

October 2009

FEDERAL ENERGY MANAGEMENT

Agencies Are Taking
Steps to Meet
High-Performance
Federal Building
Requirements, but
Face Challenges



GAO

Accountability * Integrity * Reliability



Highlights of [GAO-10-22](#), a report to congressional committees

Why GAO Did This Study

The federal government is the nation's largest energy consumer. The Energy Independence and Security Act of 2007 (EISA) establishes high-performance federal building requirements that include reducing energy use and managing storm water runoff. The Department of Energy (DOE), General Services Administration (GSA), Office of Management and Budget (OMB), and Environmental Protection Agency (EPA) are implementing and, in turn, helping other agencies to implement EISA requirements. The American Recovery and Reinvestment Act of 2009 (Recovery Act) provides funding that some agencies can use to carry out EISA high-performance federal building requirements.

This report, required by EISA, addresses (1) what implementing agencies are doing to direct and assist other agencies in meeting key EISA high-performance federal building requirements, (2) how implementing agencies are planning to use Recovery Act funds to meet key requirements, and (3) what challenges implementing and other agencies might face. To do this, GAO reviewed legal materials, guidance, draft energy data, and other documents and interviewed agency officials and stakeholders.

DOE and GSA generally agreed with the report's findings and conclusions and provided written comments. OMB neither agreed nor disagreed with the report and provided technical comments. EPA did not provide comments. Agency comments were incorporated as appropriate.

View [GAO-10-22](#) or [key components](#). For more information, contact Terrell Dorn at (202) 512-6923 or DornT@gao.gov or Mark Gaffigan at (202) 512-3841 or GaffiganM@gao.gov.

FEDERAL ENERGY MANAGEMENT

Agencies Are Taking Steps to Meet High-Performance Federal Building Requirements, but Face Challenges

What GAO Found

Implementing agencies—DOE, GSA, OMB, and EPA—are taking steps to meet key EISA high-performance federal building requirements and, in so doing, are assisting and providing direction for other federal agencies toward this end. DOE, for example, has issued guidance for agencies to carry out EISA energy and water management activities and is developing regulations for agencies to reduce the use of energy generated from fossil fuels and to identify a green building certification system for federal buildings—all EISA requirements. However, as DOE officials noted, EISA does not require a certification system to ensure that agencies meet all EISA high-performance federal building requirements, and these systems are not designed to do so. GSA, which acts as the leasing agent for most federal agencies, is incorporating into its federal leases EISA requirements for leasing space with a recent ENERGY STAR label—an energy use rating system—and has established an Office of Federal High-Performance Green Buildings. OMB is incorporating information on agencies' progress in implementing EISA requirements into scorecards it uses to rate agencies' energy and water management. EPA is developing guidance to assist agencies in meeting EISA requirements for managing storm water runoff.

Two implementing agencies—GSA and DOE—are planning to use Recovery Act funds to meet key EISA high-performance federal building requirements. GSA received a \$4 million Recovery Act appropriation to fund its Office of Federal High-Performance Green Buildings and plans to use this funding to hire staff and carry out the office's functions. In addition, GSA received a far larger amount—\$4.5 billion—in Recovery Act funding to convert some GSA facilities to high-performance green buildings. DOE plans to use about \$73 million in Recovery Act funding to collect and manage energy usage data, provide technical assistance, and fund building energy efficiency research. OMB did not receive Recovery Act funds, and while EPA did, the funds were directed for purposes other than implementing EISA high-performance federal building requirements.

Agencies will likely face challenges meeting EISA requirements for (1) increasing energy efficiency and conservation, (2) decreasing and eventually eliminating the use of energy generated from fossil fuels, (3) conducting federal energy and water management activities, and (4) leasing ENERGY STAR rated space. In addition, long-term funding and capital budgeting issues—specifically, requirements for recognizing capital costs up front in the federal budget—present overarching challenges for agencies in meeting all EISA high-performance federal building requirements. According to officials from agencies and stakeholder organizations and GAO's prior work, effective energy management practices, such as ensuring accurate data are collected and monitored, can help agencies address some of these challenges.

Contents

Letter		1
	Background	5
	DOE, GSA, OMB, and EPA Are Taking Steps, Which Direct and Assist Federal Agencies in Implementing EISA	8
	GSA and DOE Have Plans Under Way to Use Recovery Act Funds to Help Meet Key EISA High-Performance Federal Building Requirements	19
	Agencies Will Likely Face Challenges Meeting EISA Energy Reduction and Energy and Water Management Requirements	23
	Concluding Observations	37
	Agency Comments	37
Appendix I	Objectives, Scope, and Methodology	40
Appendix II	Summary of EISA Provisions Contained in Title IV, Subtitle C—High-Performance Federal Buildings	44
Appendix III	Status of Agencies’ Implementation of Key EISA Requirements Contained in Title IV, Subtitle C	46
Appendix IV	Comments from the Department of Energy	56
Appendix V	Comments from the General Services Administration	58
Appendix VI	Comments from the Department of Defense	61
Appendix VII	GAO Contacts and Staff Acknowledgments	63

Tables

Table 1: Status of Agencies' Implementation of Key EISA Requirements Contained in Title IV, Subtitle C—High-Performance Federal Buildings, as of October 2009	15
Table 2: Energy Intensity Reduction Goals for Federal Buildings in EISA Title IV, Subtitle C, Section 431	23
Table 3: Fossil Fuel Generated Energy Use Reduction Requirements in EISA Title IV, Subtitle C, Section 433 for New Buildings and Those Undergoing Major Renovations	27

Figure

Figure 1: Agencies' Reductions in Energy Intensity, Including Partial Credits for Purchases of Renewable Energy and Renewable Energy Certificates, Fiscal Year 2008	25
---	----

Abbreviations

AIA	American Institute of Architects
ASHRAE	American Society for Heating, Refrigeration, and Air-Conditioning Engineers
Btu	British thermal unit
DOD	Department of Defense
DOE	Department of Energy
EISA	Energy Independence and Security Act of 2007
EPA	Environmental Protection Agency
EPAct 2005	Energy Policy Act of 2005
FEMP	Federal Energy Management Program
GSA	General Services Administration
LEED	Leadership in Energy and Environmental Design
MOU	memorandum of understanding
NECPA	National Energy Conservation Policy Act of 1978
NIBS	National Institute of Building Sciences
OMB	Office of Management and Budget
Recovery Act	American Recovery and Reinvestment Act of 2009
VA	Department of Veterans Affairs

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, DC 20548

October 30, 2009

The Honorable Barbara Boxer
Chairman
The Honorable James M. Inhofe
Ranking Member
Committee on Environment
and Public Works
United States Senate

The Honorable Henry A. Waxman
Chairman
The Honorable Joe L. Barton
Ranking Member
Committee on Energy and Commerce
House of Representatives

The federal government is the nation's single largest energy consumer, and federal buildings accounted for about 35 percent of the government's total energy usage in fiscal year 2008.¹ Over the last several years, a number of laws and executive orders have established new requirements and direction for reducing energy and water consumption in federal facilities. In December 2007, the Energy Independence and Security Act (EISA) was enacted to, among other things, make federal buildings more energy efficient and reduce energy and water consumption.² Specifically, EISA Title IV, Subtitle C—High-Performance Federal Buildings³ established new energy and water management requirements and standards for federal buildings and for the agencies that oversee them, among other things.⁴ For

¹U.S. Department of Energy preliminary fiscal year 2008 data.

²Energy Independence and Security Act of 2007, Pub. L. No. 110-140, Title IV, Subtitle C—High-Performance Federal Buildings, 121 Stat. 1492, 1607-23.

³According to Section 401(12) of EISA, a high-performance building is a building that integrates and optimizes on a life cycle basis all major high-performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations.

⁴For the purposes of this report, when we refer to high-performance federal building requirements or sections, we are referring specifically to those sections contained in EISA Title IV, Subtitle C—High-Performance Federal Buildings. Additionally, for the purposes of this report, when we refer to EISA, we are specifically referring to Title IV, Subtitle C.

example, EISA establishes requirements for reducing energy use at federal buildings, conducting energy and water evaluations, reducing the use of energy generated from fossil fuels for certain federal buildings, and managing storm water runoff. Currently, Congress is considering a new energy bill, which, if enacted in 2009, would be another significant piece of energy-related legislation enacted in the last 5 years.⁵

EISA directs certain agencies—including the Department of Energy (DOE), the General Services Administration (GSA), and the Office of Management and Budget (OMB)—to develop regulations and guidance, collect information, report on agencies’ progress, and coordinate activities across the federal government, among other activities. In addition, the Environmental Protection Agency (EPA), although not specifically required to do so under EISA, has taken on responsibilities for implementing some of EISA’s high-performance federal building requirements and will continue to do so under a recently issued Executive Order.⁶ Because of the roles these agencies are taking on with respect to EISA high-performance federal building requirements, for the purposes of this report, we refer to these four agencies as “implementing agencies.” In addition, EISA directs federal agencies, including the implementing agencies identified above and other agencies, such as the Departments of Defense (DOD) and Veterans Affairs (VA), to meet other federal building requirements contained in Title IV, Subtitle C of EISA.⁷

The American Recovery and Reinvestment Act of 2009 (Recovery Act) recently provided about \$787 billion to stimulate the economy, promote

⁵Congress is considering the American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009), which was passed by the House on June 26, 2009. Provisions in the proposed bill could affect a number of provisions contained in EISA, including §§ 433, 436, and 440 contained in Title IV, Subtitle C, which are within the scope of this audit. See H.R. 2454, title I, subtitle G, § 161, which contains technical corrections to EISA. Additionally, the proposed American Clean Energy Leadership Act of 2009, S. 1462, 111th Cong. (2009) would impact a number of provisions of EISA outside the scope of this audit. Prior to EISA’s enactment, the Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, was signed into law on August 8, 2005.

⁶Issued in October 2009, Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance, directs EPA, in coordination with other federal agencies as appropriate, to issue guidance on implementation of EISA Section 438 within 60 days of the date of the order.

⁷We have selected key high-performance federal building requirements contained in EISA Title IV, Subtitle C as part of our audit, as outlined in table 1 of this report. For a detailed description of all the requirements contained in Title IV, Subtitle C, see app. II.

job creation,⁸ and in some cases, further other policy goals such as carrying out EISA high-performance federal building requirements. This funding represents the first specific appropriation to carry out these requirements—although funding was authorized by EISA to carry out several of these requirements,⁹ funds were not appropriated.¹⁰ Additionally, some Recovery Act funding targeted more generally for energy efficiency activities, although not specifically appropriated to carry out EISA high-performance federal building requirements, can nevertheless be used for this purpose.

EISA requires us to report to Congress on the implementation of its high-performance federal building requirements by October 31, 2009.¹¹ To provide you with information on implementing agencies' progress in carrying out key EISA high-performance federal building requirements, this report addresses (1) what the implementing agencies—DOE, GSA, OMB, and EPA—are doing to carry out their responsibilities under EISA, which direct and assist federal agencies in meeting key EISA high-performance federal building requirements; (2) how implementing agencies are planning to use Recovery Act funds to meet key EISA high-performance federal building requirements; and (3) what challenges implementing and other agencies may face as they take steps to meet EISA high-performance federal building requirements. During the course of our review, we also identified energy management practices that can help agencies meet EISA high-performance federal building requirements, which we discuss in the third section of this report.

To identify the steps implementing agencies are taking, which direct and assist agencies in meeting key EISA high-performance federal building requirements, we first reviewed EISA Title IV, Subtitle C—High-Performance Federal Building requirements. We then identified DOE, GSA, OMB, and EPA as implementing agencies because EISA either assigns implementation responsibilities to them, such as developing

⁸Pub. L. No. 111-5, 123 Stat. 115.

⁹Pub. L. No. 110-140, § 440, 121 Stat. 1492, 1623 (2007).

¹⁰Despite a lack of specific appropriations to carry out EISA high-performance federal building provisions, agencies must still comply with such requirements using annual or other appropriations.

¹¹EISA also required us to report to Congress by October 31, 2008. See GAO, *Status of GSA's Implementation of Selected Green Building Provisions of the Energy Independence and Security Act of 2007*, [GAO-09-111R](#) (Washington, D.C.: Oct. 31, 2008).

regulations or guidance, or they have assumed some such responsibilities. To identify those EISA requirements that we designated as key, we met with implementing agency officials and stakeholder organizations—industry and advocacy groups such as the Building Owners and Managers Association and the Alliance to Save Energy—and identified which provisions contained specific requirements for the implementing agencies that were applicable during the time frame covered by our review.¹² We met with officials from DOE’s Federal Energy Management Program, GSA’s Office of Federal High-Performance Green Buildings,¹³ EPA’s ENERGY STAR Program and Office of Water, and OMB’s Energy and GSA Branches and reviewed agency-provided documentation, including draft and final regulations and guidance, and draft energy and water data. We also attended a meeting of the Interagency Sustainability Working Group in February 2009 to learn more about the government’s efforts to implement EISA high-performance federal building requirements.¹⁴ Additionally, we assessed the reliability of the draft energy intensity and energy and water management data we reviewed and determined that the

¹²As previously noted, we have audited specific sections and provisions contained in Title IV, Subtitle C of EISA. For an outline of the key requirements identified and contained in this report, see table 1. For a more detailed summary of all requirements contained in Title IV, Subtitle C, see app. II.

¹³According to EISA Section 401, a high-performance green building is a building that, during its life cycle, achieves a number of environmental goals. Specifically, compared with similar buildings (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency), a high-performance green building (1) reduces energy, water, and material resource use; (2) improves indoor environmental quality, including reducing indoor pollution, improving thermal comfort, and improving lighting and acoustic environments that affect occupant health and productivity; (3) reduces negative impacts on the environment throughout the life cycle of the building, including air and water pollution and waste generation; (4) increases the use of environmentally preferable products, including biobased, recycled content, and nontoxic products with lower life cycle impacts; (5) increases reuse and recycling opportunities; (6) integrates systems in the building; (7) reduces the environmental and energy impacts of transportation through building location and site design that support a full range of transportation choices for users of the building; and (8) considers indoor and outdoor effects of the building on human health and the environment, including: (a) improvements in worker productivity; (b) the life cycle impacts of building materials and operations; and (c) other factors that the Federal Director [of the Office of Federal High-Performance Green Buildings] or the Commercial Director [of the Office of Commercial High-Performance Green Buildings] consider to be appropriate.

¹⁴The Interagency Sustainability Working Group serves as the coordinating body for efforts involving the sustainability of the built environment in the federal sector. According to the working group, participating agencies include all of the Cabinet departments and a number of independent federal agencies and offices.

data were sufficiently reliable for our purposes.¹⁵ To determine how implementing agencies are planning to use Recovery Act funds to implement key EISA high-performance federal building requirements, we reviewed DOE's, GSA's, and EPA's plans to use such funds.¹⁶ OMB did not receive any Recovery Act funding. To determine what challenges implementing and other agencies may face as they take steps to meet EISA high-performance federal building requirements, we met with officials from the previously identified agencies and from DOD and VA (whose real property portfolios together account for 63 percent of federal building energy use), as well as stakeholder organizations with expertise in this area, and reviewed relevant documentation provided by these sources, such as reports on high-performance federal buildings and energy conservation measures, and contained in our prior reports. We selected these stakeholder organizations because of several factors, including agency recommendations and documentation, the organizations' varied areas of expertise, and the organizations' involvement in developing or helping to implement EISA requirements. Appendix I contains a more detailed discussion of our objectives, scope, and methodology.

We conducted this performance audit from December 2008 through October 2009 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.

Background

For decades, the federal government has attempted to improve energy efficiency and energy and water conservation at federal facilities. Recently, several laws, executive orders, and other agreements added new energy efficiency and energy and water conservation requirements for federal facilities. Specifically,

¹⁵Energy intensity is defined as energy consumption, measured in British thermal units (Btu), per gross square foot.

¹⁶While the Recovery Act provides funds to stimulate the economy and create jobs as well as, in some cases, further other policy goals, we did not examine how the key implementing agencies' planned use of Recovery Act funds would contribute to meeting the Recovery Act's goals.

