accomplish the stated objectives.

With respect to resources, the report provides, as noted earlier, information on the fiscal year 1999 funding level and the fiscal year 2000 request for each of the seven initiatives.

As shown in enclosure I, we calculated the changes in dollar amounts and the corresponding percentage changes for the seven initiatives and found that, while the total funding request represents an increase of 98 percent over the current fiscal year, the change varies considerably by initiative. For example, EPA is seeking an increase of 40 percent for international capacity building; about 100 percent for the buildings and transportation initiatives; and about 200 percent for the industry initiative. In terms of amounts, EPA is seeking a total increase of about \$107 million, ranging from \$2.1 million more for the state and local initiative to \$41.3 million more for the buildings initiative. Finally, EPA requested no fiscal year 2000 funds for research as part of the Climate Change Technology Initiative. This research effort received \$10 million in fiscal year 1999, but there is no explanation for this reduction.¹⁰

Checking Reported Performance

The report explains that the methods used to collect data and estimate programs' impacts vary from program to program, and it identifies two such methods. For the most part, EPA relies on reports from program participants and states that such reports are reviewed for accuracy and compared with trend data. For other programs, EPA calculates emissions reductions from industry reports of the volume of shipments of certain equipment (such as photocopiers), the proportion of such equipment that embodies EPA-approved energy-saving features, and other information. However, the report does not discuss in any detail the procedures used to verify and validate the measured values of actual performance and to ensure that its performance information is complete, accurate, consistent, and free of significant levels of error and bias.

Specifically, the report does not explain that the trends reported by program participants may reflect factors other than EPA's programs. For example, we noted in a 1997 report that reductions reported by participants in the Green Lights Program, which encourages energy conservation in buildings, could be due—in part—to other factors.¹¹ We noted that there were substantial upgrades of commercial buildings even before the Green Lights Program was well established, that electric utility companies had offered financial incentives to install energy-efficient lighting, and that many of the program's participants were in the lighting business and presumably knew of the financial and other advantages of energy-efficient upgrades.

¹⁰An EPA official said that the research activities that were shown as part of the Climate Change Technology Initiative in fiscal year 1999 were consolidated with other climate change research activities for fiscal year 2000.

¹¹See Global Warming: Information on the Results of Four of EPA's Voluntary Climate Change Programs (GAO/RCED-97-163, June 30, 1997). We reiterated the concern in a 1998 report for two reasons. First, according to EPA, the 2,500 participants in the Green Lights and Energy Star Buildings programs saved, on average, about \$200,000 each in 1997 as a result of their energy-saving actions. These savings are clearly an incentive—in addition to EPA's programs—to take such actions. Second, as part of the Oct. 1997 climate change proposal, the President suggested that companies be rewarded for taking voluntary actions to reduce greenhouse gas emissions. Although the nature or value of these rewards was not specified, they could be yet another factor outside EPA's programs that could encourage businesses and others to reduce their emissions. See Environmental Protection: EPA's Fiscal Year 1999 Budget Request (GAO/RCED-98-259R, Sept. 29, 1998).

An example illustrates the difficulty of attributing to an EPA program all the savings reported by a program participant. As a “success story” of the Waste Wise Program, the report states that Bank of America recycled 14,500 tons of office paper. (It takes less energy to recycle paper than to make new paper, thus saving energy and reducing greenhouse gas emissions.) The report implies that the company’s recycling is due entirely to EPA’s effort. However, according to a company official, the company began its recycling efforts before EPA began the Waste Wise Program and would recycle its paper even without the program. However, the official added that the program offers valuable assistance to the company, such as information on new products and an e-mail network, through which participating companies can share information on their recycling efforts, and that there are few other sources of such information. In commenting on our 1997 report, EPA said that it would study the issue of clearly accounting for the programs’ impacts. According to EPA, two such studies—both focusing on the buildings sector—are scheduled to be completed this fall.

Agency Comments

We provided a draft of this report to EPA for review and comment. EPA disagreed with four principal findings in the report, as discussed below. (Enc. II contains EPA’s comments and our detailed responses.) Also, EPA provided technical suggestions, which we incorporated as appropriate.

