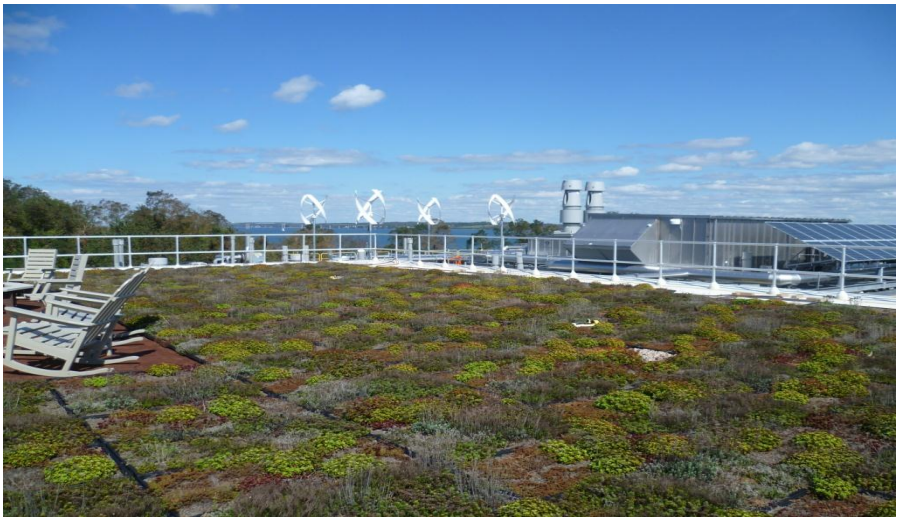
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

EPA Met or Exceeded Most Internal Climate Change Goals, But Data Quality and Records Management Procedures Need Improvement

Report No. 14-P-0325 **July 29, 2014**



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This is one of the U.S. Environmental Protection Agency Office of Inspector General's products associated with climate change. For details on our other reports on climate change, go to http://www.epa.gov/oig/climatechange.

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Abbreviations

EPA	U.S. Environmental Protection Agency
FY	fiscal year
GHG	greenhouse gas
OARM	Office of Administration and Resources Management
OIG	Office of Inspector General
OMB	Office of Management and Budget
SSPP	Strategic Sustainability Performance Plan

Cover photo: Green roof, wind turbines and solar panels at the EPA's Atlantic Ecology Division Laboratory in Narragansett, Rhode Island. (EPA photo)

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U.S. Environmental Protection Agency
Office of Inspector General

14-P-0325
July 29, 2014

At a Glance

Why We Did This Review

The congressional Bicameral Task Force on Climate Change requested that we assess U.S. Environmental Protection Agency (EPA) implementation of policies that address climate change at EPA facilities to ensure the EPA was meeting requirements.

To address this request, we evaluated the EPA's implementation of requirements under Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance." To meet the requirements of the order, the EPA developed a 2012 Strategic Sustainability Performance Plan that identified its progress in meeting internal agency goals related to greenhouse gas emissions, among others. We also reviewed the EPA's implementation of EPA Office of Inspector General (OIG) recommendations made in 2011 to adjust its greenhouse gas reductions goal based on funding and project status.

This report addresses the following EPA goals or cross-agency strategies:

- *Addressing climate change and improving air quality.*
- *Working toward a sustainable future.*

For further information, contact our public affairs office at (202) 566-2391.

The full report is at:
www.epa.gov/oig/reports/2014/20140729-14-P-0325.pdf

EPA Met or Exceeded Most Internal Climate Change Goals, But Data Quality and Records Management Procedures Need Improvement

Most Climate Change Goals Met

Improving data quality and records management procedures can support confidence in the reliability of EPA's progress reports on its climate change goals.

The EPA adhered to most climate change requirements for federal agencies. With a few exceptions, the EPA provided documentation to support its reported 2012 accomplishments. The EPA exceeded its climate change goals and requirements related to water use, greenhouse gas emissions and renewable energy. The EPA was one of only three agencies out of 25 reporting that received a green scorecard on the OMB sustainability scorecard for fiscal year (FY) 2013 and has achieved a green scorecard the last 3 years. In addition, the EPA voluntarily tracks and reports data for its leased buildings that are 50,000 square feet or larger. In response to the recommendation from the 2011 OIG report, the EPA incorporated a review of its greenhouse gas reduction goals as part of its annual Strategic Sustainability Performance Plan submission, and it agreed to make adjustments to the overall reduction goal as needed. Since the agency is on track to meet its 2020 greenhouse gas reduction goals and it has developed a process to revise the goals, we believe this prior OIG recommendation has been addressed.

Areas Where Improvements Are Needed

We identified several internal control weaknesses in the EPA's data quality assurance procedures and adherence to its Records Management Policy that need to be addressed. The agency relies heavily on a contractor to collect water and energy data used in the 2012 Strategic Sustainability Performance Plan and also relies on the contractor to perform its own quality assurance review of data presented in the plan, which, due to EPA inattention, could increase the likelihood that inaccurate data gets overlooked. Further, we identified data errors in the plan. The agency also lacks sufficient internal controls for electronic stewardship and data center accomplishments reported in the plan. Additionally, we identified areas where the EPA was not in full compliance with the agency's Records Management Policy. Specifically, EPA accomplishment data reported in the 2012 Strategic Sustainability Performance Plan related to fleet management, waste diversion and acquisitions have not been appropriately maintained and documented.

Recommendations and Planned Agency Corrective Actions

We recommend that the agency establish procedures to conduct a quality assurance review of Strategic Sustainability Performance Plan data provided by the contractor and EPA program offices. We also recommend that the agency develop and implement procedures for maintaining and securing records associated with production of the annual Strategic Sustainability Performance Plan in accordance with the EPA's Records Management Policy. The agency agreed with our recommendations and provided a corrective action plan.

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

THE INSPECTOR GENERAL

July 29, 2014

MEMORANDUM

SUBJECT: EPA Met or Exceeded Most Internal Climate Change Goals,
But Data Quality and Records Management Procedures Need Improvement
Report No. 14-P-0325

FROM: Arthur A. Elkins Jr.

TO: Craig Hooks, Assistant Administrator
Office of Administration and Resources Management

This is our report on the subject review conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The EPA office having primary jurisdiction over the issues evaluated is the Office of Acquisition Management within the Office of Administration and Resources Management.