-
- *The Energy Policy Act of 2005 (EPAct 2005)* set energy reduction and efficiency requirements for federal facilities, among other things.¹⁷ For example, EPAct 2005 Section 103 Energy Use Measurement and Accountability directs that all federal buildings be metered “...for the purposes of efficient use of energy and reduction in the cost of electricity used in such buildings...” by October 1, 2012.
 - *The Federal Leadership in High-Performance and Sustainable Buildings Memorandum of Understanding (MOU)*, signed by a number of federal agencies in 2006, established guiding principles and goals to, among other things, improve energy efficiency and water conservation in federal buildings.
 - *Executive Order 13423—Strengthening Federal Environmental, Energy, and Transportation Management*, issued in January 2007, directs that all new construction and major renovations in agency buildings comply with the guiding principles established in the 2006 MOU, as described above. This executive order further directs that 15 percent of the existing federal capital asset building inventory of an agency incorporate sustainable practices outlined in the MOU by the end of fiscal year 2015. Additionally, the executive order increased energy intensity reduction goals and sustainable building measures, such as decreasing water usage, among other goals for federal agencies.
 - *Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance*, issued in October 2009, directs agencies to establish reduction targets for certain greenhouse gas emissions, among other things. Additionally, the executive order directs EPA, in coordination with other federal agencies as appropriate, to issue guidance on EISA’s requirements for managing storm water runoff.

Building upon many of these and other previous efforts to enhance efficiency in federal facilities, EISA includes a number of high-performance federal building requirements. Appendix II summarizes all of EISA’s high-performance federal building requirements contained in Title IV, Subtitle C.

The four agencies that we have designated as implementing agencies play prominent roles in helping the federal government carry out energy and

¹⁷Pub. L. No. 109-58, 119 Stat. 594.

water management activities. Brief descriptions of each agency's roles follow.

- DOE's Federal Energy Management Program (FEMP) in the Office of Energy Efficiency and Renewable Energy promotes energy efficiency and the use of renewable energy resources at federal facilities. FEMP works to assist federal agencies in meeting the goals for saving energy set forth in mandates and executive orders. In addition, FEMP chairs interagency working groups that coordinate federal energy efficiency activities, including the Interagency Sustainability Working Group. Also, EISA requires DOE to establish an Office of Commercial High-Performance Green Buildings.
- GSA is directed by EISA Section 436 to establish an Office of Federal High-Performance Green Buildings and is tasked with, among other activities, coordinating green building activities across the federal government and establishing an interagency Federal Green Building Advisory Committee. EISA also requires the office to work in coordination with DOE's Office of Commercial High-Performance Green Buildings. Relevant to EISA's leasing requirements, contained in Section 435, GSA also acts as the leasing agent for most federal agencies, representing a cross-section of the federal government. As the federal agency that leases the most space, GSA leases space for a variety of purposes; however, 90 percent of its leasing portfolio is exclusively for federal offices.¹⁸
- OMB issues semiannual Executive Branch Management Scorecards to track agencies' progress toward achieving various federal goals and requirements, including those for energy management. To do so, OMB develops standards to measure agencies' success in meeting certain goals, such as progress in meeting federal requirements for reducing energy use. These scorecards give a green, yellow, or red score by agency, with green indicating success, yellow indicating mixed results, and red indicating unsatisfactory results. OMB has also provided guidance to federal agencies on using Recovery Act funds for high-performance federal building projects.
- EPA's ENERGY STAR program, run jointly with DOE, was originally designed as a voluntary program to label and promote energy-efficient products (such as major appliances, office equipment, lighting, and home

¹⁸Some federal agencies, such as DOD and VA, also have their own independent statutory authority related to real property, including leasing authority.

electronics) to reduce greenhouse gas emissions. EPA has extended the label to cover commercial and industrial buildings. To support this effort, ENERGY STAR provides an online energy management tool, called Portfolio Manager, which allows agencies to track and assess energy and water consumption across an entire portfolio of buildings. Agencies can enter energy consumption and cost data into Portfolio Manager to benchmark building energy performance, assess progress toward energy management goals over time, and identify opportunities for savings. EPA also has expertise relevant to EISA Section 438 storm water runoff requirements. Specifically, EPA's Office of Water helps federal agencies develop guidance to assist in their water management activities.

DOE, GSA, OMB, and EPA Are Taking Steps, Which Direct and Assist Federal Agencies in Implementing EISA

Implementing agencies—DOE, GSA, OMB, and EPA—are taking steps to carry out their responsibilities under Title IV, Subtitle C, and as a result, are directing and assisting federal agencies in meeting key EISA high-performance federal building requirements. As the following sections summarize, these steps include developing federal regulations and guidance, collecting information, reporting on agencies' progress, and assessing federal agencies' implementation of EISA high-performance federal building requirements. DOE, for example, is developing guidance for agencies to carry out EISA energy and water management activities and regulations to help agencies meet new EISA requirements for reducing their use of energy generated from fossil fuels. DOE is also developing regulations to assist agencies in identifying a green building certification system for federal buildings; however officials noted that EISA does not require a certification system to ensure compliance with EISA and these systems are not designed to do so. GSA, which acts as the leasing agent for most federal agencies, is incorporating into its federal leases EISA requirements for leasing buildings with a recent ENERGY STAR label—an energy use rating system—and has established an Office of Federal High-Performance Green Buildings. OMB is incorporating information on agencies' progress in implementing EISA requirements into scorecards it uses to rate agencies' energy and water management. EPA is developing guidance to assist agencies in meeting EISA requirements for managing storm water runoff. For more detailed information on the implementing agencies' activities, see appendix III.

DOE Is Collecting Information and Developing Regulations and Guidance, Which Help Federal Agencies Meet EISA Requirements

Section 431 of EISA requires agencies to annually reduce their energy consumption, measured as energy intensity, in federal buildings, resulting in a 30 percent reduction by fiscal year 2015, as compared with the energy consumption in the same buildings in fiscal year 2003.¹⁹ Since 1978, DOE has been collecting and reporting on agencies' energy consumption annually, as required prior to EISA.²⁰

Under Section 432 of EISA agencies are to, among other activities, designate facility energy managers to conduct energy and water evaluations for certain federal facilities.²¹ To facilitate compliance with this section, DOE is to issue guidelines for federal agencies to carry out this section, develop and deploy a Web-based tracking system, and select or develop a building energy use benchmarking system.²² In November 2008 and May 2009, DOE issued guidance for federal agencies to carry out energy and water management activities, as required by Section 432. This guidance addresses how agencies should (1) identify covered facilities, (2) designate facility energy managers, (3) conduct initial evaluations, and (4) report on their activities to DOE. DOE has begun collecting information from federal agencies on their energy and water management activities in federal buildings and has also begun developing a Web-based

¹⁹Section 431 of EISA amends section 543(a)(1) of the National Energy Conservation Policy Act of 1978 (NECPA), Pub. L. No. 95-619, 92 Stat. 3206, 3277 (1978), codified as amended at 42 U.S.C. § 8253(a)(1). Sec. 431 of EISA increases federal agency energy intensity goals, while also reinforcing existing energy intensity reduction goals outlined in Executive Order 13423 (2006). Agencies must reduce energy intensity in federal buildings by 3 percentage points annually from fiscal year 2008 through fiscal year 2015.

²⁰According to draft DOE energy data, 19 of 22 federal agencies reporting in fiscal year 2008 met the EISA energy intensity reduction goal of 9 percent. For a summary of agencies' progress in meeting energy intensity goals for fiscal year 2008, see fig. 1 of this report.

²¹Section 432 requires agencies to designate facility energy managers who shall conduct comprehensive energy and water evaluations annually for approximately 25 percent of covered facilities so that each facility is evaluated at least once every 4 years. Covered facilities must cover, at a minimum, those federal facilities that constitute at least 75 percent of facility energy use at each agency.

²²Section 432 of EISA requires DOE to issue guidelines and necessary criteria for agencies to implement the section not later than 180 days after the date of enactment of EISA (June 19, 2008); develop and deploy a Web-based tracking system for energy and water management activities not later than 1 year after enactment of EISA (Dec. 19, 2008); and select and develop a building energy use benchmarking system, such as the ENERGY STAR Portfolio Manager, and issue related guidance within 1 year of the date of enactment of EISA (Dec. 19, 2008). Building energy use benchmarking systems help agencies track and assess energy and water consumption in federal buildings by allowing them to compare their buildings with similar buildings.

tracking system for agencies to directly report this information in a central repository, as EISA requires. Specifically, DOE collected information from agencies on their designated energy managers in January 2009 and on their initial energy and water evaluation activities in June 2009, according to DOE officials.²³ DOE plans to test its Web-based tracking system in November 2009, make it available for wider agency use in January 2010, and make it publicly available via the Internet in August 2010. Further, as required by Section 432, DOE is selecting a preferred building energy use benchmarking system for facility energy managers, likely to be EPA's ENERGY STAR Portfolio Manager, and developing guidance for use of this system; agency officials provided no expected completion dates for the development of this guidance.

As required by Section 433, DOE is also developing draft regulations which direct agencies in meeting new EISA requirements for reducing their consumption of energy generated from fossil fuels in new federal buildings and those undergoing major renovation.²⁴ DOE officials anticipate that the draft regulations will be issued for public comment in early 2010. Furthermore, as Section 433 requires, DOE is developing regulations for agencies to identify a certification system for federal buildings to, according to the law, "encourage a comprehensive and environmentally sound approach to certification of green buildings."²⁵ DOE officials expect draft regulations to be issued for public comment in early 2010. DOE officials noted that EISA does not require this certification system to ensure agencies meet all EISA high-performance federal building requirements and these systems are not designed to guarantee EISA compliance. Consequently, agencies could meet green building

²³According to draft data collected by DOE, 22 out of 23 federal agencies reported to DOE in January 2009 identifying their designated energy managers and covered buildings, and 20 out of 23 federal agencies reported to DOE in June 2009 on their initial energy and water evaluations.

²⁴Section 433 of EISA requires DOE to establish, by rule, revised federal building energy efficiency performance standards for new federal buildings and those undergoing major renovations not later than 1 year after the date of enactment of EISA (Dec. 19, 2008). Section 433 states that buildings shall be designed so that the fossil-fuel-generated energy consumption of the buildings is reduced, compared with such energy consumption by a similar building in fiscal year 2003. These requirements call for a 55 percent reduction by fiscal year 2010 and the elimination of all such energy consumption in federal buildings by fiscal year 2030, relative to a fiscal year 2003 baseline.

²⁵Section 433 of EISA requires DOE to identify a certification system and level for green buildings not later than 90 days after the date of enactment of EISA (Mar. 19, 2008).

certification system requirements without meeting all EISA high-performance federal building requirements.

GSA Is Preparing for Upcoming Leasing Requirements and Has Established an Office to Coordinate High-Performance Federal Building Activities Required under EISA

GSA anticipates incorporating ENERGY STAR leasing requirements contained in Section 435 into its federal leases by late October 2009, according to GSA officials. Effective in December 2010, Section 435 prohibits federal agencies from entering into a contract to lease building space that, with certain exceptions, has not earned an ENERGY STAR label within the most recent year.²⁶ Because GSA acts as the leasing agent for most federal agencies, the agency's action will help enable federal agencies using GSA leases to comply with EISA's leasing requirement, according to the Acting Director of GSA's Office of Federal High-Performance Green Buildings.

GSA established the Office of Federal High-Performance Green Buildings in March of 2008, as required by Section 436, primarily to promote and coordinate high-performance building information and activities throughout the federal government.²⁷ According to GSA officials, among other activities required by Section 436, GSA's Office of Federal High-Performance Green Buildings identified and recommended to DOE a certification system for federal buildings in April 2008,²⁸ anticipates establishing a senior-level interagency Federal Green Building Advisory

²⁶See app. II for a list of exceptions. Additionally, not later than 3 years after EISA's enactment (Dec. 19, 2010), the Federal Acquisition Regulatory Council must revise the Federal Acquisition Regulation, in consultation with GSA's Office of Federal High-Performance Green Buildings and DOE's Office of Commercial High-Performance Green Buildings, to comply with these requirements when leasing buildings.

²⁷We previously reported on GSA's and the office's activities in October 2008. See GAO, *Status of GSA's Implementation of Selected Green Building Provisions of the Energy Independence and Security Act of 2007*, [GAO-09-111R](#) (Washington, D.C.: Oct. 31, 2008).

²⁸Section 436 requires the Office of Federal High-Performance Green Buildings to identify and provide to DOE the certification system that is most likely to encourage a comprehensive and environmentally sound approach to the certification of green buildings within 60 days of enactment (Feb. 19, 2008). GSA determined the Leadership in Energy and Environmental Design (LEED) Green Building Rating System to be the most appropriate system for the federal real property inventory and conveyed this to DOE in April 2008. LEED is a third-party certification program and a national benchmark for the design, construction, and operation of high-performance green buildings, according to the U.S. Green Building Council.

Committee and holding its first meeting by November 2009,²⁹ and plans to issue a report for Congress fully outlining the agency's activities related to the implementation of EISA high-performance federal building requirements in December 2009.³⁰ With regard to GSA's identification of a green building certification system for federal agencies, as mentioned previously, DOE officials said they anticipate issuing draft regulations for agencies in early 2010 to assist agencies in choosing a green building certification system. However, as also mentioned previously, EISA does not require this certification system to ensure agencies meet all EISA high-performance federal building requirements. The Acting Director of GSA's Office of Federal High-Performance Green Buildings said that GSA anticipates issuing additional guidance to supplement DOE's regulations to ensure that agencies will also meet federal energy and water requirements, including EISA high-performance federal building requirements. He added that a certification system's value is its independent, third-party review and verification process.³¹

As required by Section 439,³² GSA established a program to accelerate the use of more cost-effective technologies in GSA facilities in May 2009, according to the Acting Director of GSA's Office of Federal High-Performance Green Buildings. This program includes identifying cost-effective lighting technologies for use in GSA buildings, as well as

²⁹Section 436 of EISA requires GSA's Office of Federal High-Performance Green Buildings to establish a senior-level Federal Green Building Advisory Committee, which is to, among other things, provide advice and recommendations on current budget and contracting practices and identify tools to aid life cycle cost decision making. EISA requires GSA to ensure coordination with nine relevant agencies and offices including EPA; the Office of the Federal Environmental Executive; the Office of Federal Procurement Policy; the Departments of Energy, Health and Human Services, Defense, and Transportation; the National Institute of Standards and Technology; and the Office of Science and Technology.

³⁰Section 436 requires the Office of Federal High-Performance Green Buildings to report to Congress on compliance issues and other federal green building initiatives within 2 years of EISA's enactment (Dec. 19, 2009) and biennially thereafter.

³¹In commenting on a draft of this report, GSA further stated that it requires its contractors to meet the LEED Silver level as well as other requirements, including fossil fuel reduction, water conservation, and energy requirements.

³²Section 439 requires GSA to review the current use and availability of cost-effective lighting technologies and geothermal heat pumps in GSA facilities as part of a program to accelerate the use of more cost-effective technologies and practices at GSA facilities within 90 days of EISA's enactment (Mar. 19, 2008).

opportunities to use geothermal heat pump technology.³³ For example, GSA is working with DOE's Oak Ridge National Laboratory to assist in the development, management, and performance of a geothermal technology acceleration program.

OMB Is Collecting Information and Assessing Agencies' Progress in Meeting Energy Efficiency Goals

As previously outlined, Section 431 requires agencies to reduce energy consumption (measured as energy intensity) in their federal buildings. OMB officials said they continue to collect and incorporate energy intensity information into agencies' energy management scorecards, as they have done since the scorecard's inception in January 2006. OMB uses these scorecards to assess federal agencies' status and progress in meeting federal energy management goals.³⁴ Additionally, since January 2009, OMB officials said they have been analyzing and incorporating information on energy and water management activities into the scorecard's progress milestone semiannually, as required by Section 432.³⁵ As required by Section 434, OMB has also reported collecting information on agencies' processes for reviewing decisions on large capital energy investments,

³³Geothermal heat pumps, also known as ground-source heat pumps, can be used to heat, cool and, if so equipped, supply a facility with hot water by using the constant temperature of the earth as the exchange medium instead of the outside air temperature. Relative to air-source heat pumps, geothermal heat pumps are highly efficient, last longer, and need less maintenance.

³⁴42 U.S.C. § 8253(f)(9) requires OMB to incorporate this information into its scorecards. In the status milestone for energy in OMB's July 2009 Management Scorecard, 11 agencies received a green light, 4 agencies received a yellow light, and 7 agencies received a red light.