First, EPA said that its report is sufficiently comprehensive because it conforms to the Senate Committee report’s directive to discuss the programs that make up the Climate Change Technology Initiative. EPA’s explanation was already included in our draft report. However, as we noted in our draft report, the subsequent Senate floor colloquy did not limit the report’s scope in that way.¹² Instead, the colloquy called for “a more comprehensive explanation by the EPA of the components of its energy and environment programs” (emphasis added). Thus, in our opinion, limiting the report’s scope to the programs that make up the technology initiative was not fully responsive to congressional expectations. In fact, EPA chose to entitle its report, EPA’s Climate Change Activities, which suggests a comprehensive scope. Because EPA limited its report’s scope, the Committee did not receive information on climate change activities for which EPA requested about \$23 million for fiscal year 2000. Accordingly, we did not change our report.

Second, EPA said that its report was sufficiently detailed because it has consistently provided goals and accomplishments for climate change activities at the initiative level to comply with the Government Performance and Results Act. As we noted, the colloquy called for an explanation of “the components of [EPA’s] energy and environment programs” (emphasis added). Thus, in our opinion, reporting at the initiative level—rather than at the level of the programs that make up these initiatives—was not sufficient to meet the Committee’s needs. Moreover, by asking for this report, the Committee indicated a desire for more detailed information than was included in EPA’s previous reports at the initiative level. In addition, EPA states that it presented “detailed descriptions of activities at the program level” in the final chapter of its report. We note

¹²Regardless of the different views on this issue, the sufficiency of the information provided and the manner of its presentation are matters for the Senate Appropriations Committee to decide.

that the chapter describes the programs and some specific successes, but it does not provide consistent information on the amount of funding requested for fiscal year 2000 or expected program results. Accordingly, we did not change our report.

Third, EPA said that it provided appropriate information to justify its request for funding increases. However, as we read EPA's report and as we noted above, it discusses the expected results from the entire amount requested, rather than the increase requested, for fiscal year 2000. It does not provide information on the expected results from continuing funding at the current level, as distinguished from the increase in expected results from an increase in funding. Accordingly, we did not change our report.

Fourth, EPA questioned our finding that its report provided little information on the methods it uses to assure the quality of data on program results. It stated that it has a successful system for measuring performance, but it also stated that there are some difficult analytical issues in evaluating the success of voluntary programs and described two current evaluations of its programs' effectiveness. When these studies are completed, EPA will be more certain of the success of its current measurement system. By including such information in its report, EPA would have provided a fuller picture of its efforts to assure the reliability of its reported results. We did not change our overall characterization of EPA's data quality efforts because these studies are not yet complete and their impact on data quality is still unknown. We added information on the two current EPA studies in our report.

Scope and Methodology

To fulfill our objectives, we analyzed EPA's April 8 report (which we received on Apr. 15), its justification of estimates for its fiscal year 2000 budget request, and other documents, and we held discussions with EPA officials. We did not independently validate EPA's data. We conducted our review from April through July 1999 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the Honorable James T. Walsh, Chairman, and the Honorable Alan B. Mollohan, Ranking Minority Member, Subcommittee on VA, HUD, and Independent Agencies, House Committee on Appropriations; other interested Members of Congress; the Honorable Carol M. Browner, Administrator of EPA; and other interested parties. We will also make copies available to others upon request.

If you have any questions about this report, please contact me at (202) 512-6111. Key contributors to this report were David Marwick and James B. Musial.

A handwritten signature in black ink, appearing to read 'Peter F. Guerrero', with a long horizontal flourish extending to the right.

Peter F. Guerrero
Director, Environmental
Protection Issues

FUNDING FOR EPA'S CLIMATE CHANGE INITIATIVES

Dollars in thousands

Initiative	Amount enacted for fiscal year 1999	Amount requested for fiscal year 2000	Amount of increase (decrease)	Percentage increase (decrease)
Buildings	\$38,800	\$80,100	\$41,300	106
Transportation	31,750	61,900	30,150	95
Industry	18,600	55,600	37,000	199
Carbon Removal	--	3,400	3,400	^a
State and Local Climate Change	2,900	5,000	2,100	72
International Capacity Building	7,400	10,400	3,000	41
Climate Change Technology Initiative: Research	10,000	^b	(10,000)	(100)
Total	\$109,450	\$216,400	\$106,950	98

^aCannot be computed.^bNo funding was requested.

Source: EPA's data in the April 8 report for the amounts enacted and requested and our calculations based on EPA's data for the change in the amount of funding requested and the percentage change.

