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Resources, Community, and
Economic Development Division

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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 March 2000 Climate Change Report

In a September 1999 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 2000.[1] The Committee also directed us to evaluate EPA's report and to submit our evaluation to the Committee within 90 days of receiving the agency's report. This is the second consecutive year that EPA has been directed to prepare such a report and that we have been directed to evaluate that report.

The Committee directed EPA to explain its plan and activities for implementing the President's October 1997 proposal on climate change, called the Climate Change Technology Initiative. That proposal was made 2 months prior to an international conference on climate change, which 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 would amend a 1992 international agreement on climate change--which the Senate did ratify--but the Protocol has not been submitted to the Senate for ratification.

[1]S. Rep. No. 106-161, at 84 (1999).

As directed, we reviewed EPA's report[2] to determine the extent to which it provides the following information specified by the Committee: (1) a comprehensive explanation of the agency's climate change programs for fiscal year 2001; (2) a description of the programs' goals, strategies, and procedures to verify and validate performance information; (3) a justification for requested funding increases; and (4) an explanation of how the programs are justified independently of the Kyoto Protocol. For each of these areas, we also evaluated how EPA responded to the Committee's directive to make its current report consistent with the observations we made last year.[3]

**Results in Brief**

EPA's March 2000 report on its climate change activities is generally comprehensive and explains the activities for which EPA is seeking $258 million for fiscal year 2001. Compared with last year's report, the current report is more inclusive, and it also explains how the many individual programs relate to broader program groups and still-broader sectors and areas (see table 1, p. 8). Unlike last year's report, which did not discuss two of EPA's major climate change areas, the current report generally includes all of the major sectors and areas included in EPA's fiscal year 2001 budget justification for its climate change activities. Moreover, unlike last year's report, the current report includes a table that shows how the 26 individual programs relate to 8 program groups and how the 8 program groups relate to 3 key sectors and 5 other broad areas. The current report provides information on requested funding and expected results at the program group level but—like last year's report—not at the individual program level.

EPA's report uses reductions in greenhouse gas emissions as the principal yardstick for measuring the success of its climate change efforts. Compared with last year's report, the current report provides more information about the efforts to verify and validate the programs' performance, but, again, it provides little information at the individual program level on goals and objectives. Unlike last year's report, the current report provides information on two ongoing studies that are designed to validate the specific benefits attributable to EPA's programs.

EPA's report provides a justification for the requested $125.8 million increase in funding for its climate change activities overall as well as the funding increases requested for all three key sectors and four of the five broad areas. Compared with last year's report, the current report provides more detail on two topics, but it does not provide needed detail on a third topic. First, it provides information on the incremental benefits expected to be achieved from an increase in funding

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[2]*Report to the Senate Appropriations Committee Regarding EPA's Climate Change Activities*, transmitted to the Committee on Friday, March 3, 2000, and to us on Monday, March 6.
[3]*Climate Change: Observations on EPA's April 1999 Climate Change Report* (GAO/RCED-99-235R, July 14, 1999).

for those activities that are aimed at reducing greenhouse gas emissions. In contrast, last year's report provided information on only the total benefits expected to result from the total amount of funding requested. Second, the current report provides information, in many cases, on additional activities expected to result from full funding. For example, it notes that full funding will allow the Landfill Methane Outreach Program to assist 225 landfills in developing gas-to-energy projects, versus 205 landfills at the current funding level. Last year's report did not provide such information on activity levels. Last, the current report, like last year's, does not specify funding levels or expected benefits at the individual program level. For example, it states that, collectively, the five programs that comprise the Methane Program Group within the Industry Sector are expected to reduce emissions by an additional 1.1 million tons in fiscal year 2001, relative to the current fiscal year. However, it does not show how much of that reduction is attributable to the Landfill Methane Outreach Program and to each of the other four methane programs in this program group.

EPA's report explains that its climate change activities are legally justified by long-standing agency goals and objectives and are not intended to implement the 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 nine specific environmental laws. This year's report, unlike last year's, provides a linkage between the major categories of EPA activities and the nine specific laws.

EPA disagreed with one of our principal findings related to the level of information provided on requested funding and estimated benefits. EPA said that its report included all the information requested by the Committee and that it complied with the Results Act. We note that complying with the Results Act was only part of the Committee's directive to EPA. Because EPA did not provide information on funding and results at the *individual program* level, we believe that EPA did not provide information in sufficient detail to satisfy the Committee.