³⁵Section 432 requires OMB to issue semiannual scorecards to Congress, other federal agencies, and the public for energy management activities carried out by federal agencies under this provision. OMB incorporated information on agencies' identification of covered facilities and designation of energy managers in the progress milestone of energy management scorecards it issued in January 2009, and information on initial energy and water evaluation activities in the progress milestone in the scorecard it issued in July 2009. In the progress milestone for energy in OMB's January 2009 Management Scorecard, 21 agencies received a green light and 1 agency received a yellow light. In the progress milestone for energy in OMB's July 2009 Management Scorecard, 18 agencies received a green light, 3 agencies received a yellow light, and 1 agency received a red light.

such as heating and cooling systems.³⁶ OMB provided a report on agencies' progress to Congress in July 2009, as Section 434 also requires.³⁷

EPA Is Working with DOE on Selecting an Energy Use Benchmarking System and Is Developing Storm Water Runoff Guidance

EPA is coordinating with DOE to develop EPA's ENERGY STAR Portfolio Manager as the preferred building energy use benchmarking system per Section 432, which requires DOE to select or develop a building energy use benchmarking system, according to EPA officials. EPA is also developing guidance to assist federal agencies in meeting EISA's storm water runoff requirements contained in Section 438.³⁸ Although not designated in EISA to develop guidance to control storm water runoff, EPA issued draft technical storm water runoff guidance for agency comment in February 2009, at the request of the Interagency Sustainability Working Group because of EPA's expertise in water management. Issued in October 2009, Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance directs EPA, in coordination with other federal agencies as appropriate, to issue guidance on implementation of Section 438 within 60 days of the date of the order. EPA officials said that the agency expects to issue guidance by the order's December 2009 deadline.

³⁶Section 434 of EISA requires federal agencies to ensure that any large capital energy investment in an existing building that is not a major renovation but involves the replacement of installed equipment (such as heating and cooling systems), or the renovation, rehabilitation, expansion, or remodeling of existing space, employs the most energy efficient designs, systems, equipment, and controls that are life cycle cost effective. Not later than 180 days after the date of enactment of EISA (June 19, 2008), federal agencies must develop a process for reviewing these decisions and report to OMB on the process established.

³⁷OMB is required to submit a report to Congress on agencies' compliance within 1 year of EISA's enactment (Dec. 19, 2008). According to OMB, of the 22 agencies that OMB tracks as part of its energy management scorecard, all 22 agencies reported that they have incorporated language on EISA Section 434 compliance into existing agency guidance documents. In addition, OMB reports including language in its recent guidance to federal agencies on implementation of the Recovery Act to require that all federal infrastructure investments using Recovery Act funds meet the requirements of Section 434.

³⁸Section 438 applies to sponsors of federal facility development or redevelopment projects with a footprint of more than 5,000 square feet. For particular project sponsors, use of site planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of properties, to the maximum extent technically feasible, is required.

DOE, GSA, OMB, and EPA
 Are Developing
 Regulations and Guidance,
 Collecting Relevant
 Information, and Assessing
 Federal Agencies'
 Implementation of EISA

Table 1 summarizes the steps these four implementing agencies are taking, which direct and assist federal agencies in implementing key EISA high-performance federal building requirements. For more detailed information on implementing agencies' activities, see appendix III.

Table 1: Status of Agencies' Implementation of Key EISA Requirements Contained in Title IV, Subtitle C—High-Performance Federal Buildings, as of October 2009

EISA section ^a	Implementing agency	Key EISA requirement	Status of implementation
Section 431 – Energy Reduction Goals for Federal Buildings	DOE	Agencies ^b must reduce energy intensity in federal buildings by 3 percentage points annually from fiscal year 2008 through fiscal year 2015. ^c	DOE is collecting and reporting data annually on reductions in energy intensity in federal buildings. ^d
	OMB	Not specifically required by EISA.	OMB is incorporating agencies' progress in meeting energy intensity goals into semiannual agency scorecards, as required prior to EISA. ^e

EISA section ^a	Implementing agency	Key EISA requirement	Status of implementation
Section 432 – Management of Energy and Water Efficiency in Federal Buildings	DOE	Issue guidelines and necessary criteria for agencies to implement requirements for facility energy managers and energy and water evaluations within 180 days of EISA's enactment (June 19, 2008).	DOE issued guidance in November 2008 and May 2009 for federal agencies to implement initial energy and water management requirements. The guidance addresses how agencies should (1) identify covered facilities, (2) designate facility energy managers, (3) conduct initial evaluations, and (4) report on their activities.
		Agencies ^f must designate facility energy managers who shall conduct comprehensive energy and water evaluations annually for approximately 25 percent of covered facilities so that each facility is evaluated at least once every 4 years. Covered facilities must cover, at a minimum, those federal facilities that constitute at least 75 percent of facility energy use at each agency.	DOE collected information from agencies on their covered facilities and designated energy managers in January 2009 and on their initial energy and water evaluation activities in June 2009. ^g
		Develop and deploy a publicly available Web-based tracking system for energy and water management activities within 1 year of enactment (Dec. 19, 2008).	DOE has begun to develop a Web-based tracking system, which it plans to test in November 2009, make available for agency use in January 2010, and make publicly available via the Internet in August 2010.
		Select or develop a building energy use benchmarking system, such as the ENERGY STAR Portfolio Manager, within 1 year of enactment (Dec. 19, 2008). ^h	DOE is selecting a preferred building energy use benchmarking system for facility energy managers, likely to be EPA's ENERGY STAR Portfolio Manager, and developing guidance for use of this system; agency officials provided no expected completion dates for these activities.
	EPA	Not specifically required by EISA.	EPA is coordinating with DOE on using EPA's ENERGY STAR Portfolio Manager as the preferred building energy use benchmarking system, according to EPA.
	OMB	Issue semiannual scorecards to Congress, other federal agencies, and the public for energy management activities carried out by federal agencies under this provision.	OMB has incorporated information on agencies' identification of covered facilities and designation of energy managers in the progress milestone of its energy management scorecard issued January 2009, and initial energy and water evaluation activities into its scorecard issued July 2009. ⁱ

EISA section ^a	Implementing agency	Key EISA requirement	Status of implementation
Section 433 – Federal Building Energy Efficiency Performance Standards	DOE	<p>Issue revised federal building energy efficiency performance standards, which require reduction of fossil fuel-generated energy consumption in new federal buildings and those undergoing major renovations within 1 year of EISA's enactment (Dec. 19, 2008).^j</p> <p>Identify a certification system and level for green buildings, in consultation with GSA and DOD, within 90 days of enactment (Mar. 19, 2008).</p>	<p>DOE expects to issue draft regulations for public comment in early 2010.</p> <p>DOE is developing regulations to provide agencies with criteria for identifying a certification system; agency officials expect draft regulations to be issued for public comment in early 2010.</p>
Section 434 – Management of Federal Building Efficiency	OMB	<p>Agencies^k must report to OMB on the process they have established to ensure that large capital energy investments are life cycle cost effective.^l OMB is required to report to Congress on agencies' compliance within 1 year of EISA's enactment (Dec. 19, 2008).</p>	<p>Agencies have reported this information, according to OMB. OMB provided this report to Congress in July 2009.</p>
Section 435 – Leasing	GSA	<p>Limits agencies from entering into contracts to lease building space only in buildings that have earned an ENERGY STAR label within the most recent year, with certain exceptions, effective 3 years after EISA's enactment (Dec. 19, 2010).^m</p>	<p>GSA expects to incorporate provisions into its leases by late October 2009.</p>
Section 436 – High-Performance Green Federal Buildings	GSA	<p>Establish an Office of Federal High-Performance Green Buildings within 60 days of EISA's enactment (Feb. 19, 2008) to coordinate green building information and activities across the federal government, among other activities.</p> <p>Establish a senior-level Federal Green Building Advisory Committee.</p> <p>Identify and provide to DOE the certification system that is most likely to encourage a comprehensive and environmentally sound approach to the certification of green buildings within 60 days of enactment (Feb. 19, 2008).</p> <p>Report to Congress on compliance issues and other federal green building initiatives within 2 years of EISA's enactment (Dec. 19, 2009) and biennially thereafter.</p>	<p>GSA established the Office of Federal High-Performance Green Buildings and appointed an Acting Director in March 2008 and is coordinating with other agencies primarily through the Interagency Sustainability Working Group.</p> <p>GSA is forming an interagency Federal Green Building Advisory Committee with a first meeting anticipated for November 2009.</p> <p>GSA determined the Leadership in Energy and Environmental Design (LEED) Green Building Rating Systemⁿ to be the most appropriate system for the federal real property inventory and conveyed this determination to DOE in April 2008.</p> <p>GSA is developing a report for Congress fully outlining the agency's activities related to implementation of Title IV, Subtitle C, which officials expect will be issued by Dec. 19, 2009.</p>

EISA section ^a	Implementing agency	Key EISA requirement	Status of implementation
Section 438 – Storm Water Runoff Requirements for Federal Development Projects	EPA ^o	For particular project sponsors, use site planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of properties, to the maximum extent technically feasible. ^p EISA does not identify an oversight agency to issue regulations or guidance.	EPA issued draft technical guidance for agency comment in February 2009. EPA expects this guidance to be made final in December 2009.
Section 439 – Cost-Effective Technology Acceleration Program	GSA	Review the current use and availability of cost-effective lighting technologies and geothermal heat pumps in GSA facilities as part of a program to accelerate the use of more cost-effective technologies and practices at GSA facilities within 90 days of EISA's enactment (Mar. 19, 2008).	GSA established a program to accelerate the use of more cost-effective technologies and practices at GSA facilities in May 2009. For example, GSA is working with DOE's Oak Ridge National Laboratory to assist in the development, management, and performance of a geothermal technology acceleration program. ^q

Source: GAO analysis of EISA Title IV, Subtitle C, comments by agency officials, and agency documents.

Notes:

See app. II for a summary of all requirements contained in Title IV, Subtitle C.

This table summarizes actions taken to address key EISA high-performance federal building requirements. For the purposes of this audit, we did not address all requirements contained in all sections of Title IV, Subtitle C.

Most activities outlined in this table are specifically designed to meet EISA requirements. In some cases, activities are not required by EISA, but help to provide the means used to assess EISA implementation, help other federal agencies implement EISA requirements, or both.

^aThis table does not include Sections 437, 440, and 441. Section 437 directs us to audit the implementation of EISA Title IV, Subtitle C, High-Performance Federal Buildings and report to Congress by October 31, 2008, and October 31, 2009. Section 440 authorizes appropriations to carry out EISA's high-performance federal building requirements. Section 441 amends a prior law to provide a technical change on public building life cycle costs.

^bFor purposes of this section, agency includes executive agencies as defined in 5 U.S.C. § 105 and each entity specified in subparagraphs (B) through (I) of subsection (I) of 5 U.S.C. § 5721. See 42 U.S.C. § 8241.

^cEnergy intensity is defined as energy consumption, measured in British thermal units (Btu), per gross square foot. Annual goals are measured against a fiscal year 2003 baseline.

^dAccording to draft DOE energy data, 19 of 22 federal agencies reporting in fiscal year 2008 met the EISA energy intensity reduction goal of 9 percent. For a summary of agencies' progress in meeting energy intensity goals for fiscal year 2008, see fig. 1 of this report.

^e42 U.S.C. § 8253(f)(9) requires OMB to incorporate this information into its scorecards. OMB has been incorporating energy intensity information into its scorecards since their inception in January 2006, according to OMB officials. In the status milestone for energy in OMB's July 2009 Management Scorecard, 11 agencies received a green light, 4 agencies received a yellow light, and 7 agencies received a red light.

^fFor purposes of this section, agency has the same meaning as that in Section 431.

^gAccording to draft data collected by DOE, 22 out of 23 federal agencies reported to DOE in January 2009 identifying their designated energy managers and covered buildings, and 20 out of 23 federal agencies reported to DOE in June 2009 on their initial energy and water evaluations.

^hENERGY STAR Portfolio Manager is administered by EPA and is an interactive energy management tool that allows agencies to track and assess energy and water consumption across a portfolio of buildings through a secure online Web site.

GSA and DOE Have Plans Under Way to Use Recovery Act Funds to Help Meet Key EISA High-Performance Federal Building Requirements

^lIn the progress milestone for energy in OMB's January 2009 Management Scorecard, 21 agencies received a green light and 1 agency received a yellow light. In the progress milestone for energy in OMB's July 2009 Management Scorecard, 18 agencies received a green light, 3 agencies received a yellow light, and 1 agency received a red light.

^jFor these buildings, the reduction must be 55 percent by 2010 (relative to the fiscal year 2003 level), and continue to be reduced each year before finally being reduced by 100 percent by 2030.

^kFor purposes of this section, agency has the same meaning given in Sections 431 and 432.

^lLarge capital energy investments include major replacements of heating and cooling systems, or projects to expand existing space, employ energy-efficient designs, systems, equipment, and controls. Life cycle cost effective means that the estimated savings from an investment exceed its costs over its lifetime. According to OMB, of the 22 agencies that OMB tracks as part of its energy management scorecard, all 22 agencies reported that they have incorporated language on EISA Section 434 compliance into existing agency guidance documents.

^mNot later than 3 years after EISA's enactment (Dec. 19, 2010), the Federal Acquisition Regulatory Council must revise the Federal Acquisition Regulation, in consultation with GSA's Office of Federal High-Performance Green Buildings and DOE's Office of Commercial High-Performance Green Buildings, to carry out the requirements.

ⁿLEED is a third-party certification program and a national benchmark for the design, construction, and operation of high-performance green buildings, according to the U.S. Green Building Council.

^oAlthough EISA does not designate an implementing agency for Section 438, Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance, issued in October 2009, directs EPA, in coordination with other federal agencies as appropriate, to issue guidance on implementation of Section 438 within 60 days of the date of the order.

^pApplies to sponsors of federal facility development or redevelopment projects with a footprint of more than 5,000 square feet. Section 438 does not define the term predevelopment hydrology.

^qGeothermal heat pumps can be used to heat, cool and, if so equipped, supply a facility with hot water by using the constant temperature of the earth as the exchange medium instead of the outside air temperature. Relative to air-source heat pumps, geothermal heat pumps are highly efficient, last longer, need little maintenance, and do not depend on the temperature of the outside air.

Two implementing agencies—GSA and DOE—have plans to address key EISA high-performance federal building requirements with Recovery Act funds. Specifically, GSA plans to use about \$4 million in Recovery Act funding specifically appropriated to fund its Office of Federal High-Performance Green Buildings.³⁹ In addition, GSA received a far larger amount—\$4.5 billion—in Recovery Act funding to convert some GSA facilities to high-performance green buildings and has developed a specific list of projects for this funding. These funding amounts were specifically appropriated for these purposes. DOE also received Recovery Act funding that, although not specifically appropriated for meeting key EISA high-performance federal building requirements, is available for more general energy efficiency activities. DOE officials said DOE plans to use some of this funding—at least \$73 million—to help meet EISA high-performance federal building requirements, such as collecting and managing energy use

³⁹Pub. L. No. 111-5, title IV, 123 Stat. 149 (2009).

data.⁴⁰ OMB received no Recovery Act funds. While EPA did receive Recovery Act funds, the funds were directed for purposes other than implementing EISA high-performance federal building requirements.⁴¹

GSA Plans to Use Recovery Act Funds to Operate Its Office of Federal High-Performance Green Buildings and Implement Identified Energy Efficiency Projects

The Recovery Act appropriated \$4 million for GSA's Office of Federal High-Performance Green Buildings. Although EISA authorized funding for this office, these funds were never appropriated. GSA nevertheless established this office in March 2008, using funds from the agency's annual appropriations act. According to the Acting Director of GSA's Office of Federal High-Performance Green Buildings, prior to the infusion of Recovery Act funds, the office was staffed by an Acting Director and other nondedicated staff who were pulled in to conduct the office's activities as necessary. The GSA Recovery Act plan for this office explains that the Recovery Act funds are to provide for salaries and expenses for the office, including resources for nine full-time-equivalent positions,⁴² travel, training, supplies, and other support costs.