COMMENTS FROM THE ENVIRONMENTAL PROTECTION AGENCY



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

Mr. Peter F. Guerrero
Director
Environmental Protection Issues
U.S. General Accounting Office
Washington, D.C. 20548

JUL 12 1999

Dear Mr. Guerrero:

I appreciate the opportunity to review and comment on the draft GAO Report, Observations on EPA's April 1999 Climate Change Report. EPA prepared the April 1999 Report in response to the Senate report language (Senate Report 105-216), as reiterated by the colloquy between Senators Byrd and Bond. I have one overarching concern about GAO's analysis, which negates many of the conclusions in the report. My concern is that the report construes the Congressional directive to EPA much more broadly than is justified by the actual language of the Senate Report. It is disappointing that GAO criticizes EPA for not including information at a level of detail in EPA's April 1999 report to Congress that EPA believes was not actually requested by the report language or by the colloquies. We discussed this concern in our June 23 meeting.

See comment 1.

The Senate report language states:

On October 22, 1997, the President announced a three-stage proposal on climate change in anticipation of an international agreement to be negotiated 2 months later in Kyoto, Japan. With regard to programs pursued under the President's proposal, the Committee expects the EPA to comply with the letter spirit of the Government Performance and Results Act (GPRA). The Committee directs the Agency to provide the Committee with a detailed plan for implementing the President's proposal, which would include an performance goal for the reduction of greenhouse gases that has objective, quantifiable, and measurable target levels. The plan should provide substantial evidence on the effectiveness of implementing the President's proposal in facilitating compliance with binding greenhouse gas emissions reduction commitments contained in the international agreements negotiated on behalf of the United States. The Agency shall submit this plan to the Committee by December 31, 1998. The GAO is direct to prepare a report that evaluates the Agency's completed plan and submit its report to the Committee within 90 days after receipt of the Agency's plan. (Senate Report 105-216)

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EPA understands this language to be referring to the Climate Change Technology Initiative (CCTI) or the "President's proposal" for action on climate change outlined by President Clinton in his October 22, 1997 speech. The report language did not ask the Agency to report on the broader category of "its climate change activities" as GAO states in the first sentence of their July draft report. In our April 8, 1999 report, we included all of the information requested by the committee in a comprehensive and organized fashion, and we provided this information at the level of detail outlined in GPRA.

In the report, as well as in the 2000 Annual Plan, EPA complied with the letter and the spirit of the Government Performance and Results Act by providing detailed performance measures for each area of activity as outlined in GPRA, specifying requested funding levels, justifying requests for increased funding and ensuring that the performance information is complete and as accurate as possible.

GAO has organized the draft report by four general comments. These four general comments and EPA's responses are provided below:

I. GAO states that the "Report is not comprehensive and Provides Little Information at Program Level"

EPA believes the April 1999 Report provides comprehensive information regarding every EPA climate change initiative under the CCTI, as required by the GPRA, and also provides substantial program level information, even though such information was not necessary to comply with the Congressional directive. EPA did not provide information about climate change research because it is not part of the President's Proposal and therefore was not part of the Congressional request. EPA has provided, as requested, the funding level for each initiative (e.g. buildings, industry, etc.) and performance measures for each of the activities that will be undertaken, as well as detailed descriptions of activities to be undertaken with additional funding. In the GAO Draft Report, GAO says that "the Environmental Protection Agency's (EPA) report on its climate change programs is not comprehensive and provides little information about its programs' funding and expected results." EPA believes this statement is incorrect and, in the report, GAO has not identified the basis for this broad conclusion.

The Senate report language "directs the Agency to provide the Committee with a detailed plan for implementing the President's Proposal, which would include an annual performance goal for the reduction of greenhouse gases that has objective, quantifiable, and measurable target levels." As GAO acknowledges later in the draft report, EPA's report "provides performance measures and goals" and the "climate change activities are justified overall." For the Climate Change Technology Initiative, EPA has consistently provided goals and accomplishments at the initiative level, which is consistent with the GPRA requirements. GAO's criticisms that EPA does not present program by program contributions to the initiative 2000 goals is irrelevant to our compliance with the Congressional requirement, since these are not requirements under GPRA. Moreover, EPA does present detailed descriptions of activities at the program level in chapter 5.

See comment 2.

GAO also claimed that EPA did not justify Climate Change Research as one of the broad initiatives. As stated earlier, EPA understands the report language to refer to the Climate Change Technology Initiative or the “President’s proposal” outlined by President Clinton in his October 22, 1997 speech. Therefore, we do not believe that the report should have included Climate Research.

EPA’s interpretation of the language is a reasonable and straightforward interpretation of the report language, as further informed by the colloquy between Senators Byrd and Bond.