**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 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 is conventionally 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 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 take other measures to curb their emissions of greenhouse gases. These programs now include the following:

- The Energy Star Buildings and Green Lights Partnership encourages improved energy efficiency in commercial, industrial, and other buildings in the private and public sectors.

- The Partnership for a New Generation of Vehicles involves seven federal agencies and an automobile industry research consortium in, among other things, developing vehicles with low emissions and far greater fuel efficiency than current comparable vehicles.[4]

- The Ruminant Livestock Outreach and AgSTAR programs aim to increase the efficiency of livestock production and waste management while decreasing the amount of methane produced as by-products.

- The Combined Heat and Power Program promotes improved efficiency in energy generation through the recovery and beneficial use of heat that is (1) generated in producing electric and other forms of power and (2) otherwise rejected to the environment through cooling towers and to waterways.

- The Transportation System Efficiency programs involve EPA partnerships with other federal agencies and with state and local governments and transportation authorities to support voluntary regional, state, and community efforts that encourage greater travel choices and alternatives to single-occupancy vehicle driving to reduce greenhouse gas emissions and other transportation-related pollutants.

- The Waste Wise Program works with businesses, government units, and other institutions to reduce municipal solid waste by offering alternatives that reduce waste generation, promote recycling, and encourage the buying and manufacturing of recycled products.

The Framework Convention went into effect in 1994. However, by 1995, the parties to the Convention realized that insufficient progress was being made toward its goals and therefore decided to begin negotiations on a legally binding protocol. In October 1997, in anticipation of an international conference in

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[4]For more information on this partnership, see *Cooperative Research: Results of U.S.-Industry Partnership to Develop a New Generation of Vehicles* (GAO/RCED-00-81, Mar. 30, 2000).

December of that year, 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 2008 through 2012 for developed countries. The United States has signed the Protocol but has not ratified it, which requires the advice and consent of the Senate.

**Discussion of Climate Change Activities in EPA's Current Report Is Generally Comprehensive and More Detailed Than Last Year's Report but Omits Important Information on Individual Programs**

As directed by the Committee, EPA's report generally provides a comprehensive explanation of the agency's climate change activities. The current report represents an improvement over last year's report because it is more inclusive and it shows how EPA's numerous individual programs relate to broader program groups and to still-broader sectors and areas. The current report provides more information on program groups than last year's report, but–like last year's report–it provides little information on the funding being requested for individual programs or on the expected results of those programs.

EPA's current report includes all of the agency's major climate change sectors and areas; explains the overall objectives of these sectors and areas; describes–with one exception–the components of the overall climate change effort; and discusses (again, with one exception) the types of activities that are carried out within the sectors and areas. For example, the report explains–both in tabular and narrative form–the agency's major climate change sectors and areas and the program groups and the individual programs of which they are composed. The report provides extensive narrative information, including information on the background, rationale, operations, past successes, and anticipated accomplishments for the major components of the overall climate change effort. For example, it provides such information for key sectors (such as Buildings, Industry, and Transportation) and for selected program groups within these sectors (such as Energy Star programs in the Buildings Sector and Transportation System Efficiency programs in the Transportation Sector).

The lone exception to the report's thoroughness in describing key program sectors/areas is the lack of an explanation of the Partnership With Industrial and Other Countries, for which EPA is requesting about $660,000 (approximately 0.3 percent of the total) for fiscal year 2001. Although EPA cites the Partnership as a "key program" in the current report and in its budget justification, the Partnership is not discussed in either document.

Last year, we noted that EPA included only seven of nine broad sectors/areas listed in the agency's fiscal year 2000 budget justification. The two omitted areas

accounted for about 10 percent of the funding requested that year for climate change activities. The current report includes all of the major sectors/areas included in the fiscal year 2001 budget justification.

Last year, we also noted that the information in various sections of the report was not well integrated and sometimes seemed to be inconsistent. This year, EPA included a table that graphically portrays the relationships between individual programs, broader program groups, and still-broader sectors/areas. Table 1 shows how the 26 individual programs relate to 8 program groups and how the 8 program groups relate to 3 key sectors and 5 other broad areas. Also, we did not note any material inconsistencies within the report.

The current report provides more narrative information on individual programs, but–like last year's report–it provides little quantitative information regarding the funding of these programs or the specific contributions that they are expected to make to help attain key goals. For example, the Industry Sector consists of 16 individual programs that cover electric power generation, livestock production, metal smelting, and other industries and are aimed at reducing carbon dioxide, methane, and other greenhouse gas emissions. EPA is requesting $63.7 million (about 25 percent of the total budget request) for the Industry Sector, which is expected to provide 64 percent of the fiscal year 2001 reductions in greenhouse gases. However, despite the scope, diversity, and importance of this sector, the current report does not provide information on the funding for and expected results of this sector's 16 constituent programs.