In addition, GSA received a far larger amount—\$4.5 billion—in Recovery Act funding to convert some GSA facilities to high-performance green buildings and has developed a specific list of projects for this funding.⁴³

⁴⁰Other agencies with significant real property holdings, such as DOD and VA, have received Recovery Act funding that is available to help them meet EISA high-performance federal building requirements. For example, the Recovery Act provides various service branches of DOD with a total of \$3.84 billion targeted for improving, repairing, and modernizing DOD facilities; restoring and modernizing real property (including barracks); and investing in energy efficiency improvements for DOD facilities. In addition, the Recovery Act provides VA with \$1 billion for nonrecurring maintenance, including energy projects, for its medical facilities.

⁴¹Even if agencies do not receive specific appropriations to carry out EISA high-performance federal building requirements, they must still comply with the requirements using annual or other appropriations.

⁴²A full-time equivalent position generally consists of one or more employed individuals who collectively complete 2,080 work hours in a given year. Therefore, either one full-time employee or two half-time employees equal one full-time equivalent.

⁴³This amount includes \$127 million for building operations and the administrative costs of completing these projects; \$108 million for space rental in connection with these projects; and \$3 million for on-the-job training programs registered with the Department of Labor for the construction, repair, and alteration of federal buildings. The Recovery Act also provides \$750 million for federal buildings and U.S. courthouses and \$300 million for border stations and land ports of entry, and GSA has similarly identified specific projects for this funding. GSA's Recovery Act spending plan states that these projects will meet EISA high-performance federal building requirements.

GSA has developed a plan that identifies specific energy efficiency projects for this funding. These projects will help GSA and other agencies meet EISA high-performance federal building requirements.⁴⁴ To select these projects, GSA considered two criteria: their potential for job creation (a key Recovery Act goal) and for transforming federal buildings into high-performance green buildings.⁴⁵ According to the Acting Director of GSA's Office of Federal High-Performance Green Buildings, Congress expects GSA to revise project designs that predated EISA to ensure they meet EISA high-performance federal building requirements. Accordingly, GSA is revising existing designs to improve their design performance.

DOE Plans to Use at Least \$73 Million in Recovery Act Funds for Data Collection and Management, Technical Assistance, and Research

DOE plans to use at least \$73 million in Recovery Act funds to help implement EISA high-performance federal building requirements, according to DOE officials. DOE plans to use this funding to collect and manage energy data, provide technical assistance, and for research, as detailed below.

- *Implementing a Web-based tracking system.* DOE plans to use \$1.4 million to implement the Web-based tracking system required by EISA Section 432. This system will collect agency-provided data on energy and water management activities in federal buildings. DOE officials said that, without the funding provided in the Recovery Act, DOE would not have had the resources to develop the required Web-based tracking system this year, since no other specific appropriations were made.
- *Transferring energy intensity data.* DOE plans to use \$1.1 million to transfer energy intensity data from a legacy system the agency has used to collect this information since 1978 to a new system it plans to acquire. Moreover, the new system will link with EPA's ENERGY STAR Portfolio Manager to streamline data collection for the agencies that use Portfolio Manager, according to DOE. Linking Portfolio Manager to the new system is important because, according to DOE officials, DOE is likely to identify

⁴⁴Although GSA will be responsible for these energy efficiency projects, other federal agencies that lease facilities from GSA will benefit from the reduction in energy consumption and will therefore be in a better position to meet EISA requirements.

⁴⁵These projects are outside the scope of this report; however, we are currently reviewing GSA's planned use of the Recovery Act funding to convert GSA facilities to high-performance green buildings and will issue a separate report on our results.

Portfolio Manager as the preferred benchmarking system under EISA Section 432 for agencies to track energy and water use.⁴⁶

- *Providing technical assistance.* DOE will spend \$20.5 million to provide technical assistance to federal agencies through its national laboratories, in part to help agencies meet EISA high-performance federal building requirements. As part of this effort, in March 2009, DOE's FEMP notified federal agencies that FEMP plans to expand support to agencies and provide funding to laboratories to assist agencies in making management decisions on investments in energy efficiency and the deployment of renewable energy sources. Citing the challenges and opportunities posed by the Recovery Act and EISA, FEMP highlighted the capabilities and expertise at 10 national laboratories and contractors and offered its assistance in working with the labs. Finally, FEMP provided details on the national laboratories' specialty areas. For example, among many other specialty areas, DOE's Argonne National Laboratory in Chicago, Illinois, specializes in strategic energy planning and analysis, and the Lawrence Berkeley National Laboratory in Berkeley, California, specializes in renewable energy procurement and lighting technologies.
- *Conducting building energy efficiency research.* DOE plans to award up to \$50 million to one or more of its national laboratories for research associated with improving building energy efficiency. Specifically, on June 29, 2009, DOE called for project nominations from its laboratories to either construct or alter an existing building to conduct research on building system design, integration, and control to achieve the ultimate goal of more energy efficient buildings.

OMB and EPA Did Not Receive Recovery Act Funds for Implementing EISA High-Performance Federal Building Requirements

OMB received no Recovery Act funds. While EPA did receive Recovery Act funds, the funds were directed for purposes other than implementing EISA high-performance federal building requirements. EPA and OMB have been using annual appropriations to carry out activities to implement key EISA high-performance federal building requirements.

⁴⁶According to an EPA official, as of February 2009, Portfolio Manager contained data on 11.5 billion square feet of office space and 83,000 separate offices.

Agencies Will Likely Face Challenges Meeting EISA Energy Reduction and Energy and Water Management Requirements

In the future, agencies will likely face challenges meeting requirements for (1) reducing energy intensity, (2) decreasing and eventually eliminating the use of energy generated from fossil fuels, (3) conducting new federal energy and water management activities, and (4) meeting ENERGY STAR leasing requirements. In addition, long-term funding and capital budgeting issues, specifically the requirements for recognizing capital costs up front in the federal budget, will continue to pose overarching challenges to agencies' ability to meet all of EISA's high-performance federal building requirements. Effective energy management practices, such as ensuring accurate data are collected or monitored, can help agencies address some of these challenges.

Meeting More Stringent Requirements for Reducing Energy Intensity without Credits for Renewable Energy and Other Factors May Pose Challenges

As federal agencies make progress in meeting EISA requirements, some agencies will likely face challenges achieving more stringent energy intensity reduction goals, as set forth in Section 431, particularly as the use of credits for renewable energy purchases, which currently can be used for meeting EISA's energy intensity goals, is phased out by 2012, pursuant to DOE guidance.⁴⁷ These requirements are shown in table 2.

Table 2: Energy Intensity Reduction Goals for Federal Buildings in EISA Title IV, Subtitle C, Section 431

Fiscal year	Percentage reduction goal from baseline fiscal year 2003
2008	9
2009	12
2010	15
2011	18
2012	21
2013	24

⁴⁷Agencies can receive credit toward meeting energy intensity goals through the purchase of renewable energy or renewable energy certificates. Under current DOE guidance, buyers of renewable energy and renewable energy certificates can claim the credit for the renewable energy and use it to offset a percentage of their annual electricity consumption. According to DOE, the amendments to NECPA made by EPAAct 2005 and EISA are silent on whether purchases of renewable energy can be used to achieve energy intensity reduction goals. Under Executive Order 13123, 64 Fed. Reg. 30851 (June 8, 1999), which was revoked by Executive Order 13423, 72 Fed. Reg. 3919 (Jan. 26, 2007), agencies were permitted to credit renewable energy purchases toward meeting energy intensity goals. In fiscal year 2008, these credits began to be phased out for this purpose, per DOE's Renewable Energy Requirement Guidance for EPAAct 2005 and Executive Order 13423.

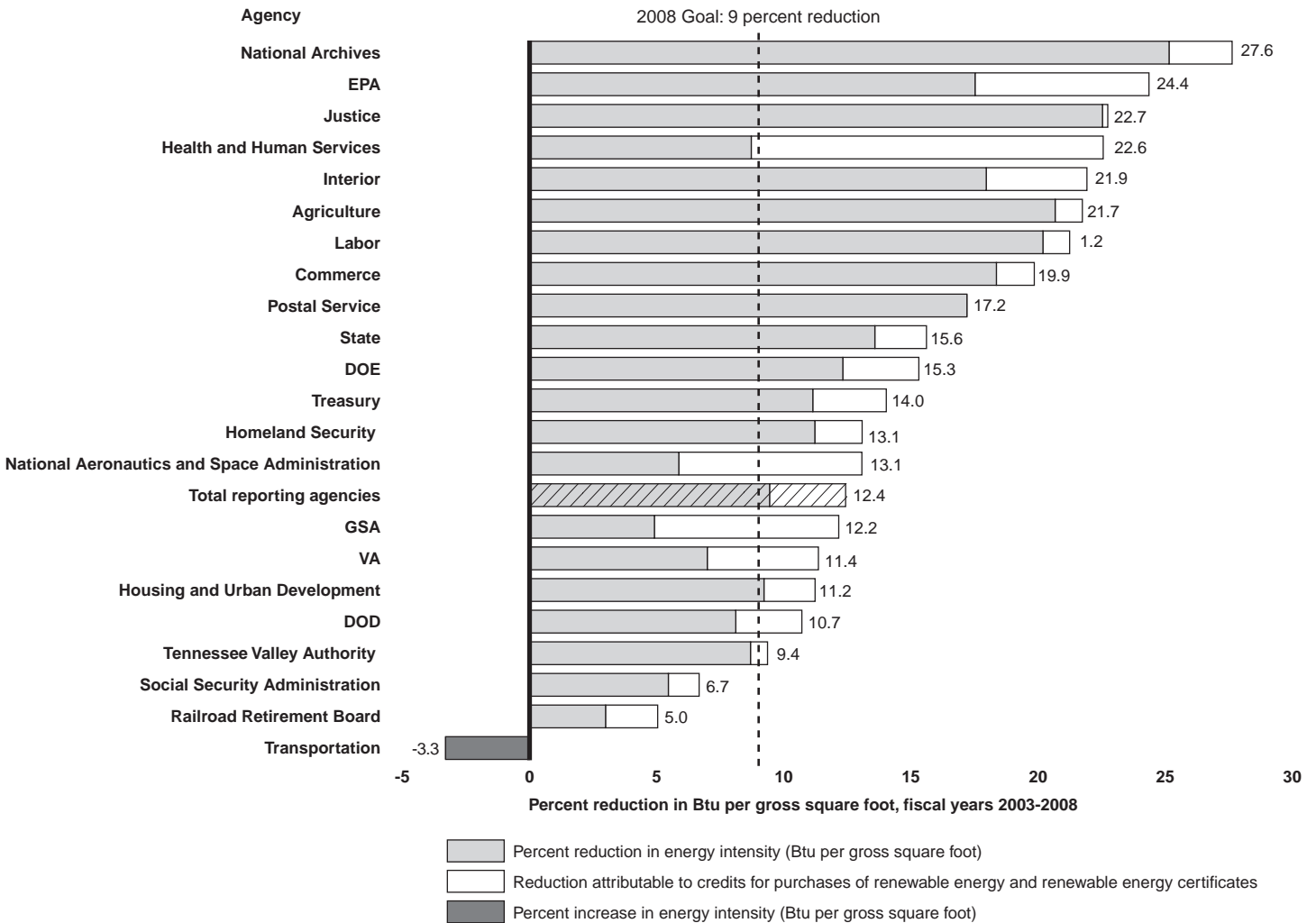
Fiscal year	Percentage reduction goal from baseline fiscal year 2003
2014	27
2015	30

Source: EISA Section 431.

Note: Energy intensity is defined as energy consumption, measured in British thermal units (Btu) per gross square foot.

According to draft DOE data, 19 of 22 federal agencies met EISA’s fiscal year 2008 requirement for reducing energy intensity by 9 percent. However, without the use of credits for renewable energy purchases, 6 fewer agencies would have met the requirement. Furthermore, with the use of credits, the federal government as a whole decreased its building energy use by 12.4 percent in fiscal year 2008, but without the use of credits, the total decrease was 9.4 percent, or 0.4 percent beyond the goal. Figure 1 shows the fiscal year 2008 reduction in energy intensity for these 22 agencies.

Figure 1: Agencies' Reductions in Energy Intensity, Including Partial Credits for Purchases of Renewable Energy and Renewable Energy Certificates, Fiscal Year 2008



According to DOE officials, some agencies will have difficulty meeting future requirements without the use of credits for renewable energy purchases. For example, as figure 1 shows, neither GSA, DOD, nor VA would have met the fiscal year 2008 energy intensity requirements without the use of credits. Combined, these three agencies represent approximately 70 percent of the federal government's total building energy use. VA officials told us their agency was preparing to meet EISA energy intensity goals without credits but that the credits' phase-out would create

challenges for the agency over the next 2 to 3 years. Furthermore, the Acting Director of GSA's Office of Federal High-Performance Green Buildings said that without the availability of Recovery Act funds, it would be very difficult for GSA to meet energy intensity requirements over the next 2 years as the use of credits for the purchase of renewable energy is phased out.

Along with the phase-out of credits for renewable energy purchases, agency officials identified other challenges that are likely to affect agencies' ability to meet EISA energy intensity requirements. DOE, EPA, and VA officials cited increases in agency workloads or facility use as a challenge to meeting EISA energy intensity requirements. For example, a senior EPA official responsible for the agency's energy planning and facility management said that increases in EPA's workload due to a planned expansion of climate change research in EPA's laboratories, which use a large amount of energy, would likely lead to higher energy demands in the future. VA officials observed that increases in the number of patients or in the level of care provided at an individual VA hospital facility could increase the facility's operating hours, energy use, and energy intensity even if the facility's space was being used more efficiently. Furthermore, VA officials attributed much of VA hospitals' energy use to equipment with high energy demands, such as Magnetic Resonance Imaging machines.⁴⁸ Finally, agency officials noted that increases in building and facility use present challenges in meeting EISA energy intensity requirements. Specifically, agency officials noted that energy intensity, which is annually measured as energy consumption per gross square foot, may not always provide the best metric to measure agencies' energy efficiency and conservation progress. For example, DOE and GSA officials said that if an agency increases the number of employees working in a single facility, such as through staff consolidation, total energy consumption may decrease and the space may be used more efficiently, but energy intensity is likely to increase, conflicting with EISA energy intensity goals.

⁴⁸Although DOD, EPA, and VA officials acknowledged that agencies are permitted to exempt certain high energy intensity buildings from this requirement, they said their agencies would try to meet these goals and, to date, have avoided using exemptions. 42 U.S.C. § 8253(2) allows agencies to exempt buildings, and the associated energy consumption and gross square footage, in which energy intensive activities are carried out. According to draft DOE data for fiscal year 2008, neither EPA nor VA exempted any of their facilities. DOD exempted facilities equaling roughly 5 percent of its total facility energy use.

Finally, agency officials and stakeholder organizations said it can be challenging to upgrade older, particularly historic, federal buildings because these buildings are more difficult and expensive to upgrade and plans for their renovation may conflict with historic preservation rules. Officials from EPA and the National Institute of Building Sciences (NIBS) stated that many of the easy, cost-effective energy savings techniques have already been implemented in existing federal buildings and that in the future it will be more difficult and expensive to achieve additional energy savings. Historic federal buildings may be particularly difficult to upgrade, in part because of historic building preservation rules that, according to VA officials, can greatly limit the available energy efficiency renovation options. They noted, for example, that state historic preservation officials have denied requests to install new, more energy efficient windows in historic buildings.

Agencies Will Likely Face Challenges in Meeting EISA Requirements for Reducing Their Use of Energy Generated from Fossil Fuels

Beginning in 2010, Section 433 of EISA requires agencies to substantially decrease and eventually eliminate their consumption of energy generated from fossil fuels in new federal buildings and those undergoing major renovations by fiscal year 2030. Table 3 shows the required reductions.⁴⁹

Table 3: Fossil Fuel Generated Energy Use Reduction Requirements in EISA Title IV, Subtitle C, Section 433 for New Buildings and Those Undergoing Major Renovations

Fiscal year	Percentage reduction required from baseline year 2003
2010	55
2015	65
2020	80
2025	90
2030	100

Source: EISA Section 433.

Note: The baseline will be determined by DOE regulations and may be calculated based on the Commercial Buildings Energy Consumption Survey.