Action Required

In accordance with EPA Manual 2750, your office provided acceptable and complete planned corrective actions in response to OIG recommendations. All recommendations are resolved and no final response to this report is required. We will post this report to our website at http://www.epa.gov/oig.

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Appendices

Why We Did This Review

The congressional Bicameral Task Force on Climate Change requested that the U.S. Environmental Protection Agency's (EPA's) Office of Inspector General (OIG) assess the agency's implementation of policies that address climate change. The task force sent similar requests to nearly 70 Inspectors General throughout the federal government. To address this request, the EPA OIG evaluated the EPA's implementation of Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," as documented in the EPA's 2012 Strategic Sustainability Performance Plan (SSPP). Executive Order 13514 (referred to in this report as the Executive Order) establishes an integrated strategy toward sustainability in the federal government and makes reduction of greenhouse gas (GHG) emissions a priority for all federal agencies.

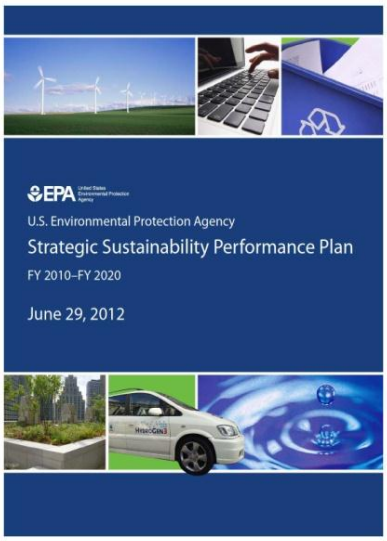

Figure 1: EPA's 2012 SSPP report is at: http://www.epa.gov/oaintrnt/documents/sspp2012_508.pdf (Source: EPA website)

Our objectives were to:

(1) Conduct a follow-up review on the EPA's implementation of the OIG's recommendation to "make adjustments to the GHG emission reductions and/or reduction goals based on actual funding and status of projects, and revise the EPA's overall reduction goal if needed during the annual update of the Strategic Sustainability Performance Plan." This recommendation was made, and agreed to by the EPA, in the OIG's April 2011 Report No. 11-P-0209, *EPA's Plan to Reduce Agency Greenhouse Gas Emissions Is on Track to Meet Executive Order 13514 Requirements*.

(2) Assess the extent to which the agency is meeting its 2012 SSPP objectives.

What the Executive Order Says

To promote energy security and protect the health of our environment, President Obama signed Executive Order 13514 on October 5, 2009. The Executive Order requires all federal agencies to meet specific goals related to the reduction of GHG emissions, conservation of water resources, local planning, fleet management, energy efficiency, electronics stewardship, pollution prevention and the advancement of sustainable acquisitions. The Executive Order requires

agencies to develop targets for GHG emissions reductions based on the "scope" of emissions sources, as described below and illustrated in figure 2.

- **Scope 1** emissions are direct GHG emissions from sources owned or controlled by the EPA. This includes emissions from fossil fuels burned onsite, from EPA-owned or -leased vehicles, and other direct sources.

- **Scope 2** emissions include indirect emissions resulting from the generation of EPA-purchased electricity, heat or steam power.

- **Scope 3** emissions include indirect emissions from sources not owned or directly controlled by the EPA but related to its activities, such as employee business travel, local commuting and waste disposal.

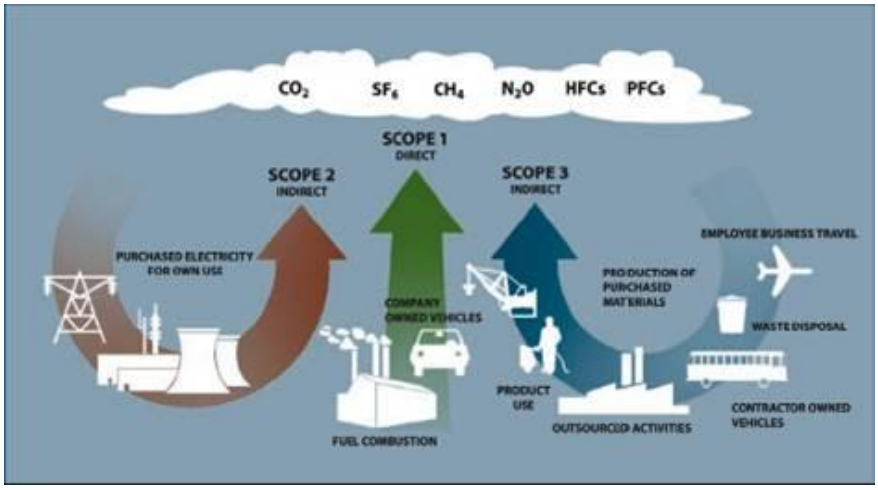

Figure 2: Sources of Scope 1, 2 and 3 GHG emissions. (Source: EPA website)

Requirements for Management of Climate Change Goal Accomplishment Data

We identified three requirements that apply to the EPA's management of its climate change goal data.

First, federal agencies are required to describe how they will achieve the environmental, economic and energy goals mandated by the Executive Order in an SSPP. The SSPP must be updated annually and submitted to the White House Council on Environmental Quality and the Office of Management and Budget (OMB). In the SSPP, the EPA must identify specific agency goals and milestones, as well as activities, plans and procedures relevant to the agency's implementation of the order. In addition, all federal agencies must establish and report a GHG inventory to the OMB. The EPA's Assistant Administrator for the Office of Administration and Resources Management (OARM) is the Senior Sustainability Officer responsible for ensuring implementation of the Executive Order at the

EPA. To ensure compliance with the order, the EPA has informed its senior managers—including Assistant Administrators, Regional Administrators and Laboratory Directors—of their responsibilities in implementing the Executive Order requirements.

Second, the EPA has other general requirements and responsibilities related to internal controls that apply to its SSPP reporting data. OMB Circular A-123, "Management's Responsibility for Internal Control," dated December 2004, defines internal control responsibilities in federal agencies. It states that management is responsible for establishing and maintaining internal control to achieve the objectives of effective and efficient operations, reliable financial reporting, and compliance with applicable laws and regulations. For example, good internal controls include appropriate documentation and access to that documentation. OMB Circular A-123 also states that periodic reviews, reconciliations or comparisons of data should be included as part of the regular assigned duties of federal agency personnel, and periodic assessments should be integrated as part of management's continuous monitoring of internal control.