Table1: EPA's Individual Programs, Program Groups, and Key Sectors and Areas

| Key sector/area | Program group | Individual program |
|---|---|---|
| 1. Buildings | 1. Energy Star programs | 1. Energy Star Buildings and Green Lights Partnership |
| | | 2. Energy Star labeled products |
| | | 3. Energy Star homes |
| | 2. Supply-focused programs | 4. Clean Power |
| 2. Industry | 3. Carbon reduction programs | 5. Climate Wise |
| | | 6. Combined Heat and Power Initiative |
| | | 7. Clean Power |
| | | 8. Industry consultations |
| | | 9. Waste Wise |
| | 4. Methane programs | 10. Natural Gas Star Program |
| | | 11. Landfill Methane Outreach Program |
| | | 12. Coalbed Methane Outreach Program |
| | | 13. Agricultural programs (Ruminant Livestock Outreach and AgStar) |
| | | 14. Landfill rule |
| | 5. Programs to reduce gases with high global warming potential | 15. Voluntary Aluminum Partnership Program |
| | | 16. PFC Partnership for the Semiconductor Industry |
| | | 17. SF6 Partnership for Electric Power Systems |
| | | 18. SF6 Partnership for the Magnesium Industry |
| | | 19. Partnership With HCFC-22 Manufacturers |
| | | 20. Significant New Alternatives Program |
| 3. Transportation | 6. Transportation System Efficiency | 21. Commuter Choice Initiative |
| | | 22. Voluntary Demand Management Partnerships |
| | 7. Partnership for a New Generation of Vehicles | 23. Advanced Light Duty Engine |
| | | 24. Advanced Mechanical-hybrid Drivetrain |
| | | 25. Environmental Sport Utility Vehicle |
| | 8. 21st Century Truck | 26. Line-haul Truck, Urban Delivery Truck, and Urban Bus Initiatives |
| 4. Carbon Removal | | |
| 5. State and Local Outreach | | |
| 6. International Capacity Building | | |
| 7. Global Change Research | | |
| 8. Partnership With Industrial and Other Countries | | |

Legend:
HCFC = hydrochlorofluorocarbons
PFC = perfluorocarbons
SF6 = sulfur hexafluoride

Source: Based on table 1 in EPA's report, as modified to show the Partnership With Industrial and Other Countries. We deleted the identification of certain programs as initiatives for fiscal year 2001, and, in some cases, we abbreviated program names.

Although the Committee called for EPA's report to be included as part of the agency's fiscal year 2001 budget request, the report was submitted 4 weeks late. Specifically, EPA's budget request was transmitted to the Congress on February 7, 2000, but the Committee was not provided with the current report until March 3, 2000. This represents an improvement over last year, when the agency's report was over 2 months late, but the delay still means that this information was unavailable during the early stages of the budget deliberation process. EPA officials told us that the report was delayed because internal reviews and interagency coordination took longer than anticipated.

**EPA's Report Provides Overall Outcome Measures and Goals but Not for Individual Programs**

As directed by the Committee, EPA's current report provides information on ways in which success will be measured. For the primary measure—reduced greenhouse gas emissions—the report specifies annual goals for three sectors and one area and for some program groups, but it does not specify goals for other program groups or for individual programs. It also provides information about the status of efforts to better determine the incremental benefits of EPA's climate change programs.

The current report represents an improvement over last year's report in two respects. First, it provides more detail on expected reductions in emissions by providing emissions reduction goals for the program groups that make up the Industry Sector. Second, it provides a fuller description of EPA's efforts to verify the results of its programs. However, like last year's report, the current report does not provide information on the expected achievements at the individual program level. In addition, the strategies for the various areas and their constituent program groups and individual programs are not consistently presented nor does the report provide a clear vision of how they contribute to the overall objectives.

The Committee instructed EPA to include information in its report similar to that required by the Government Performance and Results Act (Results Act). Under the act, agencies are required to develop annual performance plans that describe their

- annual performance goals for programs, including the outcomes of program activities, and performance measures to assess progress in achieving program goals;
- resources and strategies, including coordination with other agencies, to be used to achieve program goals; and
- methods used to verify and validate data on the performance measures.

Performance measures and goals are usually expressed either as outputs or as outcomes. *Outputs* are typically activities–including their products–that an agency undertakes to implement its programs. For example, activities to increase the number of industry partners for a particular program would be an output measure. In contrast, *outcomes* are the results of those activities or efforts. For example, the reduction of greenhouse gas emissions achieved as a result of agency activities would be an outcome measure.

