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June 2005

ENERGY SAVINGS

Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests

GAO-05-340

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Highlights

Highlights of GAO-05-340, a report to congressional requesters

ENERGY SAVINGS

Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests

Why GAO Did This Study

The federal government is the nation's largest energy consumer, spending, by latest accounting, $3.7 billion on energy for its 500,000 facilities. Upfront funding for energy-efficiency improvements has been difficult to obtain because of budget constraints and competing agency missions. The Congress in 1986 authorized agencies to use Energy Savings Performance Contracts (ESPCs) to privately finance these improvements. The law requires that annual payments for ESPCs not exceed the annual savings generated by the improvements.

GAO was asked to identify (1) the extent to which agencies used ESPCs; (2) what energy savings, financial savings, and other benefits agencies expect to achieve; (3) the extent to which actual financial savings cover costs; and (4) what areas, if any, require steps to protect the government's financial interests in using ESPCs.

What GAO Recommends

GAO recommends that the Congress consider clarifying the costs of ESPCs that must be covered by savings. GAO also recommends steps for agencies to better ensure that savings cover the costs of ESPCs, including using expertise, information, and competition more effectively. GAO further recommends that DOE do more to facilitate oversight of ESPCs. DOD, DOE, GSA, DOJ, and VA concurred with the report.

www.gao.gov/cgi-bin/getrpt?GAO-05-340.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Jim Wells, 202-512-3841, wellsj@gao.gov.

What GAO Found

Although comprehensive data on federal agencies' use of ESPCs are not available, in fiscal years 1999 through 2003, we found that 20 federal agencies undertook 254 ESPCs to finance investments in energy-saving improvements for 5 to 25 years. Through the ESPCs, federal agencies plan to make annual payments amounting to at least $2.5 billion spread over the lifetime of the contracts.

Agencies expect to achieve benefits that include energy savings worth at least $2.5 billion over the life of the contracts, as well as other benefits that cannot be easily quantified, such as improved reliability of the newer equipment over the aging equipment it replaced, environmental improvements, and additional energy and financial savings once the contracts have been paid for. While these benefits could be achieved using upfront funds and with lower financing costs, agencies stated that they generally have not received sufficient funds upfront for doing so and see ESPCs as a necessary supplement to upfront funding in order to achieve the benefits cited. Agencies believe that ESPCs also provide unique benefits such as a partial shift of risk from agencies to private energy services companies and a more integrated approach to providing efficiency measures.

Agencies structure ESPCs so that financial savings cover costs and they reported that many do. However, GAO could not verify that conclusion using the data on ESPCs, and GAO work and agency audits disclosed ESPCs in which unfavorable contract terms, missing documentation, and other problems caused GAO to question how consistently savings cover costs. Furthermore, differing interpretations of the law establishing ESPCs about what components of costs must be paid for from the savings generated by the project or may be paid for using other funding sources have contributed to uncertainties about whether savings are appropriately covering costs.

GAO identified concerns in the areas of expertise and related information and competition that are fundamental to ensuring that savings cover costs and to protecting the government's financial interests in using ESPCs. According to agency officials, they often lacked the technical and contracting expertise and information (such as interest rates and markups) to negotiate ESPCs and to monitor contract performance in the long term. The officials also think there may be insufficient competition among finance and energy services companies and that this could lead to higher costs for ESPCs.

Contents

Abbreviations

DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
ESPC	Energy Savings Performance Contracts
FEMP	Federal Energy Management Program
GSA	General Services Administration
MMBTU	million British thermal units
VA	Department of Veterans Affairs

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United States Government Accountability Office
Washington, D.C. 20548

June 22, 2005

The Honorable Tom Davis
Chairman
The Honorable Henry A. Waxman
Ranking Minority Member
Committee on Government Reform
House of Representatives

The federal government is the single largest energy consumer in the nation, spending about $3.7 billion in fiscal year 2002[1] on energy for its approximately 500,000 facilities in the United States. The Energy Policy Act of 1992 and several subsequent executive orders require federal agencies to reduce their consumption of energy in federal facilities. Most notably, Executive Order 13123, issued in 1999, requires agencies, by 2010, to reduce energy consumption by 35 percent from a 1985 baseline. Additional provisions in the act and various executive orders have added other goals, such as conserving water and using renewable fuels.

Whether to pay for energy-efficiency improvements that reduce energy consumption through up-front appropriations or through private financing is a matter of concern to many. Agencies and members of the Congress have long recognized that upfront funding for energy-efficiency improvements has often been difficult to obtain because of budget constraints and competing agency mission priorities. In 1986, the Congress provided agencies with an alternative mechanism for obtaining energy-efficiency improvements when it authorized agencies to use Energy Savings Performance Contracts (ESPCs), a type of share-in-savings contract, to privately finance the improvements. This step reflected the trend in the federal government toward increased reliance on performance-based contracting to improve the services agencies receive from contractors. In performance-based contracting, the agency specifies the result it desires and leaves it to the contractor to decide how best to achieve the desired result. Through share-in-savings contracting, one performance-based technique, the agency compensates a contractor from the financial benefits derived as a result of contract performance. Under an

[1]Fiscal year 2002 is the latest year for which the Department of Energy has reported data on federal energy use, see U.S. Department of Energy, *Annual Report to Congress on Federal Energy Management and Conservation Programs Fiscal Year 2002* (Washington, D.C.: Sept. 29, 2004).