Because this requirement has not yet gone into effect and, at the time of our review, DOE had not issued the final regulations for achieving reductions in energy generated from fossil fuels, we were not able to fully

⁴⁹Specifically, Section 433 directs DOE to issue, by rule, revised federal building energy efficiency performance standards requiring agencies to eliminate the use of energy generated from fossil fuel in federal buildings by fiscal year 2030. As part of its regulatory process for Section 433, DOE will also issue a definition of the term “major renovation” using specific criteria set forth in Section 433 (a).

review the challenges agencies will face in implementing this provision. Notwithstanding these limitations, numerous agency officials and stakeholder organizations we spoke with stated that meeting the long-term requirements of this provision would be very challenging and impractical and would require significant capital investments and technological advancements by 2030. Specific challenges identified by agency officials include the following:

- *Energy efficiency and conservation efforts will not be enough; renewable energy generation will be needed.* A DOE official with the office responsible for developing DOE's regulations stated that the requirement, particularly the long-term goal of eliminating the use of energy generated from fossil fuels in new buildings and major renovations by 2030, is very stringent and cannot be met with energy efficiency and conservation efforts alone. To meet this goal, the official stated that agencies will need to generate their own energy from renewable sources, which at this time is expensive and difficult because these technologies have limited energy production capabilities.
- *Buildings may lack space to generate renewable energy.* The Acting Director of GSA's Office of Federal High-Performance Green Buildings stated that while near-term goals for reducing fossil fuel energy use by 55 percent would largely be attainable through energy efficiency and conservation efforts,⁵⁰ the long-term goals of eliminating the use of such energy would be very difficult to meet, particularly for facilities in cities. The official said this overall goal, in his view, could more easily be met if DOE regulations allow agencies to use the total renewable energy generated by all of their buildings together, rather than require each individual facility to generate all of its own power. For example, GSA buildings in more rural locations could generate more renewable energy on-site than they would need for their own consumption, offsetting consumption in more urban GSA buildings that lack space for renewable

⁵⁰In commenting on a draft of this report, GSA stated that preliminary assessments from DOE and the American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) indicate that the near-term EISA goal of a 55 percent reduction in energy generated from fossil fuels would be achieved by meeting the prior statutory requirement to perform 30 percent better than the energy code (ASHRAE 90.1), which is contained in EAct 2005. GSA further stated that the costs of complying with EISA Section 433 requirements are incorporated into GSA's budgets for any facility designs beginning in fiscal year 2010 and appropriate Recovery Act contracts.

energy generation. Therefore, although the agency might not attain the goal for each building, it could achieve it overall.⁵¹

- *High energy intensity buildings may be unable to generate enough renewable energy.* EPA, VA, and DOD officials we spoke with said it would be very difficult and impractical for their agencies to meet the long-term requirement for many of their high energy intensity buildings. For example, a senior EPA official responsible for energy planning and facility management stated that energy intensive buildings, including laboratories and data centers, make up about 94 percent of EPA's facilities.⁵² Given the nature of its building portfolio, EPA would be required to develop significant on-site renewable energy generation capabilities, which the official said would be expensive and impractical. The same official also said it would be nearly impossible for certain EPA facilities to meet this requirement without the use of credits for purchases of renewable energy. VA officials similarly stated that even with enormous upfront expenditures for renewable energy, this requirement could not be met for certain VA high energy intensity facilities, such as hospitals that rely extensively on high energy intensity equipment or are located in certain geographic areas lacking in good sources of renewable energy. A senior DOD official responsible for facilities and installations energy management also noted that this requirement would be very difficult to meet for high energy intensity buildings such as intelligence centers. The official further noted that while the section allows individual building exemptions,⁵³ applying for the exemptions would likely be difficult administratively, particularly because DOD has numerous installations with multiple buildings.⁵⁴

⁵¹The GSA official noted that while other agencies can submit a request for an exemption from this requirement for specific buildings, GSA cannot. The American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009), which was passed by the House on June 26, 2009 would, if passed as written, authorize GSA to make a determination where applicable, that it is technically impracticable to achieve the required fossil fuel reduction for specific federal buildings and petition Congress for a waiver of those facilities. See H.R. 2454, § 161(b)(3)(B)(ii), 111th Cong. (2009).

⁵²This percent refers to EPA's reporting facilities—those for which EPA directly pays the utility bills. According to EPA, of EPA's 175 facilities, 34 are reporting facilities and 32 are energy intensive.

⁵³Section 433 of EISA allows for agencies, with the exception of GSA, to apply for exemptions for certain facilities through the Secretary of Energy.

⁵⁴We are conducting a separate review of DOD's use of credits for purchases of renewable energy.

Although agencies and stakeholder organizations said that agencies would likely not achieve the long-term fossil fuel energy reduction goal with current technology, some stakeholder organizations we spoke with, including the American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) and the American Institute of Architects (AIA), said they were optimistic agencies would be able to meet this goal because, in their opinion, new guidance and technologies, such as those for improved renewable energy generation, would be available by 2030.⁵⁵

Agencies Will Likely Face Challenges Meeting EISA's Energy and Water Management Requirements

Under Section 432 of EISA, agencies are required to designate facility energy managers who are responsible for reducing energy use at covered facilities, conducting comprehensive energy and water evaluations of such facilities, and benchmarking their covered facilities' energy use—that is, comparing energy and water use in their facilities and in other similar buildings. As part of these efforts, facility energy managers must identify and assess measures for recommissioning or retrocommissioning their facilities—techniques used to ensure that building systems are operating as efficiently as intended.⁵⁶ While we and officials from agencies and stakeholder organizations have noted the importance of effective energy management practices, such as conducting energy evaluations and commissioning, agency officials told us that some agencies may still find it difficult to benchmark their facilities because their portfolios include a

⁵⁵There are requirements outside of EISA Title IV, Subtitle C that might help achieve the development of this new technology. Specifically, Section 422 of EISA established the Zero-Net-Energy Commercial Buildings Initiative within DOE, with the goal of advancing the development and establishment of zero net energy for any commercial building constructed in the United States by 2030, among other goals. To help achieve this goal, the Zero-Net-Energy Commercial Buildings Initiative conducts research, conducts pilot and demonstration projects, and develops training materials, among other activities.

⁵⁶Section 432 of EISA defines commissioning, with respect to a facility, as a systematic process of ensuring, through the use of appropriate verification and documentation, that beginning with the initial day of the design phase of the facility and ending not earlier than 1 year after the date of completion of the facility's construction, that all facility systems perform interactively, in accordance with (1) the design documentation and intent of the facility and (2) the operational needs of the owner of the facility, including the preparation of operations personnel. According to EISA, the primary goal of commissioning is to ensure the full functioning of systems so that they can be properly operated and maintained during the useful life of the facility. Recommissioning is the process of commissioning a facility or system beyond the project development and warranty phases, and its primary goal is to ensure optimum performance over the facility's useful life, while meeting building occupancy requirements. Retrocommissioning is a process of commissioning a facility or system that was not commissioned at the time of construction.

large number of unique building types. For example, a senior DOD official responsible for facilities and installations energy management stated that DOD is currently unable to benchmark DOD's facility energy and water use by using EPA's Portfolio Manager because DOD has many unique facilities that are not comparable to commercial facilities or even to other DOD facilities. For example, military bases such as Fort Bragg and Camp Lejeune have different missions and, as a consequence, varying levels of energy and water use. The official said that DOD has had discussions with DOE to resolve this issue. Additionally, a DOE official responsible for collecting agency energy data said that some agencies have unique building structures, such as radar stations, which may make up a significant portion of these agencies' total buildings. The official said that while evaluating these structures will not necessarily pose a challenge, agencies will likely reap limited savings from required energy and water evaluations because most of these energy and water needs are fixed and typical building efficiency measures are not applicable.

According to DOE, VA, and DOD officials, conducting energy and water evaluations and commissioning activities required by Section 432 can be costly. Section 432 requires federal agencies to designate energy managers to conduct energy and water evaluations annually for approximately 25 percent of an agency's covered federal facilities so that each facility is evaluated at least once every 4 years. DOE stated that the optimal frequency for recommissioning electro-mechanical equipment is 4 years and that longer than 4 years would be unresponsive to the need for periodic maintenance and the potential opportunities for using new technologies. DOE officials acknowledged, however, that recommissioning every 4 years could be costly. VA officials estimate, for example, that VA would spend between 8 cents and 15 cents per square foot to evaluate approximately 38 million square feet of facility space each year to meet EISA high-performance federal building requirements, which would cost approximately \$3 million to \$5.7 million annually. Moreover, a senior official responsible for DOD's facilities and installations energy management stated that an evaluation would not likely be needed every 4 years because limited energy and water saving opportunities could be realized within such a short time frame. The official suggested that it would be more efficient and practical to conduct these activities over a longer interval, such as every 10 years.

Finally, our previous work has shown that agencies sometimes lack dedicated, knowledgeable energy management staff with the right expertise to help them achieve energy goals.⁵⁷ An EPA official noted that finding and retaining facility energy managers with the appropriate level of expertise is important but challenging; without effective energy management, agencies could have difficulty achieving certain EISA energy and water management requirements.

EISA ENERGY STAR Leasing Requirements May Be Difficult for Federal Agencies to Meet in Certain Situations

Agency officials we spoke with provided differing assessments of the impact of Section 435's leasing requirements, which will take effect on December 19, 2010. For example, a DOD leasing official noted that DOD leases a large amount of space both domestically and internationally and that implementing EISA's leasing requirements will be particularly difficult in certain circumstances. Furthermore, DOD stated that while this section provides a number of exceptions to leasing space in an ENERGY STAR rated building, agencies must still ensure the landlords carry out energy efficiency and conservation measures for any new government lease executed under one of the exceptions. DOD officials stated that these additional requirements would also be onerous to implement. Conversely, an official with EPA's ENERGY STAR program and a representative with the Building Owners and Managers Association said that the exceptions to Section 435 appear to greatly limit the impact of the requirement.⁵⁸ The Acting Director for GSA's Office of Federal High-Performance Green Buildings said he does not anticipate that Section 435's leasing requirements will be particularly onerous to meet initially, particularly in major metropolitan areas, which have a robust market for commercial office space. However, in commenting on a draft of this report, GSA acknowledged that there is a potential cost consequence of the EISA ENERGY STAR leasing requirement, since it inherently limits competition to the top 25 percent of buildings in energy efficiency.⁵⁹

⁵⁷GAO, *Federal Energy Management: Addressing Challenges Through Better Plans and Clarifying the Greenhouse Gas Emission Measure Will Help Meet Long-Term Goals for Buildings*, GAO-08-977 (Washington, D.C.: Sept. 30, 2008).

⁵⁸For a list of exceptions to ENERGY STAR leasing requirements, see app. II.

⁵⁹To receive an ENERGY STAR label, a building must rank in the top 25th percentile for its building type in EPA's Portfolio Manager database. Additionally, the whole building must be certified and therefore the agency must take energy efficiency and conservation steps throughout the building for it to receive a certification.

Despite differing assessments about the impact of this provision, DOD, GSA, and VA officials agreed that in some circumstances it may be difficult for agencies to meet Section 435's ENERGY STAR leasing requirements. Specifically, these officials told us that if an agency leases a relatively small percentage of a building's total space and the building does not already have an ENERGY STAR label, the agency may have difficulty persuading the landlord to make the improvements needed to achieve certification. For example, DOD leases space in approximately 2,945 different locations to house its recruiting centers. These centers are typically retail space within strip malls that may have many other tenants. In such locations, it will be difficult to lease ENERGY STAR-rated space or to require landlords to make energy efficiency and conservation improvements to the entire strip mall, according to a DOD leasing official. In commenting on a draft of this report, DOD added it is also concerned about the impact this requirement will have on leased housing for its recruiters. DOD commented that the agency faces difficulties finding housing for its recruiters in small markets and this requirement will add to that difficulty. VA officials also noted that VA leases space for health clinics in locations convenient to its patients and, in some cases, would face similar challenges in meeting this requirement. Furthermore, the DOD official expressed concern that while Section 435, as written, appears to apply to leased space in typical commercial buildings in the United States, it also appears to contain no explicit exclusion that recognizes the different circumstances encountered when leasing in foreign locations. According to the official, it would not be possible for DOD to lease ENERGY STAR-rated space in the buildings and facilities it leases in locations such as Afghanistan and Iraq. Moreover, requiring landlords to implement substantial energy efficiency and conservation improvements in these locations would be very difficult and impractical, according to the official.

Long-Term Funding and Budgeting Issues Pose Overarching Challenges for Agencies in Meeting All EISA High-Performance Federal Building Requirements in the Future

Although Recovery Act funds provide resources to help some agencies implement energy savings projects and meet EISA high-performance federal building requirements in the near future, long-term funding and capital budgeting issues will pose implementation challenges in later years, according to agency officials and stakeholder organizations. For example, to meet energy intensity requirements alone, DOE estimated that from fiscal year 2009 through fiscal year 2015, the federal government as a whole would need to invest approximately \$1.4 billion annually in energy-related projects. Such investments compete with other priorities for agency funding, as agency officials and we have noted in previous reports.⁶⁰ Already, budget constraints and limited funding have contributed to agencies' increased reliance on energy savings performance contracts and other alternative financing mechanisms to implement energy efficiency projects.⁶¹ However, officials with DOD and EPA, as well as our previous work, have indicated that such contracts can be very difficult and time consuming to establish and cannot be used to fully meet agencies' capital needs.⁶² Furthermore, we have previously reported that although these contracts allow agencies to avoid up-front project costs, they pose management challenges and are typically more expensive in the long term than up-front funding.

In addition to funding issues, agency officials, stakeholder organizations, and we have noted that capital budgeting issues, specifically requirements for recognizing capital costs up front in the federal budget, can discourage capital investments even though such investments can be more cost effective in the long term. Hence, these budgeting requirements could discourage investments in high-performance federal building improvements because the improvements often entail up-front capital costs. Even though such improvements are often paid for through future energy savings and reduced operating costs, these long-term benefits may not be sufficient to offset the immediate disincentive created by the initial up-front costs, which compete with other agency priorities. For example, a senior EPA official responsible for energy planning and facilities noted that although the agency's offices are able to receive some immediate

⁶⁰GAO, *Energy Savings: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests*, [GAO-05-340](#) (Washington, D.C.: June 22, 2005).

⁶¹Energy savings performance contracts are alternative financing mechanisms that primarily rely on third parties to fund projects with the promise that the agencies will repay the third parties from energy savings.

⁶²[GAO-05-340](#).

financial benefits from energy savings, future budgets will be based on smaller operating costs that will not allow EPA's offices to recoup their initial investment, creating a disincentive for EPA offices to pursue energy savings projects. We have previously reported that the federal government faces competing pressures associated with supporting energy-saving investments while at the same time seeking to ensure budgetary transparency of full program costs to protect the government's financial interests.⁶³

Effective Energy Management Practices Can Help Agencies Meet Key EISA High-Performance Federal Building Requirements

To help overcome the challenges to meeting EISA high-performance federal building requirements, officials from agencies and stakeholder organizations and our previous work have discussed the importance of effective energy management. In particular, our previous work has recognized that agencies face challenges in meeting federal energy goals. These challenges include not having dedicated energy staff with appropriate expertise and not having reliable energy use data. We have recommended that DOE issue guidance for agencies on how to develop long-term energy plans to meet future federal energy goals.⁶⁴ Additionally, officials from agencies and stakeholder organizations and our previous work have identified the three following effective energy management practices:

- *Ensuring energy management staff have proper expertise and training.* We previously reported that some agencies lacked the staff expertise needed to oversee energy management activities.⁶⁵ Specifically, we reported that some agencies lacked dedicated, skilled energy managers as well as trained staff capable of overseeing and managing energy savings performance contracts. An EPA official told us that, along with providing training, it is important for agencies to employ staff with the right technical expertise to operate sites efficiently to meet EISA goals. According to a VA official, VA requires its energy managers to be engineers and has lead engineers who provide guidance and additional training to

⁶³GAO, *Capital Financing: Partnerships and Energy Savings Performance Contracts Raise Budgeting and Monitoring Concerns*, [GAO-05-55](#) (Washington, D.C.: Dec. 16, 2004).