Performance Measures and Goals

EPA's report includes information on performance measures and goals similar to that required by the Results Act. The report identifies four key performance measures that the agency uses to evaluate the success of its climate change

programs. Two of these measure the outcomes of program activities, while the other two measure outputs–the levels of program activity. The primary measure relates to an outcome–the volume of greenhouse gases that would otherwise have been emitted but were not emitted because of EPA's climate change programs. The overall program goal for fiscal year 2001 is a reduction of 66 million tons in the level of emissions that would have been anticipated in the absence of EPA's efforts. The other program measures are reduced energy consumption by households and industry (an outcome measure) and various activity measures.

The report presents goals for emission reductions for all three sectors (Buildings, Industry, and Transportation) and for one of five key areas (State and Local Outreach). It also presents emission reduction goals for fiscal year 2001 for several program groups within sectors. For example, the report shows that the goal for the Industry Sector is 42.4 million tons. It also shows the goals for the three program groups within that sector, for example, 9.1 million tons for the Carbon Reduction program group. However, the report does not show the amount of the reduction attributable to the individual programs within these program groups, for example, for the Waste Wise Program and the four other programs that comprise the Carbon Reduction program group.

Likewise, the report states that the programs, overall, will result in saving 70 billion kilowatt hours of energy. It credits this saving to the Buildings Sector and to the Carbon Reduction program group under the Industry Sector.[5] However, the report does not specify the energy savings for individual programs. (Energy savings are not a goal for other areas or program groups.)

Other primary performance measures are stated in terms of activities to be accomplished rather than overall program objectives. One measure is progress toward developing a highly fuel-efficient sedan as a part of the Partnership for a New Generation of Vehicles, a program group within the Transportation Sector. Another measure is progress in working with 10 to 12 developing and other countries on two fronts–reducing greenhouse gas emissions in the International Capacity Building area and enhancing carbon sequestration in the Carbon Removal area. Additional measures–such as reduced emissions of certain pollutants, consumer savings on utility bills, and the number of program participants—are also provided, generally at the sector/area level or program group level.

Strategy, Resources, and Coordination

With respect to strategy, the report states that the bulk of the agency's climate change efforts rely on voluntary government-industry partnership programs to overcome market barriers impeding the development of, and investment in,

[5] These programs have both an energy savings goal and a carbon reduction goal.

energy-efficient products and practices. EPA's current strategy is to expand its existing programs and begin new programs in areas of the greatest potential. The strategy includes a research component to help stimulate advances in energy-efficient technologies, to support carbon sequestration activities, and to assess the effects and potential consequences of global climate change.

However, the strategies for the various sectors/areas and their components are not consistently presented in EPA's report. EPA later stated that it presented more information for some activities than for others because of the differences in their maturity and implementation structures. The strategies for some sectors/areas and program groups are presented as lists of activities that have been or will be undertaken. These are generally stated in terms such as *program participation*, *project development*, and *assistance to stakeholders*. Although the report lists the activities (outputs) considered necessary to achieve the goals of the Building and Industry Sectors, it does not provide a comparable list for the Transportation Sector. For example, while the report explains the goals of the Transportation System Efficiency Program Group, it does not explain how these goals relate to the two programs that comprise the program group, nor does it provide activity levels for the two programs. Although the strategies for individual programs can be inferred from their activities, the report does not provide a clear vision of how these activities will contribute to the overall objective by linking them to the overall performance goal of reducing greenhouse emissions. As noted elsewhere, although the report provides estimates of the benefits expected for certain program groups, it does not provide such information for the individual programs that comprise these program groups.

With respect to resources, as noted above, the report does not specify the funding levels for individual programs. For example, while the report states that $65.1 million is being requested for the Transportation Sector, it does not specify the amount of funding requested for the Partnership for a New Generation of Vehicles.

Finally, with respect to coordination, the report identifies areas of cooperation with other federal agencies and program participants, but it provides little information on the nature, manner, and extent of the coordination; the relative roles of the stakeholders, including the various agencies and industry groups involved; or their financial commitment. For example, the report indicates that there is coordination with both the Departments of Energy and Transportation in the Transportation Sector; however, the report does not provide sufficient information to understand either the respective roles of the agencies involved or the extent of their funding for these programs. Nor does the report provide information on the extent to which the results of programs, such as the development of highly efficient cars and trucks, might have been achieved by the automotive industry without these programs.