Third, the agency has internal records management requirements. The EPA's Records Management Manual outlines requirements and responsibilities related to maintaining, securing, disposing and transferring of agency records. EPA offices must capture records to:

- Maintain adequate and proper documentation and evidence of agency activities for the time required to meet all program, audit and historical need.
- Maximize the usefulness of the records while active and allow for interoperability and sharing of records across programs and information systems.
- Allow for timely access and retrieval.
- Safeguard records from loss, misuse, and unauthorized access to or modification of information.
- Facilitate the identification and preservation of permanent records.

EPA Met Most of Its 2012 Planned Climate Change Goals

Overall, we found that the EPA met or exceeded most federal sustainability requirements under the Executive Order, as reported in the 2012 SSPP. With a few exceptions noted later, the EPA provided documentation to support its reported SSPP accomplishments. The EPA has guidance for the collection and verification of data on GHG emissions and energy and water use, and the guidance is updated annually and includes data quality assurance procedures.

The OMB uses a scorecard process to measure the federal government's sustainability performance. The scorecard employs a simple evaluation system: green for success; yellow for mixed results; and red for unsatisfactory. Through the OMB scorecard process, agencies are assessed on several sustainability areas, including: energy intensity, water intensity, fleet petroleum use, GHG pollution, green building practices and renewable energy use. The EPA was one of only three agencies out of 25 reporting that received a green scorecard on the OMB sustainability scorecard for fiscal year (FY) 2013. The EPA has achieved a green scorecard the last 3 years. Our analysis of the EPA's 2012 SSPP accomplishments for each goal is summarized below.

Goal 1: GHG Reduction and Inventory Requirements for Management

We confirmed that the EPA is on track to meet its goals related to GHG emissions.[1] The EPA's FY 2020 goal for Scope 1 and 2 GHG emission reductions is 25 percent from its FY 2008 baseline. For Scope 3 emissions, the EPA's goal is an 8 percent reduction from its FY 2008 baseline. We verified that the EPA had records and data to demonstrate that it reduced its Scope 1 and 2 emissions by a combined 57 percent and its Scope 3 emissions by 10 percent in FY 2011. As stated in the SSPP, the EPA achieved these reductions through energy efficiency projects at its facilities, improved fleet management practices and green power purchases. The EPA's renewable energy purchases enabled the agency to reduce its reported GHG emissions under current guidance from the White House Council on Environmental Quality.

Videoconference equipment is used by the EPA to reduce business travel emissions. (Source: EPA website)

Roof-top solar panels supply "green" electricity to the EPA's National Health and Environmental Effects Research Laboratory in Corvallis, Oregon. (Source: EPA website)

In addition, the EPA tracked and reported GHG emissions data for both required and non-required facilities. Although agencies are not required to report GHG emissions for facilities that are leased, the EPA collects facility GHG data for its leased buildings that are 50,000 square feet or larger on a quarterly basis and voluntarily reports these emissions.

To verify GHG emissions data, which include data on the agency's energy and water use, renewable energy purchases, and commuter and business travel emissions, we reviewed

[1] GHG emissions are measured in metric tons of carbon dioxide equivalent.

spreadsheets compiled by the EPA's contractor. We also reviewed original data from utility bills and renewable energy contracts for a sample of EPA facilities.

In response to the recommendation from our FY 2011 report, the agency incorporated a review of its GHG reduction goals as part of its annual SSPP submission, and it agreed to make adjustments to the overall reduction goal based on the previous year's progress and available funding. Since the agency is on track to meet its 2020 GHG reduction goals, and it has developed a process to revise the goals if needed, we believe this recommendation has been addressed.

Goal 2: Buildings and Energy Use

We confirmed through data and document reviews the agency's reported achievements in meeting its goals for energy intensity, high performance sustainable buildings, Energy Savings Performance Contracts and regional/local planning initiatives.

Solar lighting lines the roadways at the EPA's Research Triangle Park facility in North Carolina. According to the EPA, this is the longest stretch of solar-luminated roadway in the United States. Solar lighting is part of the agency's green power efforts. (Source: EPA website)

Energy Use. The EPA is required to reduce its energy intensity by 3 percent annually.[2] EPA data shows that the agency achieved its FY 2011 energy intensity reduction goal of 18 percent. The agency achieved energy savings by initiating and completing several major capital improvement projects to improve energy efficiency at its facilities in FY 2011. The agency also derived 0.68 percent of its energy use from onsite renewable resources, such as wind, solar and geothermal power.[3] In addition, the agency was required to complete energy assessments at 75 percent of high-energy use facilities by FY 2011. We determined, based on data collected by the EPA's contractor, that the agency exceeded the 75 percent target and completed more than the required number of assessments (78 percent).

[2] Energy intensity is energy use (measured in British thermal units) per gross square foot.
[3] The EPA has onsite renewable resources at 12 facilities, located in: Athens, Georgia; Chelmsford, Massachusetts; Narragansett, Rhode Island; Edison, New Jersey; Montgomery, Alabama; Research Triangle Park, North Carolina (Main Office, National Computer Center and Childcare Center); Ada, Oklahoma; Golden, Colorado; Manchester, Washington; and Corvallis, Oregon.

Advanced electric meter and boiler at the EPA's laboratory in Manchester, Washington. The EPA is required to install advanced metering equipment to capture energy consumption at its facilities to the maximum extent practicable. The EPA also initiated a project at its Manchester lab to retrofit fuel oil-fired boilers with natural gas to reduce GHG emissions and save on fuel costs. (EPA photos)

The EPA Region 8 building's green roof in Denver, Colorado, is an example of sustainable building practices used by the agency. The roof helps to regulate building temperature, reduce stormwater runoff and absorb carbon dioxide.
(Source: EPA website)

High Performance Sustainable Buildings. We confirmed that EPA documentation supports its 2012 SSPP accomplishments related to sustainable building management. For example, we verified documentation demonstrating the EPA's claims that 7.8 percent of the agency's buildings measuring greater than 5,000 square feet met the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings* in FY 2011. We also confirmed through records review that 45 construction projects and lease actions went through the EPA's GreenCheck process, which applies sustainability requirements to projects requiring funding in excess of $85,000.