⁶⁴[GAO-08-977](#). In response to our recommendation, DOE developed draft long-term planning guidance and reported making it available to agencies (who participated in its development) in 2008 as part of energy reporting guidance for fiscal year 2007. DOE also reported that it would include elements of this guidance in its guidance implementing Section 432 of EISA.

⁶⁵[GAO-08-977](#).

less experienced staff. AIA officials emphasized the importance both of having expertise and of providing ongoing training to keep managers at all levels abreast of the latest energy efficiency technology. Finally, ASHRAE officials stated that it is important for personnel to have the right expertise and training at all levels of energy management, including the project managers, facilities management personnel, and procurement officers, as well as the building's occupants to ensure that facilities function as intended and that limited resources are used effectively.

- *Ensuring accurate data are collected and monitored.* Our previous work has shown that some federal facilities lack accurate data and that accurate monitoring of energy use is an important part of effective energy management and is needed to meet energy intensity goals.⁶⁶ A DOE official responsible for collecting agency energy data stated that federal agencies currently use different mechanisms to collect data on energy use, some of which are less accurate than others. For instance, some agencies use financial systems that provide data on utility bills for a group of buildings rather than for individual buildings, thereby making it difficult to identify particularly problematic buildings for energy efficiency improvements. We have previously noted that there is no federal energy management or data collection standard. Additionally, agency officials and officials from AIA, the Alliance to Save Energy, and the U.S. Green Building Council noted the importance of actively monitoring building energy use to ensure that a building continues to be operated efficiently after construction.
- *Using Integrated Project Delivery.* Finally, officials from AIA, ASHRAE, and NIBS all discussed the benefits of using a process called Integrated Project Delivery in new building construction and renovations. This process integrates people, systems, business structures, and practices and collaboratively employs all participants to optimize project results. AIA officials noted that this process is particularly critical to successful and efficient green building because it helps ensure that a building's stakeholders (designers, builders, operators, and tenants) collaborate on important issues associated with the facility's construction and operation at the beginning of the process, when any problems are least costly to fix. NIBS officials further stated that spending more time on front-end planning would help remove long-term barriers agencies face in attaining energy efficiency goals. Furthermore, according to the Federal Leadership in High Performance and Sustainable Buildings MOU, signed by a number of federal agencies in 2006, employing integrated design principles is an

⁶⁶ [GAO-08-977](#).

important strategy for designing, constructing, and operating federal facilities in an energy efficient and sustainable manner.

Concluding Observations

While DOE, GSA, OMB, and EPA are making progress in implementing and supporting other federal agencies' efforts to implement, EISA high-performance federal building requirements, their efforts are still largely in the early stages and thus provide only a limited picture of what agencies must do to meet EISA requirements and transform their facilities into high-performance federal buildings. The Recovery Act has provided critical near-term funding for GSA and DOE to help them carry out their EISA responsibilities. However, because agencies will continue to face limited funding and capital budgeting issues, along with the specific challenges presented by EISA high-performance federal building requirements, they are likely to find it difficult to meet some EISA requirements for reducing energy and water use. By engaging in practices such as properly training energy management staff and collecting accurate data, agencies will be in a better position to address these challenges.

Issues related to EISA's Section 433 requirement for DOE to identify a green building certification system raise important questions for the future. Because the building certification systems likely to be chosen by federal agencies are not required to ensure agencies will meet EISA high-performance federal building requirements, agencies will need to develop strategies to ensure that EISA energy and water requirements, among others, are met regardless of whether they attain green building certifications for their buildings. While actions in this area could be problematic in the future, we are not making recommendations at this time because DOE has not issued regulations to help agencies identify a green building certification system and it is too early to tell what, if any, additional actions may need to be taken.

Agency Comments

We provided DOE, GSA, OMB, EPA, DOD, and VA with a draft of this report for their review and comment. In commenting on a draft of this report, DOE, GSA, and DOD generally agreed with our findings and conclusions and provided written comments, which appear in appendixes IV, V, and VI. VA also generally agreed with the report and provided technical comments. OMB neither agreed nor disagreed with the report and provided technical comments. EPA did not provide comments on our report. We incorporated the technical and clarifying comments that we received from the agencies as appropriate.

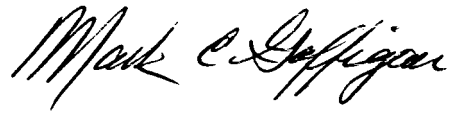
When we sent the draft of this report to the agencies for official comment, it contained a recommendation that the Secretary of Energy, the Administrators of EPA and GSA, and the Director of OMB work together and, in conjunction with the Interagency Sustainability Working Group and the future Federal Green Building Advisory Committee, identify and recommend to Congress an entity responsible for overseeing the implementation of EISA's storm water runoff requirements for federal development projects so that Congress can designate the appropriate entity. During the official comment period, Executive Order 13514 was issued, which directs EPA to issue guidance on EISA's storm water runoff requirements, directs agencies to follow EPA's guidance, and directs multiple entities, such as OMB, to monitor agencies' progress in implementing EPA's guidance. These activities appear to address the goal of our recommendation; therefore we deleted this recommendation from our final report.

We are sending copies of this report to interested congressional committees; the Secretary of Energy; the Administrators of the General Services Administration and the Environmental Protection Agency; the Director of the Office of Management and Budget; and the Secretaries of Defense and Veterans Affairs. In addition, this report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact Terrell Dorn at 202-512-6923 or DornT@gao.gov, or Mark Gaffigan at 202-512-3841 or GaffiganM@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix VII.



Terrell Dorn
Director, Physical Infrastructure

A handwritten signature in black ink, reading "Mark Gaffigan". The signature is written in a cursive style with a large, stylized 'M' and 'G'.

Mark Gaffigan
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

The Energy Independence and Security Act of 2007¹ (EISA) requires GAO to audit federal agencies' implementation of Title IV, Subtitle C requirements and report to Congress by October 31, 2009.² To do so, this report addresses: (1) what the implementing agencies—the Department of Energy (DOE), the General Services Administration (GSA), the Office of Management and Budget (OMB), and the Environmental Protection Agency (EPA)—are doing to carry out their responsibilities under EISA, which are directing and assisting federal agencies in meeting key EISA high-performance federal building requirements; (2) how implementing agencies are planning to use American Recovery and Reinvestment Act of 2009 (Recovery Act) funds to meet key EISA high-performance federal building requirements; and (3) what challenges implementing and other agencies may face as they take steps to meet EISA's high-performance federal building requirements.

To identify the steps implementing agencies are taking, which direct and assist agencies in meeting key EISA high-performance federal building requirements, we first reviewed EISA requirements contained in Title IV, Subtitle C of the act. We identified DOE, GSA, OMB, and EPA as implementing agencies because EISA assigns implementation responsibilities to them or they have assumed certain implementation responsibilities. We then identified key EISA high-performance federal building requirements through discussions with agency officials and stakeholder organizations. In addition, we determined which provisions contain specific requirements for the implementing agencies that are applicable during the period covered by this review. We ultimately chose not to review several requirements. For example, we did not review the requirements in Sections 433 and 435 for the Federal Acquisition Regulatory Committee to develop regulations because they had yet to take effect.³ We met with officials from DOE's Federal Energy Management

¹Pub. L. No. 110-140, 121 Stat. 1492.

²Pub. L. No. 110-140, § 437, 121 Stat. 1492, 1619—20. The act also required GAO to report by October 31, 2008. GAO met this requirement by issuing a report ([GAO-09-111R](#)) on that date.

³For an outline of the key requirements contained in this report, see table 1. For a more detailed summary of all requirements contained in Title IV, Subtitle C, see app. II.

Program, GSA's Office of Federal High-Performance Green Buildings,⁴ EPA's Energy Star Program and Office of Water, and OMB's Energy and GSA Branches, and reviewed agency-provided documentation, including draft and final regulations and guidance, and draft energy and water data. We attended a meeting of the Interagency Sustainability Working Group in February 2009 and the U.S. Green Buildings Council Federal Summit in May 2009 to learn more about the government's efforts to make federal buildings more energy efficient. Moreover, we met with officials from the Office of the Federal Environmental Executive, a body responsible for overseeing energy efficiency and sustainable building goals, to determine this office's role in EISA implementation.⁵ We also reviewed prior GAO, Congressional Research Service, and Congressional Budget Office reports on federal green building efforts. Additionally, we obtained from DOE draft energy intensity data for fiscal year 2008 and draft data on agencies' energy and water management activities as of June 2009. We assessed the reliability of the data and determined that the data were sufficiently reliable for our purposes, which was to provide preliminary information on agencies' progress in implementing certain EISA requirements.

To determine how implementing agencies are planning to use funds provided by the Recovery Act to implement key EISA high-performance federal building requirements, we reviewed DOE's, GSA's, and EPA's plans

⁴According to EISA Section 401, a high-performance green building is a building that, during its life cycle, achieves a number of environmental goals. Specifically, compared with similar buildings (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency), a high-performance green building (1) reduces energy, water, and material resource use; (2) improves indoor environmental quality, including reducing indoor pollution, improving thermal comfort, and improving lighting and acoustic environments that affect occupant health and productivity; (3) reduces negative impacts on the environment throughout the life cycle of the building, including air and water pollution and waste generation; (4) increases the use of environmentally preferable products, including biobased, recycled content, and nontoxic products with lower life cycle impacts; (5) increases reuse and recycling opportunities; (6) integrates systems in the building; (7) reduces the environmental and energy impacts of transportation through building location and site design that support a full range of transportation choices for users of the building; and (8) considers indoor and outdoor effects of the building on human health and the environment, including: (a) improvements in worker productivity; (b) the life cycle impacts of building materials and operations; and (c) other factors that the Federal Director or the Commercial Director consider to be appropriate.

⁵Specifically, the Office of the Federal Environmental Executive oversees the implementation of Executive Order 13423.

to use Recovery Act funds and interviewed agency officials.⁶ OMB did not receive any Recovery Act funding. We also reviewed OMB's guidance to federal agencies for using Recovery Act funds.

To determine what challenges agencies might face as they take steps to meet EISA high-performance federal building requirements, we met with the previously identified agency officials as well as officials from the Departments of Defense (DOD) and Veterans Affairs (VA). We chose to include DOD and VA because they both manage a significant stock of federal facilities and together account for approximately 63 percent of the energy consumed by federal facilities. In addition, we met with officials from the following nongovernmental stakeholder organizations with expertise in this area:

- Alliance to Save Energy
- American Institute of Architects
- American Society for Heating, Refrigeration, and Air Conditioning Engineers
- Building Owners and Managers Association
- National Association of Energy Services Companies
- National Institute of Building Sciences
- Natural Resources Defense Council
- U.S. Green Building Council

We selected these organizations, including industry and advocacy groups, because of several factors, including agency recommendations and documentation, their varied areas of expertise, and their involvement in developing or aiding implementation of EISA requirements. We also reviewed relevant documentation provided by these sources, such as

⁶American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115. While the Recovery Act provides funds to stimulate the economy and create jobs as well as, in some cases, further other policy goals, we did not examine how the key implementing agencies' planned use of Recovery Act funds would contribute to meeting the Recovery Act's goals.

reports on high-performance federal buildings and energy conservation measures, and prior GAO reports. Furthermore, during our discussions with agency officials and stakeholder organizations, we identified energy management practices that can help agencies meet EISA high-performance federal building requirements, which we discuss in the third section of this report.

We conducted this performance audit between December 2008 and October 2009, 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.

Appendix II: Summary of EISA Provisions Contained in Title IV, Subtitle C—High-Performance Federal Buildings

EISA section	EISA provision
Section 431 – Energy Reduction Goals for Federal Buildings	Agencies must reduce energy consumption per gross square foot in their federal buildings by 3 percentage points annually from fiscal year 2008 through fiscal year 2015, as compared with the energy consumption per gross square foot of federal buildings of the agency in fiscal year 2003. ^a
Section 432 – Management of Energy and Water Efficiency in Federal Buildings	<p>Agencies must designate facility energy managers responsible for reducing energy use at covered facilities and conducting comprehensive water and energy evaluations for approximately 25 percent of covered facilities at least once every 4 years. These covered facilities, at a minimum, must include those that constitute at least 75 percent of facility energy use at each agency. Directs the Secretary of Energy to issue guidelines and necessary criteria for agencies to implement these requirements within 180 days of EISA's enactment.</p> <p>Directs the Secretary of Energy to develop and deploy a Web-based tracking system and select or develop a building energy use benchmarking system, such as the Energy Star Portfolio Manager, for energy managers to use and issue guidance for use of these systems within 1 year of enactment.^b</p> <p>Requires OMB to issue semiannual scorecards for energy management activities carried out by federal agencies under this section, and make them available to Congress, other federal agencies, and the public through the Internet.</p>
Section 433 – Federal Building Energy Efficiency Performance Standards	<p>Directs the Secretary of Energy, by December 2008, to issue revised federal building energy efficiency performance standards, by rule, which require that for new federal buildings and those undergoing major renovations, fossil-fuel-generated energy consumption is reduced. For these buildings, the reduction must be 55 percent by 2010 (relative to the 2003 level), and continue to be reduced each year before reaching 100 percent by 2030.</p> <p>Requires the Secretary of Energy, in consultation with the Administrator of General Services and the Secretary of Defense, and using specific criteria, to identify a certification system and level for green buildings within 90 days of EISA's enactment.</p>
Section 434 – Management of Federal Building Efficiency	<p>Requires agencies to report to OMB on the process they establish to ensure that large capital energy investments, such as major replacements of heating and cooling systems or projects to expand existing space, employ energy-efficient designs, systems, equipment, and controls that are life cycle cost effective.^c</p> <p>Requires OMB to submit a report to Congress on agency compliance within 1 year of EISA's enactment.</p>
Section 435 – Leasing	<p>Effective 3 years after EISA's enactment, no federal agency may enter into a contract to lease space in a building that has not earned an ENERGY STAR label within the most recent year. Certain exceptions include: (a) no space is available that meets functional requirements of the agency, including locational needs; (b) the agency proposes to remain in the building that the agency has occupied previously; and (c) the agency proposes to lease a building (or space in a building) of historical, architectural, or cultural significance (see 40 U.S.C. § 3306(a)); or (d) the lease is not more than 10,000 gross square feet of space. If certain conditions are met, the agency may enter into a contract to lease space without the ENERGY STAR label in the most recent year if prior to occupancy, or in the case in which the agency remains in the same building it has previously occupied, the space will be renovated within 1 year for specific energy efficiency and conservation improvements.</p> <p>Requires the Federal Acquisition Regulation (FAR), as described in 41 U.S.C. § 405(a), to be revised to require federal officers and employees to comply with this section in leasing buildings. This shall be done in consultation with the directors of the Offices of Federal and Commercial High-Performance Green Buildings.</p>

**Appendix II: Summary of EISA Provisions
Contained in Title IV, Subtitle C—High-
Performance Federal Buildings**

EISA section	EISA provision
Section 436 – High-Performance Green Federal Buildings	Requires GSA to establish an Office of Federal High-Performance Green Buildings within 60 days and directs this office to, among other activities, coordinate green building information and activities within GSA and across relevant federal agencies; establish a senior-level Federal Green Building Advisory Committee; establish green practices and high-performance green building standards for federal facilities in the federal sector; identify incentives, review, and analyze federal budget and contracting practices and life cycle costing issues that affect the achievement of high-performance green buildings; within 60 days of EISA's enactment, identify a certification system that is most likely to encourage a comprehensive and environmentally sound approach to the certification of green buildings; and report to Congress on compliance issues and other federal high-performance green building initiatives within 2 years of enactment and biennially thereafter.
Section 437 – Federal Green Building Performance	Directs GAO to audit the implementation of EISA Title IV, Subtitle C, High-Performance Federal Buildings and report to Congress by October 31, 2008, and October 31, 2009.
Section 438 – Storm Water Runoff Requirements for Federal Development Projects	Requires sponsors of federal facility development or redevelopment projects with a footprint of more than 5,000 square feet to use site planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of the property, to the maximum extent technically feasible.
Section 439 – Cost-Effective Technology Acceleration Program	The Administrator of GSA must establish a program to accelerate the use of more cost-effective technologies and practices at GSA facilities. As part of this program, the Administrator must review the current use and availability of cost-effective lighting technologies and geothermal heat pumps in GSA facilities not later than 90 days after EISA's enactment.
Section 440 – Authorization of Appropriations	Authorized \$4,000,000 to be appropriated to carry out sections 434 through 439 and 482 for each of fiscal years 2008 through 2012.
Section 441 – Public Building Life Cycle Costs	Amends Section 544(a)(1) of the National Energy Conservation Policy Act, codified at 42 U.S.C. § 8254(a)(1), to reflect a 40-year period as opposed to a 25-year period to be used as a potential input in the calculation for estimating and comparing life cycle costs for federal buildings.