Verifying and Validating Performance

The report states that EPA relies on emissions reductions and energy savings wherever feasible to evaluate program performance and that the agency uses a variety of methods to derive its estimates and infer their impact on the market. These methods can vary by program, but reports from program participants are often the source of the data used in these estimates. The report, however, does not discuss the procedures used to verify the quality of the data or to ensure the validity of the analytical methods used to estimate the effects of EPA's programs. While EPA's report acknowledges the difficulty of estimating the degree to which external factors could influence their estimates, it does not attempt to provide a range or confidence level for the estimates provided.

Recognizing the limitations of the current approach, the report notes that EPA is moving to a new method of measuring performance. This method, known as *market evaluation*, involves the use of surveys and focused questions to obtain information that allows the measurement of changes in the market resulting from EPA's programs. A market evaluation of the Green Lights Partnership,[6] which is based on the purchase and use of energy-efficient fluorescent lights and initially scheduled to be completed in the fall of 1999, is currently undergoing peer review and is expected to be released in July 2000. EPA also plans to conduct market surveys to help evaluate the effectiveness of its Energy Star Labeling Program.

**EPA's Report Justifies Funding Increases for Sectors/Areas and for Key Program Groups but Not for Individual Programs**

In response to the Committee's directive to justify any funding increases requested for its climate change programs, EPA's report provides information on the funding requested for all three sectors and five areas that make up its climate change effort, as well as on the benefits expected to result from sectors and some areas and on the activities to be undertaken for most other areas. The current report represents an improvement over last year's report, which provided information on expected benefits only for four of the seven sectors/areas it covered. However, neither report provides information on funding and benefits at the individual program level.

For all sectors and areas, the report provides information on funding for fiscal years 2000 and 2001. For example, it shows how the requested amount of $258 million for the latter year is distributed among them. For the three sectors and one area that are intended to reduce greenhouse gas emissions, the current report also provides information on how the overall reduction of 66 million tons is distributed. For example, for the Buildings Sector, the requested funding is $80.1 million, while benefits are expected to be 15 million tons. The report

[6]The Green Lights Program has been merged into the Energy Star Buildings Program. The combined effort is now called the Energy Star Buildings and Green Lights Partnership.

implies, but does not state directly, that an increase in funding may take several years to produce increased benefits.

To demonstrate the longer-term benefits of the requested increases in funding, the report presents data on the estimated benefits expected from 2001 through 2010 if the requested fiscal year 2001 level of funding is provided. Specifically, it shows that the estimated benefits would total 335 million tons and that the amount attributed to the Buildings Sector, for example, would be 115 tons.

For three of the other four areas, none of which is intended to effect short-term reductions in greenhouse gas emissions, the report provides nonquantitative information on expected results in fiscal year 2001 (see bulleted items.) However, the report does not indicate the extent to which these activities represent an increase over current levels.

- For the International Capacity Building Area, requested funding is increased from $5.6 million to $10.6 million. The report states that this funding level will support efforts to assist 10 to 12 developing countries and countries with economies in transition to develop strategies and actions for reducing greenhouse gas emissions and enhancing carbon sequestration. The report does not indicate how many of these countries would be helped if funding were not increased.

- For the Carbon Removal Area, requested funding is increased from $1 million to $3.4 million. The report states that this funding level will accomplish several purposes, including working with the U. S. Department of Agriculture to make a strong case to support carbon sequestration activities. The report does not indicate whether these activities would be conducted without the additional funding.

For the final area—Partnership With Industrial and Other Countries–the report shows that the requested funding is increased from about $430,000 to about $660,000. However, the report provides no information on the benefits expected to result from this spending nor on the activities to be undertaken.

For the individual programs that comprise the Buildings, Industry, and Transportation Sectors, the report provides various measures of activities in fiscal year 2001. For example, the report states that the requested (but unspecified) increase in funding will enable

- the Energy Star Buildings and Green Lights Partnership to work with building owners and managers to evaluate and rate the energy efficiency of an additional 10,000 buildings–twice as many as those under the current funding level–and

- the Climate Wise Program to recruit 100 new partner companies–twice as many as under the current funding level .

But the report provides no comparable information on requested funding and expected emissions reductions in fiscal year 2001.

In addition, the report states that the programs, in total, will achieve other benefits, such as reducing U.S. energy consumption from projected levels by more than 70 billion kilowatt hours annually and reducing emissions of nitrogen oxides and other air pollutants. But it does not specify the amounts of these reductions that are attributable to the various sectors and areas.