Energy Savings Performance Contracts. The Energy Savings Performance Contracts initiative required federal agencies to enter into a minimum of $2 billion in performance-based contracts to improve federal building energy efficiency by December 2013. We confirmed that the EPA identified two potential Energy Savings Performance Contracts, totaling $9 million. The agency plans to pursue other proposed contracts to determine whether they are economically feasible and advantageous.

Regional/Local Planning. The agency's accomplishments in regional and local planning include participation in the Partnership for Sustainable Communities, and cooperation with other federal agencies to publish information resources about sustainable strategies for locating federal facilities.

Goal 3: Fleet Management

Photo of plug-in hybrid vehicle. The EPA acquired 153 alternative fuel vehicles to reduce its petroleum consumption and increase its alternative fuel consumption in FY 2011. (Source: www.fueleconomy.gov)

We confirmed the EPA's accomplishments related to fleet management and fossil fuel reductions by reviewing agency fleet data in the Federal Automotive Statistical Tool database. The agency is required to reduce its petroleum consumption by 30 percent by FY 2020 from its FY 2005 baseline. The EPA's fleet data show that it reduced petroleum consumption by approximately 33 percent in FY 2011 from its 2005 baseline. This reduction more than doubled the EPA's interim petroleum reduction target of 12 percent for FY 2011.

As reported in the SSPP, the EPA did not reach its requirement to increase alternative fuel[4] consumption by 10 percent annually. The agency's FY 2011 alternative fuel consumption was approximately 32 percent less than its target of 79,000 gasoline gallon equivalents. Additionally, EPA fleet data support that the agency exceeded its Energy Policy Act requirement to ensure that at least 75 percent of vehicle acquisitions were alternative fuel vehicles, excluding law enforcement and emergency response vehicles. The agency also eliminated 42 vehicles from its fleet in FY 2011.

Goal 4: Water Use

Water cistern used to collect and store rainwater for landscaping at childcare center at the EPA's Research Triangle Park facility in North Carolina. (Source: EPA website)

The EPA is required to improve its water use efficiency and management by reducing potable water consumption intensity[5] by 2 percent annually through FY 2020 relative to its FY 2007 baseline (i.e., 26 percent). We reviewed agency water use data to confirm that the EPA reduced its potable water use intensity by more than 15 percent in FY 2011 from its FY 2007 baseline. The agency also is required to reduce its non-potable water consumption for industrial, landscaping and agricultural uses by 2 percent annually through FY 2020 compared to its FY 2010 baseline (i.e., 20 percent). Agency data support that the EPA reduced its non-potable water use by 58 percent in FY 2011 from the prior year. The EPA achieved this through water conservation and storm water management projects.

[4] Alternative fuels are non-petroleum fuels. They include gaseous fuels such as hydrogen and natural gas, alcohols such as ethanol, vegetable and waste-derived oils, and electricity.
[5] Water use intensity is measured in gallons per gross square foot per year.

Goal 5: Pollution Prevention and Waste Reduction

We confirmed that the EPA has documentation to support its accomplishments on pollution prevention and waste reduction as reported in the SSPP. The Executive Order requires the EPA to minimize the generation of waste and pollutants through source reduction, and divert[6] at least 50 percent of non-hazardous solid waste and 50 percent of construction and demolition waste by the end of FY 2015. EPA data show that it achieved a waste diversion rate of 59 percent for solid waste, as well as construction and demolition waste, in FY 2011. We also reviewed EPA documentation to confirm that the agency is reducing waste through prevention assessment projects and other prevention efforts such as the agencywide "Think Beyond the Bin" program.

The *Think Beyond the Bin* campaign, launched in FY 2011, encourages facilities to strengthen their waste diversion efforts through source reduction, recycling, reuse and composting. (Source: EPA Intranet website)

Goal 6: Acquisition

We were able to verify documentation for most of the EPA's accomplishments related to acquisition. The EPA Acquisition System has been fully implemented agencywide and contains data fields for recording environmental attributes, such as the energy or water efficiency of a product or service, or whether a product contains recycled content. We also verified through document and data review that the EPA implemented initiatives to improve acquisition planning, market research and procurement data collection. However, we could not confirm the agency's assertion that it met or exceeded the Executive Order requirement to procure 95 percent of new contracts with green attributes for 3 consecutive years (2009, 2010 and 2011). Specifically, the methodology used to calculate the percentage of new contract actions with green attributes was not documented properly and could not be replicated.

Goal 7: Electronics and Data Centers

We were able to confirm through document and data review, software assessments and a site visit to the EPA's National Computer Center that the agency achieved many of its reported SSPP accomplishments related to electronic stewardship and data centers. The agency deployed software that is capable of establishing power-management settings for computers and monitors to 100 percent of all eligible EPA computers and monitors. Also, we verified that the EPA's personal computer standard details numerous "green" requirements in accordance with the Executive

[6] Waste diversion is the prevention and reduction of generated waste through source reduction, recycling, reuse or composting.

Order. We also reviewed the EPA's claim that "virtualization[7] is extensively used to support database hosting" at the EPA's data centers. Virtualization enables multiple operating systems to be located and independently operated from one physical server instead of the "one server one operating system" platform previously used. The EPA's implementation of virtualization helps the agency become more energy efficient by restructuring processes associated with server operations. The consolidation of physical servers can save energy, translating to savings of up to 80 percent in data center energy costs while reducing infrastructure and capital costs. In this area we found that the EPA's National Computer Center has made significant strides in virtualizing its database hosting infrastructure. As of 2012, the National Computer Center had virtualized 71 percent of its hosted databases. However, as of 2012, all EPA data centers had only virtualized 38 percent of their hosting infrastructure. We also found that the EPA lacks internal controls to validate its electronic stewardship data.

EPA policy requires that all of its retired electronic products are reused, donated, sold or recycled using environmentally sound management practices (Source: EPA website)

Goal 8: Agency Innovation

The 2012 SSPP described future activities that the EPA would undertake, but it did not report the EPA's specific FY 2011 accomplishments for providing agency innovation and governmentwide support for meeting the Executive Order goals.