Source: GAO analysis of the EISA Title IV, Subtitle C.

Notes: These are a summary of EISA high-performance federal building provisions. For the purposes of this audit, we did not address all requirements contained in all provisions of Title IV, Subtitle C.

^aSection 431 amends a provision contained in the National Energy Conservation Policy Act (NECPA), codified at 42 U.S.C. § 8253(a)(1) to increase prior energy intensity reduction requirements consistent with energy intensity reduction goals established in Executive Order 13423.

^bENERGY STAR Portfolio Manager is administered by EPA and is an interactive energy management tool that allows agencies to track and assess energy and water consumption across a portfolio of buildings through a secure online Web site.

^cLife cycle cost effective means that the estimated savings from an investment exceed its costs over its lifetime.

Appendix III: Status of Agencies' Implementation of Key EISA Requirements Contained in Title IV, Subtitle C

Implementing agencies—DOE, GSA, OMB, and EPA—are taking steps to carry out their responsibilities under Title IV, Subtitle C and, as a result, are directing and assisting federal agencies in meeting key EISA high-performance federal building requirements. These steps include developing federal regulations and guidance, collecting information, reporting on agencies' progress, and assessing federal agencies' implementation of EISA high-performance federal building requirements.

DOE Is Collecting Information and Developing Regulations and Guidance, Which Help Federal Agencies Meet EISA Requirements

DOE is collecting information from federal agencies on energy use and energy and water evaluation activities, issuing federal regulations and guidance, and developing systems to help agencies implement EISA high-performance federal building requirements. A section-by-section summary of DOE's activities follows.

Section 431 – Energy Reduction Goals for Federal Buildings

Section 431 requires annual reductions in energy consumption (measured as energy intensity) in federal buildings, resulting in a 30 percent reduction by fiscal year 2015, as compared with the energy consumption in the same buildings in fiscal year 2003.¹ DOE has collected and reported on this information since 1978 and continues to do so. These data provide the information needed to assess federal agencies' progress in meeting EISA's energy reduction goals for federal buildings.² See figure 1 of this report for a summary of agencies' progress in meeting EISA's energy intensity goals for fiscal year 2008.

Section 432 – Management of Energy and Water Efficiency in Federal Buildings

Section 432 of EISA establishes energy and water management requirements for federal facilities, requiring agencies to, among other activities, designate facility energy managers to conduct energy and water evaluations for certain facilities. To facilitate compliance with this section, DOE must issue guidelines for federal agencies to carry out this section,

¹Section 431 of EISA amends section 543(a)(1) of the National Energy Conservation Policy Act (NECPA), Pub. L. No. 95-619, 92 Stat. 3206, 3277 (1978), codified as amended at 42 U.S.C. § 8253(a)(1). Section 431 of EISA increases federal agency energy intensity goals, while also reinforcing existing energy intensity reduction goals outlined in Executive Order 13423 (2006).

²According to draft DOE energy data, 19 of 22 federal agencies reporting in fiscal year 2008 met the EISA energy intensity reduction goal of 9 percent, as shown in fig. 1 of this report.

develop and deploy a Web-based tracking system, and select or develop a building energy use benchmarking system.³

In November 2008 and May 2009, DOE issued guidance for federal agencies to implement initial stages of Section 432’s requirements.⁴ This guidance provides information for federal agencies on how they should (1) identify federal facilities that are affected by these requirements (defined as covered facilities), (2) designate facility energy managers, (3) conduct initial rounds of energy and water evaluations, and (4) report to DOE on their activities. DOE’s guidance instructed federal agencies to submit master lists of their covered buildings and designated energy managers to DOE by January 2009 and advised agencies to complete their initial round of energy and water evaluations for calendar year 2009 by mid-June 2009.⁵ DOE interim guidance also instructed federal agencies to report to DOE by June 30, 2009, on their initial findings from energy and water evaluations.⁶

In the spring of 2009, DOE developed the statement of work for a Web-based tracking system for agencies to directly report information on their energy and water management activities in a central repository. The Web-based tracking system is to allow agencies to report on the status of their energy and water evaluations to DOE and eventually is to be made available to the public through the Internet, as required. According to DOE officials, DOE plans to test the system in November 2009 and agencies should then be able to enter data into the system in January 2010. The

³Section 432 of EISA requires DOE to issue guidelines and necessary criteria for agencies to implement the section not later than 180 days after the date of enactment of EISA (June 19, 2008); develop and deploy a Web-based tracking system not later than 1 year after enactment of EISA (Dec. 19, 2008); and select and develop a building energy use benchmarking system and issue related guidance within 1 year of the date of enactment of EISA (Dec. 19, 2008). Building energy use benchmarking systems help agencies track and assess energy and water consumption in federal buildings by allowing them to compare their buildings with similar buildings.

⁴Facility Energy Management Guidelines and Criteria for Energy and Water Evaluations in Covered Facilities (42 U.S.C. 8253 Subsection (f), *Use of Energy and Water Efficiency Measures in Federal Buildings*) issued November 25, 2008, and Interim Guidance: Initial Reporting of Findings from Comprehensive Energy and Water Evaluations in Covered Facilities (42 U.S.C. 8253 Subsection (f), *Use of Energy and Water Efficiency Measures in Federal Buildings*) issued May 26, 2009.

⁵According to draft data collected by DOE, 22 out of 23 federal agencies reported to DOE in January 2009 identifying their designated energy managers and covered buildings.

⁶According to draft data collected by DOE, 20 out of 23 federal agencies reported to DOE in June 2009 on their initial energy and water evaluations.

officials said they plan for the information to be made available to the public through the Internet in August 2010. Furthermore, DOE officials told us they are drafting guidance for agencies to use to select a building energy use benchmarking system, as required by Section 432, in which energy managers will input energy use data for their buildings. Agency officials provided no expected issuance date for this guidance. The ENERGY STAR Portfolio Manager Tool—EPA’s interactive energy management tool that allows agencies to track and assess energy and water consumption across their entire portfolio of buildings online—is likely to be the preferred system for meeting the EISA benchmarking requirements, according to DOE officials.⁷

Section 433 – Federal Building
Energy Efficiency Performance
Standards

According to DOE officials, DOE is developing draft regulations required by Section 433 to assist agencies in meeting new EISA requirements for reducing their consumption of energy generated from fossil fuels in new federal buildings and those undergoing major renovation.⁸ DOE anticipates issuing draft regulations for public comment in early 2010.⁹

Section 433 also requires DOE to identify a certification system and level for green buildings. This requirement is meant to, according to the law, “encourage a comprehensive and environmentally sound approach to certification of green buildings.”¹⁰ DOE officials said the agency developed a draft notice identifying DOE’s choice for a preferred green building rating system for federal agencies; however, DOE received agency

⁷According to DOE, GSA, EPA, and DOE are also working together to integrate a Federal High-Performance Sustainable Buildings Checklist into the ENERGY STAR Portfolio Manager. The purpose of this checklist is to assist federal agencies with assessing their existing building stock against the Guiding Principles for Sustainable Existing Buildings, and for reporting on the sustainability data element in the Federal Real Property Profile. DOE anticipates the checklist will be launched in the fall of 2009.

⁸Section 433 states that buildings shall be designed so that the fossil-fuel-generated energy consumption of the buildings is reduced, compared with such energy efficiency consumption by a similar building in fiscal year 2003, as measured by the Commercial Buildings Energy Consumption Survey or the Residential Energy Consumption Survey data from the Energy Information Agency. These requirements call for a 55 percent reduction by fiscal year 2010 and the elimination of all such energy consumption in federal buildings by fiscal year 2030, relative to a fiscal year 2003 baseline.

⁹Section 433 of EISA requires DOE to establish, by rule, revised federal building energy efficiency performance standards for new federal buildings and those undergoing major renovations not later than 1 year after enactment of EISA (Dec. 19, 2008).

¹⁰Section 433 of EISA requires DOE to identify a certification system and level for green buildings not later than 90 days after the date of enactment of EISA (Mar. 19, 2008).

comments that compelled it to rescind the notice. DOE officials explained that agencies wanted the flexibility to choose the green building rating system that best suited their needs. For example, a DOE official noted that the appropriate green building rating system for federal health care facilities may differ from the system most appropriate for federal office buildings. As a result, DOE does not plan on identifying a single green building rating system as required by EISA, but instead plans to issue draft regulations in early 2010 that will provide criteria for agencies to help them choose their own green building rating system. DOE officials noted that EISA does not require this certification system to ensure that agencies meet all EISA high-performance federal building requirements and existing systems are not designed to guarantee EISA compliance. Consequently, agencies could meet building certification requirements without meeting EISA federal high-performance building requirements. For example, according to an EPA official, an agency could potentially meet the requirements of a green building rating system, such as the commonly used Leadership in Energy and Environmental Design (LEED) Green Building Rating System, without implementing specific storm water management activities required in Section 438 of EISA.¹¹

GSA Is Preparing for Upcoming Leasing Requirements and Has Established an Office to Coordinate High-Performance Federal Building Activities Required under EISA

GSA, which acts as the leasing agent for much of the federal government, is incorporating ENERGY STAR labeling requirements into its federal leases in preparation for upcoming EISA leasing requirements. In addition, as required, GSA has established an Office of Federal High-Performance Green Buildings to, among other things, develop and identify high-performance federal building standards and promote and coordinate high-performance federal building information and activities throughout the federal government. GSA is also identifying cost-effective lighting technologies for use in GSA buildings, as well as opportunities to use geothermal heat pump technology.¹² A section-by-section analysis of GSA's activities follows.

¹¹LEED is a third-party certification program and a national benchmark for the design, construction, and operation of high-performance green buildings, according to the U.S. Green Building Council.

¹²Geothermal heat pumps, also known as ground-source heat pumps, can be used to heat, cool and, if so equipped, supply a facility with hot water by using the constant temperature of the earth as the exchange medium instead of the outside air temperature. Relative to air-source heat pumps, geothermal heat pumps are highly efficient, last longer, and need less maintenance.

Section 435 – Leasing

Effective December 2010, Section 435 requires that no federal agency enter into a contract to lease space in a building that has not earned an ENERGY STAR label within the most recent year, with certain exceptions.¹³ GSA expects to incorporate provisions into its leases in anticipation of the upcoming ENERGY STAR leasing requirement in late October 2009.¹⁴ GSA's incorporation of EISA's leasing requirements into its leases is significant because GSA, as the landlord for most civilian agencies, is authorized to enter into leases and manages a significant percentage of total federal leases, while other agencies, including DOD and VA, administer the remaining federal leases under their own statutory or delegated authority. Because GSA acts as the leasing agent for most federal agencies, the agency's action will help enable federal agencies using GSA leases to comply with EISA's leasing requirement, according to the Acting Director of GSA's Office of Federal High-Performance Green Buildings.

Section 436 – High-
Performance Green Federal
Buildings

Section 436 requires GSA to establish an Office of Federal High-Performance Green Buildings to promote and coordinate high-performance green building information and activities throughout the federal government, among other activities.¹⁵ In March of 2008, GSA established the Office of Federal High-Performance Green Buildings and appointed an Acting Director. GSA planned to select a permanent director for the office in July 2009; however officials told us the agency cannot select a permanent director until the Administrator of GSA is appointed and confirmed. GSA officials plan to select program staff following the selection of a permanent director, and anticipate completing the staffing by December 2009.

According to GSA officials, the Office of Federal High-Performance Green Buildings is undertaking a number of activities to (1) promote and coordinate high-performance federal building information and activities throughout the federal government, (2) serve as the federal government's

¹³See app. II for a list of exceptions to Section 435.

¹⁴The Acting Director for GSA's Office of Federal High-Performance Green Buildings said that the agency anticipates the ENERGY STAR leasing requirement will apply to approximately 35 percent of the agency's total leases, covering approximately 70 percent of the total square footage. The official said that the remainder of GSA's leases will fall under one of the exceptions to Section 435; however there are additional requirements in Section 435 for these excepted leases, as well.

¹⁵Section 436 of EISA requires GSA to establish an Office of Federal High-Performance Green Buildings not later than 60 days after the date of enactment of EISA (Feb. 19, 2008).

green building advocate, and (3) develop standards and establish green practices for all types of federal facilities.¹⁶ According to agency officials, GSA's Office of Federal High-Performance Green Buildings is undertaking multiple activities to address requirements in Section 436 of EISA, including the following:

- *Establishing a senior-level interagency Federal Green Building Advisory Committee.*¹⁷ The Office of Federal High-Performance Green Buildings reported sending letters requesting nominees for the Federal Green Building Advisory Committee to federal agencies and relevant offices in April 2008.¹⁸ GSA officials anticipate the first meeting of the Federal Green Building Advisory Committee will take place in November 2009. Until that committee is formed, the office has primarily been coordinating with other federal agencies, including DOE's Office of Commercial High-Performance Green Buildings, through DOE's Interagency Sustainability Working Group.
- *Identifying a federal high-performance building certification system for federal buildings.*¹⁹ According to GSA, the Office of Federal High-Performance Green Buildings conducted a study of green building rating standards to identify a certification system for federal buildings, as required by EISA, and conveyed the results of this study to the Secretary of Energy in April 2008. According to the study, the LEED Green Building Rating System is the most appropriate system for the federal real property inventory. GSA officials said they have since consulted with DOE and

¹⁶We previously reported on GSA's and the office's activities in October 2008. See GAO, *Status of GSA's Implementation of Selected Green Building Provisions of the Energy Independence and Security Act of 2007*, [GAO-09-111R](#) (Washington, D.C.: Oct. 31, 2008).

¹⁷EISA requires GSA's Office of Federal High-Performance Green Buildings to establish a senior-level Federal Green Building Advisory Committee, which is to, among other things, provide advice and recommendations on current budget and contracting practices and identify tools to aid life cycle cost decision making.

¹⁸EISA requires GSA to ensure coordination with nine relevant agencies and offices including EPA; the Office of the Federal Environmental Executive; the Office of Federal Procurement Policy; the Departments of Energy, Health and Human Services, Defense, and Transportation; the National Institute of Standards and Technology; and the Office of Science and Technology.

¹⁹Section 436 of EISA requires that the Office of Federal High-Performance Green Buildings identify and provide to DOE a certification system that the Director determines to be the most likely to encourage a comprehensive and environmentally sound approach to the certification of green buildings not later than 60 days after enactment of EISA (Feb. 19, 2008).

recommended LEED as the preferred building certification system for federal buildings. As mentioned previously, DOE officials said they anticipate issuing draft regulations for agencies in early 2010 that will assist agencies in choosing a building certification system. The Acting Director of GSA's Office of Federal High-Performance Green Buildings said that GSA anticipates issuing additional guidance to supplement these regulations to ensure that agencies will also meet federal energy and water requirements, including EISA's federal high-performance building requirements.

- *Preparing a public report fully outlining the office's activities related to EISA implementation.*²⁰ According to GSA officials, this report will be available to Congress no later than December 19, 2009. In addition to providing information on the status of compliance with EISA, this report is to, among other things, (1) identify inconsistencies in federal law that may serve as barriers to implementing EISA; (2) recommend language for uniform standards for environmentally responsible acquisition by federal agencies; (3) review the federal budget process to identify alternative treatments of energy and environmental costs and benefits; (4) identify federal facility procedures that may affect green building certification; and (5) make recommendations to address the issues identified in the report, as well as plans for implementing the recommendations.

Section 439 – Cost-Effective
Technology Acceleration
Program

According to GSA's Acting Director of the Office of Federal High-Performance Green Buildings, GSA established a technology acceleration program in May 2009, as required by Section 439 of EISA, to help all relevant federal agencies that are tenants of GSA buildings increase the use of cost-effective technologies, including use of efficient lighting technologies and geothermal heat pumps.²¹ As part of this effort, GSA reviewed the use of cost-effective lighting technologies in GSA facilities in the spring of 2008, according to a GSA official, and has begun to accelerate

²⁰Section 436 of EISA requires, not later than 2 years after the date of enactment of EISA (Dec. 19, 2009), that the Office of Federal High-Performance Green Buildings submit a report to Congress describing the status of GSA's compliance with Title IV, Subtitle C.