Finally, the report provides information on the longer-term benefits of these climate change activities for 2001 through 2010. It states that the requested increase in funding will yield additional benefits, including reducing greenhouse gas emissions by 335 million tons over that time period. But the report does not indicate the share of the total benefits to be provided by the individual programs within program groups and key sectors/areas.

Last year, we reported that EPA provided information to justify the *total* amount requested for climate change programs for fiscal year 2000 but did not provide information to justify the requested *increase* in funding for that year. That is, EPA did not explain what it would achieve incrementally, in terms of reduced emissions of greenhouse gases and other key goals, as a result of the requested fiscal year 2000 funding increase. The current report represents an improvement because, as noted above, it provides information on funding for fiscal years 2000 and 2001 to show how the overall increase of $125.8 million is distributed among the three sectors and five areas. It also provides benefit estimates for the three sectors and one area that are intended to effect the bulk of reductions in greenhouse gas emissions, although—like last year–the current report does not provide information on incremental benefits at the individual program level.[7] Moreover, as noted above, for the remaining four areas, the report does not explain how activity levels will be affected by the incremental funding.

**EPA's Report Explains the Legal Bases for EPA's Climate Change Programs**

The current report explains that EPA's climate change programs are justified by a 1992 convention on climate change and by nine specific environmental statutes. The current report is more complete than last year's report because it provides a linkage between the major groups of EPA programs and the nine specific laws. However, like last year's report, this year's report does not explain the commitment made under the 1992 convention, and it provides information on start dates for some, but not other, programs.

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[7]EPA's report, on page 14, erroneously states that the agency is requesting a $117 million increase in funding for its climate change technology programs for fiscal year 2001. The amount of the requested increase over the prior year's funding is *$124 million.*

The current report lists from 3 to 5 laws as the primary statutory authorities for 12 of the 13 program groups or key sectors/areas. For example, it lists three laws that justify the Energy Star Program group and five laws that justify the Global Change Research Area. This represents an improvement over last year's report, which, we noted, did not specify which laws provide the basis for which program areas and groups. The report does not explain the legal basis for the Partnership With Industrial and Other Countries.

Of the nine laws, three are cited for all or nearly all of the program groups. Specifically, the Clean Air and Global Climate Protection Acts are cited as a basis for 12 program groups or sectors/areas, and the Pollution Prevention Act is cited as a basis for 10 program groups or sectors/areas. In contrast, the Clean Water Act, National Climate Program Act, and four other laws are cited for one or two program groups each. This year's report also specifies which sections of these laws apply to each program group, which represents another improvement over last year's report.

Like last year's report, the current report does not explain the significance of the international Convention. As we noted last year, under the United Nations Framework Convention on Climate Change, which was ratified by the Senate in 1992, the United States committed to undertake measures to reduce greenhouse gas emissions to their 1990 level by 2000. According to the most recent estimate, U.S. greenhouse gas emissions in 1997 equaled about 1,605 million tons of carbon equivalent, almost 22 percent higher than the 1990 level of 1,321 million tons.

Finally, by presenting incomplete information on program start dates, last year's report may have raised questions about whether certain programs may have started after the negotiation of the Kyoto Protocol. This year's report also provides start dates for some, but not other, programs, and it is not clear why it provides this information inconsistently.

**Agency Comments**

We provided EPA with a draft of this report for review and comment. EPA disagreed with one of our principal findings and with certain other aspects of our analysis. (Enclosure I contains EPA's comments and our detailed responses.)

EPA disagreed with our finding that its report should have provided information—at the individual program level–on requested funding and estimated benefits. EPA said that its report included all the information requested by the Committee and that it complied with the Results Act. However, complying with the Results Act was only part of the Committee's directive to EPA. Because EPA did not provide information on funding and results at the individual program level, we continue to believe that the information EPA provided fell short of what was requested by the Committee.

Our conclusion that the Committee is seeking information at the individual program level is based on the following. First, in directing EPA to prepare a second report, the Committee repeatedly referred to "program" or "programs." Second, in our report last year, we noted that EPA's report did not include information on funding and results at the individual program level. The Committee's admonition to EPA to comply with the observations we made last year confirms that it was still seeking information at the individual program level.

**Scope and Methodology**

To fulfill our objectives, we analyzed EPA's March 2000 report, its justification of estimates for its fiscal year 2001 budget request, and other documents, and we held discussions with EPA officials. We did not independently validate EPA's data. We did not attempt to determine whether the laws cited by EPA as the legal bases for its climate change activities are sufficient to justify those activities. We conducted our review from March through May 2000 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to Representative James T. Walsh, Chairman, and Representative 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 make copies available to others upon request.