Areas Where Improvements Are Needed

We identified several instances where the EPA lacked sufficient internal controls for gathering and reporting data in the 2012 SSPP. We found that the agency:

- Lacked procedures to ensure that accurate data was reported and generated by its contractor.
- Did not have adequate procedures for verifying data accuracy in the Federal Electronic Challenge database, which the EPA relies on for reporting its electronic stewardship goals.
- Does not have sufficient internal controls to verify performance metrics for the EPA's data centers.
- Lacked procedures for data collection, storage and manipulation measures (i.e., record keeping) for several metrics reported in the 2012 SSPP.

[7] According to the EPA's Office of Environmental Information, "virtualization" is a "method of partitioning one or more physical servers into multiple virtual machines."

EPA Relies on Contractor to Verify SSPP Data

A majority of the data reported in the 2012 SSPP related to GHG reduction, energy use and water use was managed by an EPA contractor. However, sufficient internal controls were not in place to verify the data collected and generated by the contractor. The EPA only seeks to verify the data if it sees an issue or problem with the data during a "visual check." According to an EPA official, first-line facility managers check the data. While there is additional data quality review at headquarters, the OIG does not believe these data quality review processes are adequate. The EPA relies heavily on its contractor not only to collect the data used in the SSPP but to conduct "self-supervised" quality assurance reviews.

Lack of sufficient internal controls resulted in the inclusion of undefined data in the SSPP. Specifically, because mileage data for privately owned vehicle usage are available on an annual basis only, the contractor did not have corresponding quarterly data for privately owned vehicles. The contractor had to use substitute privately owned vehicle data to calculate total EPA business travel GHG emissions for the second quarter of FY 2011 through the first quarter of FY 2012. The EPA deferred to the contractor to explain the substitute data. However, the contractor's response did not explain how the substitute data was developed. The EPA's lack of sufficient internal controls may increase the risk that inaccurate data is reported or accomplishments could be over- or understated in the SSPP.

Improved Controls Needed for Electronic Acquisitions Database

The agency did not implement an internal control process that ensures accuracy of Federal Electronic Challenge acquisitions. The Federal Electronic Challenge database is used to report data related to electronic stewardship goals. Some EPA locations that report data to the Federal Electronic Challenge database may provide supplemental documentation to validate the data, but this is not mandatory. A draft Standard Operating Procedure has been developed, but it has not been finalized and distributed to other EPA reporting locations.

Improved Controls Needed to Verify Data Center Performance Metrics

The EPA does not have sufficient internal controls to verify performance metrics for its data centers. As a result, we found that some accomplishments reported in the SSPP applied only to the EPA's National Computer Center in Research Triangle Park, North Carolina, rather than to the EPA as a whole. Without procedures in place to assure accurate data collection, management and reporting, the EPA cannot affirm that the goal related to data centers is being accomplished as reported.

Improved Record Keeping Procedures Can Ensure Data Accuracy

We found that the EPA lacked procedures for data collection, storage and manipulation measures (i.e., record keeping) for several metrics reported in the 2012 SSPP. The EPA did not maintain proper documentation on historical vehicle data, facility waste diversion records and compliance records for acquisitions. As outlined in the EPA Records Management Manual, EPA staff are required to maintain adequate and proper documentation and evidence of agency activities. Inadequate record keeping can mean decisions could appear unsupported and undocumented, and work completed may need to be repeated, which creates inefficiency. Specifically, we found the following:

- **Goal 3 Fleet Management database.** Due to system limitations, the EPA's fleet database is incapable of generating or saving historical data on the number of fleet vehicles used for emergency response and law enforcement. The EPA's emergency and law enforcement vehicles are exempt from federal alternative fuel vehicle acquisition requirements.

- **Goal 5 Waste Diversion.** Waste diversion data reported in the 2012 SSPP was derived from a questionnaire distributed to EPA facilities and entered into a tracking sheet, but the system used to track the information holds 75 percent rather than 100 percent of the agency's locations.

- **Goal 6 Acquisition.** OARM's Office of Acquisition Management was not able to reproduce the same results on the numbers of new EPA contracts with green attributes, as they were originally reported in the 2012 SSPP. Staff could not explain how the data were collected and analyzed because key personnel retired.

Recommendations

We recommend that the Assistant Administrator for Administration and Resources Management:

1. Establish procedures for OARM personnel to conduct a quality assurance review of SSPP data provided by the contractor and EPA program offices.

2. Develop and implement procedures for maintaining and securing records associated with production of annual SSPP data, in accordance with the EPA's Records Management Policy. Specifically, assure that:

    a. Fleet data reported in the SSPP are documented and accessible, and can be reproduced using either the current fleet database or by maintaining copies of historical data reports.

b. SSPP waste diversion data are documented for all facilities that can provide it, and specify in future SSPP reports whether the waste diversion rates are estimates or only represent specific facilities.
c. Findings and results associated with the acquisitions information in the SSPP report can be reproduced, including records of the data and methodology used. These records should be properly maintained, and should be accessible for the time period required by the EPA's Records Management Policy.

Agency Response to Draft Report and OIG Evaluation

We received comments on the draft report from the OARM and the Office of Environmental Information (appendix B). The agency's response included some technical comments, which were incorporated into the final report as appropriate. The agency agreed with all recommendations and provided a corrective action plan, as well as estimated completion dates for each corrective action. The plan provided steps the agency will take to address the recommendations, including many actions already in the planning stages. We agree with the EPA's proposed actions and consider recommendations 1 and 2 resolved. The full OIG evaluation of the agency response is also in appendix B

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in $000s)	
Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	11	Establish procedures for OARM personnel to conduct a quality assurance review of SSPP data provided by the contractor and EPA program offices.	O	Assistant Administrator for Administration and Resources Management	10/31/14		
2	11	Develop and implement procedures for maintaining and securing records associated with production of annual SSPP data in accordance with the EPA's Records Management Policy. Specifically, assure that:		Assistant Administrator for Administration and Resources Management			
		a. Fleet data reported in the SSPP are documented and accessible, and can be reproduced using either the current fleet database or by maintaining copies of historical data reports.	O		12/31/14		
		b. SSPP waste diversion data are documented for all facilities that can provide it, and specify in future SSPP reports whether the waste diversion rates are estimates or only represent specific facilities.	O		10/31/14		
		c. Findings and results associated with the acquisitions information in the SSPP report can be reproduced, including records of the data and methodology used. These records should be properly maintained, and should be accessible for the time period required by the EPA's Records Management Policy.	O		10/31/14		

[1] O = Recommendation is open with agreed-to corrective actions pending.
C = Recommendation is closed with all agreed-to actions completed.
U = Recommendation is unresolved with resolution efforts in progress.