II. Second, GAO states the “Justification Provided for Total Funding Requested, but not for Fiscal Year 2000 Increases.”

GAO’s second comment of criticism is that EPA should have provided justification for the fiscal year 2000 funding increases by identifying the greenhouse gas reductions that will occur in 2000 as a result of such increased funding. As discussed at the June 23rd meeting, EPA believes that measuring the greenhouse gas reductions that will occur only in 2000 resulting from increased funding in 2000 would not provide any useful information that could help Congress or the public evaluate the benefits of the funding. It is unreasonable to expect programs of the type at issue here to produce significant greenhouse gas reductions during the same year the initiative is developed and launched. For any new initiative it can take several months to complete the program design and begin signing up partners, and then depending upon the terms of the particular voluntary agreements, the partners may take many more months or years to implement the efficiency improvements that reduce emissions of greenhouse gases. For this reason, the best approach to quantifying the benefits of the federal dollars spent is to analyze the benefits over several years, which EPA has done in the April 1999 report.

See comment 5

Again, on page 9 of the draft report, GAO criticizes EPA for not including information that EPA believes was not requested by the amendment language or the colloquy. GAO states that “For reductions in greenhouse gas emissions, but not for the other accomplishments, the [EPA] report also shows how the overall goal of 58 MMTCE is distributed for four of the six initiatives, as follows: buildings, 12.7 MMTCE; industry...” and on page 12 the draft report goes on to say that “the report generally does not explain how the six initiatives will contribute to EPA’s fiscal year 2000 goals for these six measures.” However, the report language directed “the Agency to provide the Committee with a detailed plan for implementing the President’s Proposal, which would include an annual performance goal for the reduction of greenhouse gases...” EPA met that request in our report by stating an overall goal for greenhouse gas reductions in 2000. As requested, EPA also included the annual greenhouse gas reductions for each initiative that contributes to the overall goal and the activities by which EPA will achieve each of these goals. For the other accomplishments such as energy saved, sulfur dioxide reduced and number of partners, EPA provided this information in aggregate for all initiatives for each year from 1995 through 2000 as cobenefits.

See comment 4.

On page 11 of the draft report, GAO notes that start dates for only some of the programs are included in the Agency's report and that "the report does not make clear which programs started after the Kyoto Protocol was agreed to." As written, the draft report may suggest to the reader that some of EPA's programs may implement the Kyoto Protocol simply by virtue of the fact that they were launched after the date of the Kyoto Protocol agreement. We would like to reiterate that none of EPA's programs implement the Kyoto Protocol, and this applies to programs launched both before and after the date of the Kyoto Protocol agreement. All of these programs are voluntary and they are designed to capitalize on opportunities to deploy technology more rapidly through the marketplace. These programs are working to fulfill the U.S. commitments under the Framework Convention on Climate Change ratified by the United States in 1992 and are in no way implementing the Kyoto Protocol prior to ratification.

See comment 5.

III. GAO's draft report states that "Climate Change Activities Justified Overall, but Not for Each Program."

EPA is pleased GAO found that we have justified our climate change activities overall. However, again we believe that Congress asked us to comply with "the letter and spirit of the GPRA," for the Climate Change Technology Initiative, and thus asked us to justify each of the initiatives in the CCTI, which we have done in the April 1999 Report.

See comment 6.

EPA disagrees with GAO's claim that "EPA's report does not provide justifications for the proposed funding increases for individual climate change programs for fiscal year 2000." In fact, chapter 4 of EPA's report lays out in detail the increased funding for each of the 6 program areas and explains, for each area, a justification for the increased spending (section 4.3). The activities resulting from the increased funding are as specific as the number of products that will be eligible to use the ENERGY STAR Label in 2000 and the number of commercial buildings that will qualify for the ENERGY STAR Label in the Buildings Programs. In the Industry Programs, EPA specifies a number of very specific activities that EPA would pursue with the additional funding and the environmental benefits associated with these activities. For example, EPA's report states that expanding the Climate Wise Program, would result in reductions of about 50 million metric tons of carbon dioxide (13 MMTCE) annually and savings of \$1.6 billion per year by 2010. This section of EPA's report very clearly and specifically justifies the proposed funding increases, which are laid out in Table 3 of the EPA report. Chapter 5 of EPA's report supplements this information with program-by-program details of activities, accomplishments and goals.