If you have any questions about this report, please contact me or David Marwick at (202) 512-6111. Key contributors to this report were Ralph L. Lowry and Donald E. Pless.

for Peter F. Guerrero
Director, Environmental
Protection Issues

Enclosure

ENCLOSURE I

## Comments From the Environmental Protection Agency

Note: GAO's comments supplementing those in the report's text appear at the end of this enclosure.

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

OFFICE OF
AIR AND RADIATION

May 30, 2000

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

Dear Mr. Guerrero:

I appreciate the opportunity to review and comment on the draft GAO Report, Observations on EPA's March 2000 Climate Change Report. I have a number of concerns with the criticisms that GAO puts forth in this report, which I explain below.

EPA prepared the March 2000 Report in response to the Senate report language (Senate Report 106-161). The Senate report language states:

> *The Committee recognizes... that there are... longstanding programs which have goals and objectives that, if met, could have positive effects on energy use and the environment. The Committee does not intend to preclude these programs from proceeding, provided they have been funded and approved by Congress.*
>
> *To the extent future funding requests may be submitted which would increase funding for climate change activities prior to Senate consideration of the Kyoto Protocol (whether under the auspices of the Climate Change Technology Initiative or any other initiative), the Administration must do a better job of explaining the components of the programs, their anticipated goals and objectives, the justification for any funding increases, a discussion of how success will be measured, and a clear definition of how these programs are justified by goals and objectives independent of implementation of the Kyoto Protocol. The conferees expect these items to be included as part of the fiscal year 2000 budget submissions for all affected agencies... With regard to these submissions, the Committee expects all affected agencies to comply fully with the letter and spirit of the Government Performance and Results Act of 1993 (GPRA). The GAO is directed to prepare a report that evaluates the Agency's completed plan and submit its report to the Appropriations Committee 90 days after receipt of the Agency's plan.* (Senate Report 106-161)

Based on EPA's interpretation of the above language, I would like to respond to some of GAO's statements as follows.

See comment 1.

I. GAO states that the EPA report "provides information on requested funding and expected results at the program group level, but – like last year's report – not at the individual program level." This theme runs throughout the GAO report.

My main concern about GAO's analysis is that, for a second year, it construes the congressional directive to EPA much more broadly than is justified by the actual Senate language. As in 1999, GAO criticizes EPA for not including information in its March report to Congress at a level of detail that EPA believes was not actually requested by the Senate language. We discussed this concern in our May 14 meeting. This criticism is a key theme throughout the GAO report.

In our March 2000 report, as well as in the 2001 Annual Plan, we included all of the information requested by the committee in a comprehensive and organized fashion, and in a manner that complied with the letter and spirit of the Government Performance and Results Act (GPRA). EPA provided 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.

Furthermore, to respond to GAO's comments from 1999, EPA redesigned its annual performance measures within its GPRA structure to be at a greater level of detail than they were in 1999, developing 7 annual performance measures where there had previously been one. EPA developed its 2000 report based on this new set of performance measures.

As EPA explained in its response to the 1999 GAO report, EPA has consistently provided goals and accomplishments at a level above the program-by-program level and that this is consistent with the GPRA requirements. GAO's repeated criticism that EPA does not detail individual program contributions to the Agency's goals is inappropriate in that it does not address the fact that we have fully met both our congressional requirement, and the requirements under GPRA. In this regard, we believe EPA's March 2000 Report is both a reasonable interpretation of the Senate report language and a comprehensive response to GAO's 1999 analysis.

See comment 2.

II. GAO inaccurately associates full funding in 2001 with program benefits in 2001 (page 3 and page 15)

EPA's 2000 Report illustrates that an increase in funding will take more than one year to produce increased benefits. Nevertheless, GAO draws comparisons between increased funding in 2001 and expected 2001 results. GAO states that, while full funding in the Buildings sector in 2001 represents an 88% increase, the expected 2001 results in that sector only constitute an 18% increase. This comparison is misleading and inaccurate, as the incremental benefits from additional funding in 2001 will not be realized within one year. It will take several years, as EPA's activities build and effect additional investments in greenhouse gas reducing technologies, ensuring streams of emissions reductions over the lifetimes of those investments.

For voluntary, partnership programs, it can take months to develop the terms of agreements, and longer for partners to implement the efficiency improvements that reduce emissions. For this reason, the best approach to quantifying the benefits of the federal dollars spent is to analyze the benefits over several years.

ENCLOSURE I

See comment 3.