Scope and Methodology

We conducted our work from April 2013 to February 2014. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We used the 2012 SSPP objectives as the benchmark for assessing how well the agency met its goals under Executive Order 13514. We identified requirements for record keeping and internal controls.

For each SSPP goal area, we assessed the EPA's documentation of data origination and collection methodology. We conducted interviews of both agency and contractor personnel who had direct knowledge of the data collection, management and storage specifics associated with the 2012 SSPP. For our review of the EPA's electronics and data centers, we conducted an onsite inspection of the National Computer Center data center at the EPA's facility in Research Triangle Park, North Carolina. We also reviewed utility bills, spreadsheets and guidance documents to verify that the EPA had documentation of the original source for all data in the 2012 SSPP.

To follow up on our recommendation from the April 2011 EPA OIG report, *EPA's Plan to Reduce Agency Greenhouse Gas Emissions Is on Track to Meet Executive Order 13514 Requirements*, we reviewed the completed corrective actions taken by the agency and the progress made by the agency in meeting its GHG reduction requirements.

Agency Response to Draft Report and OIG Comments

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

APR 16 2014

OFFICE OF
ADMINISTRATION
AND RESOURCES
MANAGEMENT

MEMORANDUM

SUBJECT: Response to OIG Draft Report Regarding Internal Climate Change Goals, OPE-FY13-0014

FROM: Craig E. Hooks, Assistant Administrator

TO: Carolyn Copper, Assistant Inspector General
Office of Program Evaluation

Thank you for the opportunity to review your draft report, "EPA Met or Exceeded Most Internal Climate Change Goals, but Data Quality and Record Management Procedures Need Improvement" Project Number OPE-FY13-0014, dated March 5, 2014. It is important that the Office of Inspector General recognizes that the EPA met or exceeded most federal sustainability requirements under the Executive Order and provided most documentation to support its reported FY 2012 accomplishments. The Office of Administration and Resources Management, in partnership with other EPA offices and regions, provides environmental and sustainable leadership with the federal government. The EPA was one of only three agencies out of 25 reporting that received a green scorecard on the Office of Management and Budget sustainability scorecard for FY 2013. The EPA has achieved a green scorecard the last three years.

OARM offers comments as attachment to this memo. If you have any questions regarding our response, please contact me at (202) 564-4600 or Yvette Jackson, deputy director, Facilities Management and Services Division, at (202) 564-2030.

Attachments (2)

cc: Renee Wynn
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Attachment 1

OARM and OEI Response to OIG Draft Report Regarding Internal Climate Change Goals Project No. OPE-FY13-0014 March 5, 2014

Response to the Recommendations:

1) Establish procedures for OARM personnel to conduct a quality assurance review of SSPP data provided by the contractor and EPA program offices.

OARM response:

- OARM will update existing standard operating procedures to include federal staff sampling of data collected by the contractor to help ensure the accuracy of energy and water data. Expected completion: October 31, 2014
- OARM will examine the contractor's compliance with the SOP for data quality control/quality assurance. Expected completion: October 31, 2014
- The EPA will provide more transparency and disclosure regarding its waste diversion data in the June 2014 SSPP and subsequent reports. Expected completion: October 31, 2014
- OARM finalize a draft electronics stewardship SOP to emphasize the internal control processes necessary for ensuring accuracy of the EPEAT data reported to the OMB. Expected completion: October 31, 2014 (While the new SOP has not been finalized or distributed, a memorandum summarizing the new reporting process was distributed in November 2013 to the EPA reporting locations.)

OIG Comment 1: We agree with the EPA's proposed actions. Recommendation 1 is resolved.

2) Develop and implement procedures for maintaining and securing records associated with production of annual SSPP data in accordance with the EPA's Records Management Policy. Specifically, assure that:

a. Fleet data reported in the SSPP are documented and accessible, and can be reproduced using either the current fleet database or by maintaining copies of historical data reports.

OARM response:

- OARM will implement changes to the Automotive Statistical Tool database that holds fleet management data. Expected completion: December 31, 2014

These changes will include:

- An update to the Vehicle Exemption field of the Master Record that will timestamp every change. The data will include the user, date and time of change, and what the exemption type was changed to.
- All the necessary back-end code necessary to create and report out on a "point-in-time" query snapshot of the fleet.

- A simple front-end tool where users can enter a specific date and AST would return a full data spreadsheet of what the fleet looked like on that date.
- OARM will also keep copies of historical data reports regarding fleet vehicles.

OIG Comment 2: We agree with the EPA's proposed actions. Recommendation 2a is resolved.

b. SSPP waste diversion data are documented for all facilities that can provide it, and specify in future SSPP reports whether the waste diversion rates are estimates or only represent specific facilities.

OARM response:

- OARM will report the percent of facilities reporting waste diversion data in the June 2014 and subsequent SSPPs. Expected completion: October 31, 2014

OIG Comment 3: OARM provided a revised response on May 9, 2014:

> OARM will report waste diversion data in a more detailed and transparent manner. At a minimum, OARM will include in its report: a list of major facilities, whether or not an individual facility on that list reported waste diversion data, the waste diversion data reported by that individual facility, and a discussion of the methodology used to calculate the agency waste diversion rate derived from the individual facility data. OARM will include this in the SSPP due in June 2014 and in subsequent SSPPs. Expected completion: October 31, 2014.

We agree with the EPA's revised response and the proposed actions. Recommendation 2b is resolved.

c. Findings and results associated with the acquisitions information in the SSPP report can be reproduced, including records of the data and methodology used. These records should be properly maintained, and should be accessible for the time period required by the EPA's Records Management Policy.