IV. Finally, GAO states that the "Report Provides Performance Measures and Goals, But Data Quality is Unclear."

In this section of GAO's draft report, GAO notes again that performance measures other than greenhouse gas reductions are not broken down by initiative. As stated previously, EPA met the Congressional directive for the report by stating an overall goal for greenhouse gas reductions in 2000. As requested, EPA also included the annual greenhouse gas reductions for

each initiative that contributes to the 2000 overall reduction goal and the activities by which EPA will achieve each of these goals. For the other accomplishments such as energy saved, sulfur dioxide reduced and number of partners, EPA provided this information in aggregate for all initiatives for each year from 1995 through 2000 as cobenefits.

GAO notes on page 13 that the report would have been more “useful if it had calculated the changes in dollar amounts and the corresponding percentage changes for the seven initiatives.” EPA did not calculate the changes in dollar amounts in the April report in order to avoid redundancy with the 2000 Annual Plan. However, by looking at Table 3 of EPA’s report, GAO was able to easily calculate these figures.

GAO criticizes EPA’s methods of estimating the accomplishments and the quality of the data presented in EPA’s report. Specifically, GAO points out that “the report doesn’t explain that trends reported by program participants may reflect factors other than EPA’s programs.” With respect to “checking reported performance,” EPA has developed a successful and extensive system of performance measures and program evaluation. EPA devotes considerable effort to obtaining the best possible information upon which to evaluate the programs. For example, EPA reports the results of the ENERGY STAR Buildings and Green Lights Partnership based exclusively on detailed reports submitted by the program’s partners on many thousands of completed projects around the country, and EPA has a quality assurance process in place to check the validity of the partner reports. Thus, EPA has high confidence in the accuracy of the data reported by the partners.

See comment 7.

EPA has also always recognized that there are some difficult analytical issues in using such data, however accurate in itself, to evaluate the success of voluntary, market-based programs. Thus, EPA takes these analytical issues into account when evaluating its climate programs. EPA has discussed these issues with your staff. There is some uncertainty, for example, in isolating the effects of a program such as ENERGY STAR Buildings and Green Lights Partnership from other factors within the market. Currently, EPA has two in-depth market evaluations underway to reduce this uncertainty and provide additional information regarding the accomplishments and effectiveness of the Green Lights Program and the ENERGY STAR Labeling Program. These evaluations are scheduled to be completed in the fall of 1999. Preliminary evidence indicates that EPA is handling analytical uncertainties in a manner that avoids overestimating program benefits. For example, in the Green Lights Program, in a conservative estimate, it appears that the effects of free riders (entities who would have taken a program action even if the program did not exist) and the effects of free drivers (entities who contribute to the program activities and take advantage of program offerings without formally joining the program, therefore, whose activities are not counted toward program benefits) would likely offset each other on a kilowatthour basis. EPA believes that the current methods used across all of the climate programs for evaluating overall impacts are based on sound data and analytical assumptions, and that, in general, EPA’s estimates of the program results are conservative.

EPA is working to ensure that its performance information is complete, accurate, consistent, and free of significant levels of error and bias. These efforts and the efforts of other programs have provided maximum accountability and valuable information for program development. EPA's performance measures have been reviewed in detail by GAO staff in the past. We have presented this information consistently in our Annual Plan for 2000 as well as our April 1999 report to Congress.

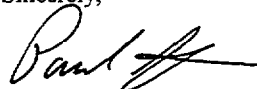
In addition the following comments identify additional discrepancies in the GAO draft report:

GAO claims that the information that is provided in the report is not well integrated, because "the report does not explain how [the] 11 program groups or programs relate to the six initiatives around which the report is generally organized." However, EPA presented the information in a consistent manner throughout the report and each program is clearly categorized by program area or initiative in chapter 4. GAO demonstrated this in its own report by synthesizing the information in the EPA April 1999 Report and presenting it as Figure 1. See comment 8.

In the "Background" section, on page 4, GAO states that EPA's programs to encourage businesses and others to voluntarily reduce energy use and otherwise curb their emissions of greenhouse gas emissions now include seven programs which GAO has enumerated by bullets. However, GAO neglected to mention any of the other 8 programs included in the EPA report and in Figure 1 of the GAO draft report. See comment 9.

We have some additional more detailed comments that my staff will provide separately. Thank you for the opportunity to comment.

Sincerely,



Paul M. Stolpman, Director
Office of Atmospheric Programs

COMMENTS FROM THE ENVIRONMENTAL PROTECTION AGENCY

The following are GAO's comments on the Environmental Protection Agency's letter dated July 12, 1999.