²¹Section 439 requires GSA to review the current use and availability of cost-effective lighting technologies and geothermal heat pumps in GSA facilities as part of a program to accelerate the use of more cost-effective technologies and practices at GSA facilities within 90 days of EISA's enactment (Mar. 19, 2008).

the use of these technologies in these facilities.²² Additionally, GSA is working with DOE's Oak Ridge National Laboratory to assist in the development, management, and performance of a geothermal technology acceleration program. The Acting Director for GSA's Office of Federal High-Performance Green Buildings said that GSA evaluates the feasibility of using geothermal heat pumps on a case-by-case basis as it undertakes major renovations of federal buildings. He said he anticipates this will be an ongoing process, with the assistance of the Oak Ridge National Laboratory.

**OMB Is Collecting
Information and Assessing
Agencies' Progress in
Meeting Energy Efficiency
Goals**

OMB is incorporating information from federal agencies on energy use and energy and water evaluation activities into scorecards used to assess agencies' progress in meeting federal energy management goals. OMB has also reported collecting information on agencies' processes for reviewing decisions on large capital energy investments and reporting to Congress. A section-by-section analysis of OMB's activities follows.

**Section 431 – Energy Reduction
Goals for Federal Buildings**

As previously outlined, Section 431 requires agencies to reduce energy consumption (measured as energy intensity) in their federal buildings. OMB is working with DOE to collect information on energy intensity and incorporate this information into OMB's agency scorecards on energy management, which OMB uses to assess federal agencies' status and progress in meeting energy management goals.²³ OMB has been incorporating energy intensity data into these scorecards since their inception in January 2006.

**Section 432 – Management of
Energy and Water Efficiency in
Federal Buildings**

Pursuant to Section 432, OMB officials told us they are now also incorporating information on agencies' progress in implementing EISA's energy and water management requirements into semiannual agency scorecards on energy management. Specifically, OMB officials told us that OMB included agencies' identification of covered facilities and designation of energy managers in the progress milestone of the energy management

²²Specifically, the Acting Director of GSA's Office of Federal High-Performance Green Buildings told us that GSA has used Recovery Act funds to identify nearly 100 GSA buildings with the highest energy use to conduct complete lighting replacements as part of the cost-effective technology acceleration program required by EISA Section 439.

²³42 U.S.C. § 8253(f)(9) requires OMB to incorporate this information into its scorecards. In the status milestone for energy in OMB's July 2009 Management Scorecard, 11 agencies received a green light, 4 agencies received a yellow light, and 7 agencies received a red light.

scorecard it issued in January 2009 and included agencies’ progress in conducting initial energy and water evaluations in the progress milestone of scorecards it issued in July 2009.²⁴

**Section 434 – Management of
Federal Building Efficiency**

As EISA Section 434 requires, OMB officials reported collecting information from agencies on their process for reviewing decisions for ensuring that large capital energy investments are cost effective. EISA requires each federal agency to ensure that major replacements of installed equipment (such as heating and cooling systems), or renovations or expansions of existing space, are energy efficient and life cycle cost effective.²⁵ OMB provided a report on agencies’ progress to Congress in July 2009, as also required by Section 434.²⁶

**EPA Is Working with DOE
on Selecting an Energy
Use Benchmarking System
and Is Developing Storm
Water Runoff Guidance**

EPA is working with DOE to select a building energy use benchmarking system and is developing storm water runoff guidance. A section-by-section analysis of EPA’s activities follows.

**Section 432 – Management of
Energy and Water Efficiency in
Federal Buildings**

Because Section 432 of EISA requires DOE to select or develop a building energy use benchmarking system to assist agencies in carrying out this section, EPA officials told us they are working with DOE to explore the

²⁴In the progress milestone for energy in OMB’s January 2009 Management Scorecard, 21 agencies received a green light and 1 agency received a yellow light. In the progress milestone for energy in OMB’s July 2009 Management Scorecard, 18 agencies received a green light, 3 agencies received a yellow light, and 1 agency received a red light.

²⁵Section 434 of EISA requires federal agencies to ensure that any large capital energy investment in an existing building that is not a major renovation but involves the replacement of installed equipment (such as heating and cooling systems), or the renovation, rehabilitation, expansion, or remodeling of existing space, employs the most energy efficient designs, systems, equipment, and controls that are life cycle cost effective. Not later than 180 days after the date of enactment of EISA (June 19, 2008), federal agencies must develop a process for reviewing these decisions and report to OMB on the process established.

²⁶Section 434 of EISA requires OMB to evaluate and report to Congress on the compliance of each agency not later than 1 year after the date of EISA’s enactment (Dec. 19, 2008). According to OMB, of the 22 agencies that OMB tracks as part of its energy management scorecard, all 22 agencies reported that they have incorporated language on EISA Section 434 compliance into existing agency guidance documents. In addition, OMB reports including language in its recent guidance to federal agencies on implementation of the Recovery Act to require that all federal infrastructure investments using Recovery Act funds meet the requirements of Section 434.

use of the ENERGY STAR program's Portfolio Manager as the preferred benchmarking system for federal agencies.

**Section 438 – Storm Water
Runoff Requirements for
Federal Development Projects**

Section 438 sets forth requirements for federal facility development or redevelopment projects (with a footprint of more than 5,000 square feet) to control storm water runoff but does not identify a lead agency for this provision. At the request of the Interagency Sustainability Working Group, EPA has taken the lead in developing technical guidance for federal agencies to implement EISA's storm water runoff requirements for federal buildings. EPA issued its draft technical guidance for comment in February 2009. Through the working group, agencies have provided comments to EPA on this technical guidance. Issued in October 2009, Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance directs EPA, in coordination with other federal agencies as appropriate, to issue guidance on implementation of Section 438 within 60 days of the date of the order. EPA officials said that the agency expects to issue guidance by the order's December 2009 deadline.

Appendix IV: Comments from the Department of Energy



Department of Energy
Washington, DC 20585

October 15, 2009

Mr. Mark Gaffigan
Director, Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Gaffigan:

Thank you for the opportunity to comment on the draft Government Accountability Office (GAO) report titled: "*FEDERAL ENERGY MANAGEMENT: Agencies Are Taking Steps to Meet High-Performance Federal Building Requirements, but Face Challenges and Need to Clarify Roles and Responsibilities*" (GAO-10-22). The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy has reviewed the report and our comments are detailed below.

Except for one issue, DOE does not take exception to the contents or conclusions of the draft report and offers a number of revisions that should clarify or strengthen various portions of the text.

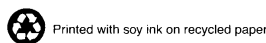
DOE disagrees with the statement on page 32: "Moreover, a senior official responsible for DOD's facilities and installations energy management stated that an evaluation would not likely be needed every 4 years because limited energy and water savings opportunities could be realized within such a short time frame. The official suggested that it would be more efficient and practical to conduct these activities over a longer interval, such as every 10 years."

DOE considers a 10 year interval, as mentioned in the report, to be exceptionally long and unresponsive to the need for periodic maintenance and the potential opportunities with respect to new technologies. According to our experts: "The optimal frequency for re-commissioning of electro-mechanical equipment is four years. The reason for this is that this specific type of equipment will suffer from a decrease in efficiency through the normal course of operations. Left uncorrected, the equipment will have decreased performance and increased energy use. Energy and water audits should also be re-evaluated at four year intervals. This is due to changing operations, equipment, and energy and water usage at facilities. If longer intervals are used, the risk is that the baselines for energy and water usage will be inaccurate."

We believe that while a four year interval may appear challenging, it is a realistic and responsible time-frame for assessment, evaluation and corrective action.

DOE's other clarifying/strengthening revisions for the report are as follows:

- Revisions to page 11, first full paragraph, lines 4 and 5, replace "DOE officials anticipate that the draft regulations to be issued for public comment in the fall of 2009", with:



**Appendix IV: Comments from the Department
of Energy**

- "The draft NOPR began internal DOE review in August 2009 and is expected to be available for public comment in early 2010"
- Revisions to page 11, first full paragraph, lines 8 and 9, replace "DOE officials expect draft regulations to be issued for public comment in the fall of 2009", with:
 - "The draft NOPR began internal DOE review in August 2009 and is expected to be available for public comment in early 2010"
- Revision to page 22, onto the end of the last paragraph, after "tracking system this year" insert:
 - ", since no specific appropriations were made."
- Revisions to page 23, first full paragraph, lines 3 and 4, delete:
 - "data from"
 - replace "be linked" with "link"
 - after "Portfolio Manager" insert "to streamline data collection for the agencies that use Portfolio Manager."
- Revision to page 23, second full paragraph, line 1, delete:
 - "is using \$17 million" and replace with "will spend \$ 20.5 million"
- Revision to page 23, second full paragraph, line 4, delete:
 - "issued a memorandum to" and replace with "notified"
- Revision to page 23, second full paragraph, lines 9 and 10, delete:
 - "eight national laboratories" and replace with "ten national laboratories and contractors"
- Revision to page 29, first full paragraph, line 4, after "from fossil fuels" insert:
 - "in new buildings and major renovations"
- Revisions to page 32, top incomplete paragraph, line 9 replace "large" with "significant"
- Revision to page 32, top incomplete paragraph, line 11, after "evaluations because most" insert "of these process"
- Revision to page 32, top incomplete paragraph, line 12, after "needs are" delete: "set" and replace with:
 - "fixed and typical building efficiency measures are not applicable."

Thank you again for the opportunity to comment on the draft report. We look forward to working with GAO on helping the Federal Government meet its facility energy goals.

If you have any questions, please contact me or Ms. Betty A. Nolan, Acting Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,



Kathleen B. Hogan
Deputy Assistant Secretary
For Energy Efficiency
Office of Technology Development
Energy Efficiency and Renewable Energy

Appendix V: Comments from the General Services Administration

Note: GAO's comment supplementing those in the report text appears at the end of this appendix.



GSA Administrator

October 14, 2009

The Honorable Gene Dodaro
Acting Comptroller General
of the United States
Government Accountability Office
Washington, DC 20548

Dear Mr. Dodaro:

The U.S. General Services Administration (GSA) appreciates the opportunity to review and comment on the Government Accountability Office's (GAO's) draft report, "FEDERAL ENERGY MANAGEMENT: Agencies Are Taking Steps to Meet High-Performance Federal Building Requirements but Face Challenges and Need to Clarify Roles and Responsibilities" (GAO-10-22). GAO recommends that GSA identify and recommend for congressional designation an entity to oversee implementation of the Energy Independence and Security Act (EISA) storm water runoff requirements.

Technical comments that update and clarify statements in the draft report are enclosed and incorporated herein by reference. If you have any questions, please contact me. Staff inquiries may be directed to Mr. Ralph Conner, Acting Associate Administrator, Office of Congressional and Intergovernmental Affairs. He can be reached at (202) 501-0563.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul F. Prouty".

Paul F. Prouty
Acting Administrator

Enclosure

cc: Mr. Terrell Dorn, GAO Director of Physical Infrastructure

U.S. General Services Administration
1800 F Street, NW
Washington, DC 20405-0002
Telephone: (202) 501-0800
Fax: (202) 219-1243
www.gsa.gov

See comment 1.

**Government Accountability Office (GAO) Draft Report
“FEDERAL ENERGY MANAGEMENT: Agencies Are Taking Steps
to Meet High-Performance Federal Building Requirements but
Face Challenges and Need to Clarify Roles and Responsibilities”
(GAO 10-22)**

Dated October 2009

**U.S. General Services Administration
Comments to the Recommendation**

Recommendation 1: GAO recommends that GSA identify and recommend for congressional designation an entity to oversee implementation of the Energy Independence and Security Act (EISA) storm water runoff requirements.

GSA Response: GSA agrees with the recommendation.

Technical and clarifying comments:

1. Choice and Use of a Green Building Certification System (p. 9, 13 ff)
 - The report notes that the use of a green building certification system does not guarantee the certified buildings will achieve all of EISA’s goals. GSA believes the value of certification systems is the independent, third-party review and verification process.
 - Use of the certification clearly does not obviate EISA, or other statutory requirements. GSA requires its contractors to not only meet the LEED Silver level, but also the fossil fuel reduction, water conservation, and energy targets. The information provided for certification using LEED addresses these specific requirements as well.
2. Agencies Will Likely Face Challenges in Meeting EISA Requirements for Reducing Their Use of Energy Generated from Fossil Fuels (p. 28)
 - This requirement is in GSA’s budgets for any designs beginning in fiscal year 2010 and appropriate Recovery Act contracts.
 - Preliminary assessment about the near term goals (55%) from the Department of Energy and the American Society of Heating, Refrigerating and Air-Conditioning Engineers is that the 55% reduction would be achieved by meeting the statutory requirement to perform 30% better than the energy code (ASHRAE 90.1)
3. Agencies Will Likely Face Challenges Meeting EISA’s Energy and Water Management Requirements (p. 31-32)
 - The Commercial Building Energy Consumption Survey database developed and maintained by the Energy Information Agency within the Department of Energy could be expanded to include a broader set of reference buildings. This would aid the Federal government in its benchmarking activities.

2

4. EISA ENERGY STAR Leasing Requirements May Be Difficult for Federal Agencies to Meet In Certain Situations (p. 33)

- GSA's statement that the Sec. 435 requirements (for ENERGY STAR) will not be particularly onerous to meet should be qualified: the intent was to describe the initial implementation in major metropolitan areas, in which there is a robust market for commercial office space.
- There is a potential cost consequence of the ENERGY STAR requirement, as it inherently limits competition to the top 25 percent of buildings in energy efficiency.

The following is GAO's comment on the General Services Administration's letter dated October 14, 2009.

GAO Comment

1. When we sent the draft of this report to the agencies for official comment, it contained a recommendation that the Secretary of Energy, the Administrators of EPA and GSA, and the Director of OMB work together and, in conjunction with the Interagency Sustainability Working Group and the future Federal Green Building Advisory Committee, identify and recommend to Congress an entity responsible for overseeing the implementation of EISA's storm water runoff requirements for federal development projects so that Congress can designate the appropriate entity. During the official comment period, Executive Order 13514 was issued, which directs EPA to issue guidance on EISA's storm water runoff requirements, directs agencies to follow EPA's guidance, and directs multiple entities, such as OMB, to monitor agencies' progress in implementing EPA's guidance. These activities appear to address the goal of our recommendation; therefore we deleted this recommendation from our final report.

Appendix VI: Comments from the Department of Defense



ACQUISITION,
TECHNOLOGY
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

OCT 21 2009

Mr. Terrell Dorn
Director, Physical Infrastructure
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Dorn:

This is the Department of Defense (DoD) response to the GAO draft report GAO-10-22, "FEDERAL ENERGY MANAGEMENT: Agencies Are Taking Steps to Meet High-Performance Federal Building Requirements, but Face Challenges and Need to Clarify Roles and Responsibilities," dated September 15, 2009 (GAO Code 545083).

The DoD concurs with the draft report. Thank you for the opportunity to participate in this important review of the challenges faced in implementing the high-performance green building requirements in the Energy Independence and Security Act of 2007.

If you require additional information, my point of contact is LtCol Barton V. Barnhart, at 703-604-1831 and barton.barnhart@osd.mil.

A handwritten signature in black ink, appearing to read "Dorothy Robyn".

Dorothy Robyn
Deputy Under Secretary of Defense
(Installations and Environment)

Appendix VII: GAO Contacts and Staff Acknowledgments

GAO Contacts

Terrell Dorn, (202) 512-6923 or DornT@gao.gov
Mark Gaffigan, (202) 512-3841 or GaffiganM@gao.gov

Staff Acknowledgments

In addition to the individuals named above, other key contributors to this report were Steve Cohen and Karla Springer, Assistant Directors; Lauren Calhoun; Jean Cook; Elizabeth Eisenstadt; Brandon Haller; Carol Henn; Mark Keenan; Susan Michal-Smith; Gary Stofko; Barbara Timmerman; and Nicholas Weeks.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday afternoon, GAO posts on its Web site newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to www.gao.gov and select "E-mail Updates."

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's Web site, <http://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548