OARM response:

- OARM will develop procedures to ensure that records used for any future SSPP will be properly maintained and accessible for the required time period specified by the agency's records management policy. Expected completion: October 31, 2014.
- OARM is in the process of finalizing a SOP for data extraction and explicit methodology used to determine the agency's compliance with the goals specified in Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance. Expected completion: October 31, 2014

OIG Comment 4: We agree with the EPA's proposed actions. Recommendation 2c is resolved.

Response to Findings and Factual Accuracy:

At A Glance
. . . the agency relies heavily on a contractor to collect the data used in the 2012 Strategic Sustainability Performance Plan . . .

OARM response: As demonstrated during the course of this review, OARM collects and reviews environmental performance data from many sources, including contractors and EPA organizations.

OIG Comment 5: The audit team verified water and GHG data from databases generated, collected and maintained by the contractor (i.e., the FY 2011 and FY 2008 Comprehensive Inventory Master spreadsheets and the Annual Energy and Water Yearbook). In our meeting with the contractor, they explained how they collect data for these areas and enter them into the databases. The OIG modified the report as follows:

> The agency relies heavily on a contractor to collect water and energy data used in the 2012 Strategic Sustainability Performance Plan….

Goal 6: Acquisition page 8
However, we could not confirm the agency's assertion that it met or exceeded the Executive Order requirement to procure 95 percent of new contracts with green attributes for 3 consecutive years.

OARM response: We request clarification regarding the exact 3 consecutive years that could not be confirmed in the statement.

OIG Comment 6: The years that could not be confirmed were FYs 2009, 2010 and 2011. The OIG modified the report as follows:

> However, we could not confirm the agency's assertion that it met or exceeded the Executive Order requirement to procure 95 percent of new contracts with green attributes for 3 consecutive years (2009, 2010 and 2011).

Goal 7: Electronics and Data Centers pages 8-9
We could not validate the EPA's claim that "virtualization is extensively used to support database hosting" at the EPA's data centers . . . we found that the agency's claims about virtualization applied to only one of its data center facilities.

OEI response: OEI does not agree with the report findings regarding data center virtualization accuracy. The responses provided in summary and detail demonstrated substantial virtualization across both NCC and non-NCC data centers. The EPA provided evidence of extensive and growing virtualization across the agency, including evidence of 192 Oracle databases hosted on virtual platforms within the NCC representing well over 90% of NCC Oracle databases. The EPA also provided evidence of over 120 applications and application platforms hosted on virtual servers.

OEI believes virtualization is already extensively used to support database hosting, and the EPA currently is expanding virtualization to support the Web and application server tiers**.** The EPA's Federal Data Center Consolidation Initiative 2011 data shown below indicate that the EPA was 26% virtualized overall and 41% virtualized within the NCC; data for 2012 indicate growth such that the agency was 38% virtualized overall and 71% virtualized within the NCC. The agency continues to be aggressively virtualizing NCC hosted applications and platforms, which are mostly database and Web application platforms.

Year: 2011	Total Operating Systems	Total Physical	Percent Physical	Percent Virtualized
All EPA	2,906	2,165	75.40%	25.50%
NCC Only	747	441	59.04%	40.96%

Year: 2012	Total Operating Systems	Total Physical	Percent Physical	Percent Virtualized
All EPA	3,377	2,094	62.01%	37.99%
NCC Only	2,074	597	28.78%	71.22%

OIG Comment 7: The OIG concurs that the agency's National Computer Center has made significant strides in virtualizing its database hosting infrastructure. However, as of 2012, the agency's data centers had only virtualized 38 percent of their hosting infrastructure.

The OIG modified the report as follows (beginning with sentence 4 after *Goal 7: Electronics and Data Centers*), to reflect the National Computer Center's progress in the area of database hosting virtualization:

> We also reviewed the EPA's claim that "virtualization is extensively used to support database hosting" at the EPA's data centers. Virtualization enables multiple operating systems to be located and independently operated from one physical server instead of the "one server one operating system" platform previously used. The EPA's implementation of virtualization helps the agency become more energy efficient by restructuring processes associated with server operations. The consolidation of physical servers can save energy, translating to savings of up to 80 percent in data center energy costs while reducing infrastructure and capital costs. In this area we found that the EPA's National Computer Center has made significant strides in virtualizing its database hosting infrastructure. As of 2012, the National Computer Center had virtualized 71 percent of its hosted databases. However, as of 2012, all EPA data centers had only virtualized 38 percent of their hosting infrastructure. We also found that the EPA lacks internal controls to validate its electronics stewardship data.

Areas Where Improvements Are Needed

EPA Relies on Contractor to Verify SSPP Data page 10
A majority of the data reported in the 2012 SSPP related to GHG reduction, water use and local planning was managed by an EPA contractor. However, sufficient internal controls were not in place to verify the data generated and collected by the contractor. The EPA only seeks to verify the data if it sees an issue or problem with the data during a "visual check."

OARM response: Utility bills are sent to the contractor for use in preparing the SSPP data. The EPA has begun to conduct a sampling review of bills compared to the generated report to verify accuracy, and a future metering system will also permit an easier consolidation and verification of the data.

The EPA believes that the "visual check" is an effective control mechanism. The EPA reports energy use quarterly, in multiple digital metrics and graphic forms. This includes, but is not limited to, current quarter vs. previous year's quarter performance, rolling four-quarter performance data over a 3 year period, and most recent four quarters vs. previous fiscal year. These reports are on an individual lab basis and are distributed to HQ facilities staff, HQ environmental management systems staff, and every reporting facility as they are issued.

OARM disagrees that a contractor manages the majority of information regarding "local planning." Information about activities related to "local planning" is collected from many sources and no contractor has been tasked with collecting "local planning" participation information specifically, nor reports out on this data.

OIG Comment 8: Since "local planning" includes the partnership of other agencies such as the U.S. Department of Transportation and the U.S. Department of Housing and Urban Development, the OIG took local planning out of this statement as we recognize this data is collected from a variety of sources (i.e., the contractor and EPA). However, the OIG continues to believe there is a lack of sufficient internal controls. Based on information provided to the audit team, the reporting requirements set by the contractor included the collection of data and performing their own quality assurance check. Specifically, according to the contractor "the agency sometimes checks data for special projects, for example the Cincinnati Andrew W. Breidenbach Environmental Research Center had special projects they were interested in looking at in more detail. They do not routinely or frequently ask for utility bills. There is no formal process." The contractor also stated that the agency "does do a bit of a spot check. They pay more attention to special projects." Based on the exit conference between the EPA and the OIG, the OIG modified the report to include the following statement (under the section ***EPA Relies on Contractor to Verify SSPP Data***):

> According to an EPA official, first-line facility managers check the data. While there is additional data quality review at headquarters, the OIG does not believe these data quality review processes are adequate.