GAO's Comments

1. We differ from EPA in our reading of the Committee report language and the subsequent Senate floor colloquy as they pertain to the desired scope of EPA's report. In its letter, EPA cites only the Committee report as the basis for the scope of its report. We agree with EPA that the Committee report language mentioned the Climate Change Technology Initiative and, if there had been no subsequent colloquy, the scope of EPA's report would have been appropriate. However, the colloquy restated and elaborated upon the Committee report and, in EPA's report, the agency also recognizes that the colloquy "modified" the Committee report. The colloquy called for "a more comprehensive explanation by the EPA of the components of its energy and environment programs" (emphasis added). Thus, it did not mention the technology initiative, but, instead, called for a "more comprehensive" explanation of the agency's climate change activities. Finally, we note that EPA entitled its report, EPA's Climate Change Activities, which does not suggest that the scope was limited to activities that are part of the technology initiative. Accordingly, EPA's report should have covered all of its climate change programs—including the efforts for which EPA requested \$23 million for fiscal year 2000—or, at a minimum, should have explained why it did not do so.
2. We differ from EPA in our reading of the colloquy as it pertains to the desired level of detail of EPA's report. In its letter, EPA states that it provided, as requested, "the funding level for each initiative and the performance measures for each of the activities that will be undertaken...." EPA also states that it has "consistently provided goals and accomplishments at the initiative level...." However, we note that the colloquy calls for an explanation of "the components of [EPA's] energy and environment programs" (emphasis added). Moreover, by directing that EPA prepare this additional report, the Committee indicated a desire for more detailed information than was included in EPA's previous reports at the initiative level. Also, EPA asserts that it provided program-specific information in chapter 5. However, we note that the chapter describes the programs, but it does not provide consistent information on the amount of funding requested for fiscal year 2000 or expected program results.
3. The colloquy directed EPA to provide "any justification for funding increases" (emphasis added). EPA's report estimated the benefits—for example, in terms of reduced emissions of greenhouse gases—that will result from the full amount of funding requested for fiscal year 2000. However, it does not estimate the benefits that would result from an increase in funding, as contrasted with the benefits that would result from continuing funding at its current level. EPA also states that it would be unreasonable to expect these programs to produce significant results during their first year. We understand that, for programs like these, spending in one year may yield results over a period of years. Therefore, contrary to EPA's suggestion, we did not state that EPA should report the estimated results for fiscal year 2000 alone that would occur from increased funding in that year. Rather, we noted that

ENCLOSURE II

EPA did not provide estimates of the results (which might occur over a period of years) from an increase in funding for fiscal year 2000.

4. In its letter, EPA explains why it presented estimates of fiscal year 2000 benefits at the initiative level for reductions in greenhouse gas emissions, but presented estimates of total benefits for the other five performance measures. EPA notes that the Committee report specifically asked for expected results in terms of emissions reductions. We have modified our report to reflect EPA's reason.
5. In its letter, EPA states that our report may imply that some of its programs may implement the Kyoto Protocol on climate change. EPA reiterates that none of its programs—regardless whether started before or after the protocol was agreed to—is intended to implement the protocol. We did not mean to suggest anything about implementing the protocol. Rather, we meant to suggest that EPA's presentation itself could lead to questions. EPA's report states that most—but not all—of its climate change programs were started before the protocol was agreed to and it provides start dates for many—but not all—of its programs. By not providing such information for some of its programs, EPA's report could have raised questions.
6. This section of our draft report dealt with the legal basis for EPA's climate change activities, not the justification of funding. See comment 3.
7. In its letter, EPA discusses some of the issues involved in determining the effectiveness of its programs and states that it has evaluations under way to better understand the effect of two of its programs, both in the buildings sector. We agree that such evaluations have value. By including this type of information in its report, EPA would have alerted readers to some of the issues relating to data quality and would have presented a fuller picture of its efforts to assure the reliability of its reported results.
8. EPA claims that "each program is clearly categorized by program area or initiative in chapter 4." We disagree. For example, we found no mention in chapter 4 of the Waste Wise Program or the five methane programs, all of which are described in chapter 5. In fact, as we noted in our draft report, the presentations in chapters 4 and 5 are inconsistent. We prepared our Figure 1 to show the relationships between initiatives, program groups, and programs because EPA's report does not do so and because we thought such a graphic would be helpful to readers of both EPA's report and our report.
9. EPA asserts that we "neglected to mention" some of its programs in the background section of our report. By way of illustration, we described several of EPA's programs because we referred to them later in the report. We clarified our report to make clear that the programs cited are only some of EPA's programs.

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