III. GAO overstates the costs of EPA's activities per ton of greenhouse gas reduced. (page 16)

GAO attempts to calculate the cost of various EPA activities for reducing each ton of greenhouse gases. GAO's effort overstates these costs since, as clearly footnoted in EPA's 2000 Report, the incremental benefits from the increased funding from 2001 to 2010 are not the complete stream of benefits that result from the increased funding. Many of the investments in technologies and practices spurred by EPA's programs have lifetimes well beyond the 5 to 10 years reflected in the GAO calculations. For every dollar the EPA spends on its programs in the buildings, industrial, and state and local sectors, EPA expects to continue to deliver more than 0.5 metric tons of carbon reductions and more than $70 in savings to businesses and consumers.

See comment 4.

IV. GAO states that "the strategies for the various sectors/areas and their constituent program groups and individual programs are not consistently presented."

EPA provided substantial detail on program strategies and approaches, with much of that detail in the program by program descriptions in the last section of the report. Indeed, some activities were outlined in greater detail for some programs than for others, as the respective programs' maturity and implementation structures allow. While GAO criticizes EPA for not being consistent in its presentation of program strategies, it is precisely because each program group and individual program has its own strategy that the description varies.

See comment 5.

V. GAO states that although EPA's report "lists the activities (outputs) considered necessary to achieve the goals of the Building and Industry sectors, it does not provide a comparable list for the transportation sector."

In fact, activities in the Transportation sector are outlined in the narrative -- just not in table form -- on pages 18-19 and pages 41-42. With respect to advanced technology research, we were specific about what we would do with the requested money.

See comment 6.

VI. GAO states that the March 2000 report "provides start dates for some, but not other, programs, and it is not clear why it provides this information inconsistently".

As GAO acknowledges in its report, EPA clearly outlines in its March 2000 report the authorities under which the Agency directs its climate programs. EPA's report also explains the multiple benefits that these programs provide. EPA therefore believes that providing the start dates for its climate programs is irrelevant. Where EPA provided start dates, it was for contextual reasons. Clearly, one would expect larger environmental benefits in 1999 from efforts started years ago and fewer accomplishments from partnerships just formed.

Again, I thank you for the opportunity to comment on this report.

Sincerely,

Paul M. Stolpman, Director
Office of Atmospheric Programs

The following are GAO's comments on the Environmental Protection Agency's letter dated May 30, 2000.

**GAO's Comments**

1. See discussion on pages 14 and 15.

2. EPA said that our draft report's presentation of information on the incremental funding and benefits for fiscal year 2001 was misleading and inaccurate. We presented the information to illustrate that the sector-level information in the current report is greater than it was in the prior report. We did not mean to suggest that all of the benefits from an increase in funding would be realized in the same year. In fact, our draft report noted that an increase in funding may take several years to produce increased benefits. In any case, to avoid possible misinterpretation, we deleted the calculations for the increases in funding and benefits.

3. EPA disagreed with our analysis of the 10-year benefits and costs of these programs. Because we found that EPA's report is ambiguous about the funding assumptions involved in comparing these costs and benefits, we changed our draft report to reflect only the expected 10-year benefits.

4. EPA provided an explanation for including more information on strategies for some activities than for others. It stated that greater detail was provided for those activities that were, for example, more mature. We changed our draft report to include EPA's explanation.

5. EPA disagreed with our observation that its report provides information on the activities needed to achieve the goals of the Building and Industry Sectors but does not provide comparable information for the Transportation Sector, and it noted the pages in its report where such information is provided. While we agree that EPA's report provides some information on the Transportation Sector's activities, the level of detail is less for that sector than for the other sectors. This is particularly true for the Transportation System Efficiency Program Group, which is the only Transportation Sector program group for which emission reductions are quantified. We added additional information to our draft report to support this observation. Furthermore, we found no explicit discussion of these programs on the pages cited by EPA.

6. EPA agreed with our observation that it included start dates for only some programs, but added that providing the start dates is irrelevant and that it included some start dates for contextual reasons. We raised the issue of start dates because, in directing EPA to prepare a second report, the Committee stated that the report should be consistent with the observations we made last year on EPA's first report. Therefore, we checked EPA's response to those observations. Last year, we observed that EPA included start dates for only some programs. We noted that, again this year, EPA included start dates for only some programs and did not explain why it presented such information inconsistently. We continue to believe that EPA should have taken a consistent approach with respect to the programs' start dates. Accordingly, we did not change our report.

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We continue to believe that EPA should have taken a consistent approach with respect to the programs' start dates. Accordingly, we did not change our report.

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