EPA Relies on Contractor to Verify SSPP Data *page 10*
Lack of sufficient internal controls resulted in the inclusion of erroneous data in the SSPP. Specifically, the contractor did not correctly report business travel emissions reductions for FY 2011.

OARM response: We have re-verified reported SSPP emissions data for business travel but found no error in the data provided in the plan. In support of this determination, we have attached material from our files supporting the statement made in the SSPP executive summary regarding reductions in business travel related emissions (See Business Travel Emissions attachment). We believe the data provided to the OIG was annual data that is used to meet regular reporting requirements, and that the business emissions travel data contained in the executive summary was a "special" one-time pull of data (May 2012) to highlight progress and the environmental benefits of the video conference initiative started in FY10. The data taken from the "special" one-time data pull would not match the regular reporting data provided on a fiscal year basis.

OIG Comment 9: There is no explanation in the SSPP executive summary that would alert the reader to the fact that the business emissions travel data contained in the executive summary was a "special" one-time pull of data. Nor is the reader alerted to the fact that the data taken from the special one-time data pull would not match the regular reporting data provided on a fiscal year basis. In fact, any reference or explanation of what a special one-time pull of data is, and its impact on the reported SSPP emissions data, is absent from the SSPP. The OIG modified the report as follows:

> Lack of sufficient internal controls resulted in the inclusion of undefined data in the SSPP. Specifically, because mileage data for privately owned vehicle usage are available on an annual basis only, the contractor did not have corresponding quarterly data for privately owned vehicles. The contractor had to use substitute privately owned vehicle data to calculate total EPA business travel GHG emissions for the second quarter of FY 2011 through the first quarter of FY 2012. The EPA deferred to the contractor to explain the substitute data. However, the contractor's response did not explain how the substitute data was developed. EPA's lack of sufficient internal controls may increase the risk that inaccurate data is reported or accomplishments could be over- or understated in the SSPP.

Improved Controls Needed for Electronic Acquisitions Database page 10
The agency did not implement an internal control process that ensures accuracy of Federal Electronic Challenge acquisitions.

OARM response: For fiscal years 2009 through 2012, the EPA used the Federal Electronics Challenge reporting structure to collect and synthesize agencywide electronics stewardship data needed to report to the Office of Management and Budget on the agency's sustainability goals. In FY 2012, the FEC announced the end of the awards and data collection program. Beginning with FY13 data collection, OARM and OEI agreed on a revised reporting structure and process (using legacy FEC contacts) to collect and summarize information on the agency's acquisition of electronics, specifically the EPA's Electronic Product Environmental Assessment Tool®

registered product purchases. The new process leverages OARM's annual environmental stewardship reporting process with data accuracy and quality reviews performed at the local site, as well as at the centralized/consolidated level. In addition to the new process, the OARM and the OEI have collaborated on improving the process further and investigating options for improving data and internal quality controls for electronics stewardship.

OIG Comment 10: The OIG acknowledges that the agency is taking proactive steps in this area and concurs with these efforts.

Improved Controls Needed to Verify Data Center Performance Metrics *page 10*
The EPA does not have sufficient internal controls to verify performance metrics for its data centers. As a result, we found that some accomplishments reported in the SSPP applied only to the EPA's National Computer Center in Research Triangle Park, North Carolina, rather than to the EPA as a whole.

OARM response: NCC is the EPA's primary application hosting data center and does dominate the analysis due to the large concentration (over 60%) of EPA operating systems and applications hosted there. However, performance metrics are aggregated for the agency and the NCC achievements are accurately included in the aggregate which represents the agency's accomplishments.

OIG Comment 11: The OIG agrees that the National Computer Center is the agency's primary database hosting location and has made significant strides in virtualizing its database hosting infrastructure at the National Computer Center. However, as of 2012, all agency data centers were only 38 percent virtualized. This distinction was not made in Goal 7 of the SSPP, thereby over-representing the agency's accomplishments in the area of virtualization. Additionally, our review in this area found that the EPA did not have controls in place to verify that performance data provided was accurate and represented the posture of the entire agency. As a result, the OIG found that sufficient internal controls over data verification were not in place.

Exhibit 2

Annual Rate of GHG Scope 3 Emissions Air and Ground Business Travel		4Q FY10	1Q FY11	2Q FY11	3Q FY11	4Q FY 11	1Q FY 12	
Current and 3 Previous Quarters Business Travel Air and Rental Car Emissions	>>>>>>>>>>>>	19,561	18,963	18,995	17,554	15,809	13,987	MTCO2E

Emissions Data by Quarter

	FY 2010				FY 2011				FY 2012
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr
GHG Emissions from Air Travel ($MTCO_2e$)	4,087	3,669	4,518	4,102	3,579	3,727	3,332	2,660	2,067
GHG Emissions from Car Rentals ($MTCO_2e$)	779	712	900	794	689	686	646	490	379
Total ($MTCO_2e$)	**4,866**	**4,381**	**5,418**	**4,896**	**4,268**	**4,413**	**3,978**	**3,150**	**2,446**

Current and previous 3 quarters	MTCO2 equivalents
4th Q FY 2010	19,561
1st Q Fy 2011	18,963
2nd Q Fy 2011	18,995
3rd Q Fy 2011	17,554
4th Q FY 2011	15,809
1st Q FY 2012	13,987

This metric always gives us 12 months of travel data to compare
This eliminates any regular/seasonal swings in travel by always including four quarters of business air and ground travel.

72%
28% reduction

Data is derived from GSA Travel Trax program that pulls in every agencies travel data from the various travel management systems (i.e. gov trip) and converts them to Metric Tons of CO2 Equivalents emitted. It is used by all/most federal agencies in calcing their Scope 3 Business Air and Travel emissions

Appendix C

Distribution

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