ESPC, agencies enter into a long-term contract (up to 25 years) with a private energy services company in which the company installs energy-efficiency improvements financed from private funds. The agency then repays the company until the improvements have been paid for. The law requires that annual payments for the ESPCs not exceed the value of the annual utility savings generated by the installed energy-efficiency improvements. As part of an ESPC, the agency and the energy services company estimate the annual energy and financial savings and develop a plan to monitor and verify that the expected savings actually occur. ESPCs are designed to shift performance risk associated with energy-efficiency improvements from the agency to the company. This shift is to be made by conditioning annual payments to the company on verification that the expected financial savings have been realized. These savings are to be calculated as the difference between the baseline cost for energy consumption that would have been incurred without the ESPC and the cost of the energy consumption with the ESPC's energy-efficiency improvements in place.

Agencies tended to use ESPCs sparingly during the late 1980s and early 1990s, largely because negotiating an ESPC can be a highly technical and time-consuming process. Agencies began using ESPCs more during the late 1990s. Agencies' energy reduction goals became more ambitious as a result of Executive Order 13123, and the new goals required agencies to allocate additional funds to install energy-efficiency improvements. To help simplify and shorten the ESPC negotiation process, the Department of Energy's (DOE) Federal Energy Management Program (FEMP) negotiated "super" ESPCs with energy services companies that FEMP prequalified, via a competitive process, to provide services under the contracts. FEMP's super ESPCs are umbrella contracts that federal agencies may use to purchase energy equipment and services. The Department of the Air Force and the U.S. Army Corps of Engineers negotiated similar "super" ESPCs. Agencies have the option to use the super ESPCs to take advantage of some prenegotiated terms and conditions. In this regard, agencies can implement delivery orders more quickly using the super ESPCs because the competitive selection process has already been completed and key terms of the contract negotiated. Alternatively, the agencies may still enter into "stand-alone" ESPCs with energy services companies using a separate competitive selection process.

The use of ESPCs in recent years has raised questions about how these contracts should be reflected in the federal budget. At present, they are not reflected—"scored"--upfront in the budget when the contract is signed, and

budget agencies disagree about whether they should be.[2] The Congressional Budget Office believes that the obligation to make payments for the energy-efficiency improvements and the financing costs is incurred when the government signs the ESPC and that scoring the full cost is consistent with governmentwide accounting principles that the budget reflect this commitment as a new obligation at the time of signing. The Office of Management and Budget, on the other hand, includes the costs of ESPCs in the budget on an annual basis as they are incurred. The scoring treatment is based on the contingent nature of the contract—payments are contingent on achieving expected financial savings and, therefore, the government is not fully committed to the entire long-term cost of the ESPC at the time it is signed. Agencies have statutory authority to enter into a multiyear contract even if funds are available only to pay for the first year of the contract. Although authorization for ESPCs lapsed on October 1, 2003, it was renewed on October 28, 2004, through fiscal year 2006, and retroactive authorization was provided for any ESPCs signed between the time the authority expired and was reinstated.

In this context, you asked us to determine, for contracts agencies undertook in fiscal years 1999 through 2003, (1) the extent to which agencies used ESPCs; (2) what energy savings, financial savings, and other benefits agencies expect to achieve; (3) the extent to which actual financial savings from ESPCs cover costs; and (4) what areas, if any, require steps to protect the government's financial interests in using ESPCs.

To answer these questions, we first obtained basic contract data from the databases of the four federal contracting centers that assist agencies with ESPCs—the Air Force Civil Engineer Support Agency, the U.S. Army Corps of Engineers' Huntsville Center, FEMP, and the Naval Facilities Engineering Service Center, which reflect the majority of all federal ESPCs undertaken during fiscal years 1999 through 2003. We did not completely assess these data for reliability; however, we reviewed the steps each agency took to ensure the data were reliable and determined that these steps were sufficient for our reporting purposes. We also obtained more detailed contract data for the same period from the seven federal agencies having the most facility floor space and highest energy use and, therefore, the most potential to use ESPCs. These agencies were DOE; the Departments of the Air Force, the Army, the Navy (including the Marine Corps), Justice,

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

and Veterans Affairs; and the General Services Administration. We did not perform formal benefit/cost analyses of individual ESPC projects or of ESPCs as a whole because of data limitations. Consequently, to assess the costs and benefits of ESPCs, we supplemented the limited data analysis we were able to conduct with agencies' assessments of their own ESPCs and the additional information we obtained from agency files and through more than 60 interviews with officials from the agencies, energy services companies, and financiers. We also reviewed relevant regulations, policies, and agency procedures. For more information regarding the scope and method we followed, see appendix I. We conducted our work from January 2004 through May 2005 in accordance with generally accepted government auditing standards.

Results in Brief

In fiscal years 1999 through 2003, 20 federal agencies undertook a total of 254 ESPCs to finance investments in energy-efficiency improvements for up to 25 years. However, we could not determine the full extent of ESPC use because there is no comprehensive database on federal agencies' use of ESPCs. Although DOE is required to report to the Congress some governmentwide annual data on the new ESPCs that agencies undertake each year, DOE's data are not comprehensive or cumulative. The 20 agencies for which we do have data have committed the federal government to annual payments totaling about $2.5 billion over the terms of these contracts, conditional on either the savings guaranteed in the contracts being verified or as stipulated in the contracts.[3] The energy-efficiency improvements have been or are in the process of being installed at locations across the nation and cover many types of equipment including lighting, boilers, geothermal heat pumps, and energy management systems. The extent of ESPC use has varied across agencies. For example, the Department of Defense (DOD) agencies undertook about 153 ESPCs to finance about $1.8 billion in costs at about 100 military installations, while the Department of Justice undertook only 2 ESPCs to finance about $43 million in energy-efficiency improvements. Department of Defense officials

[3]By law, payment to an energy services company must reflect the savings guarantee. Because energy services companies are accountable for guaranteeing the performance of the equipment installed, if savings are reduced due to equipment performance, the company must correct any related problems. In some instances the contract may stipulate an amount of savings that will be achieved. In the event that this stipulation overstates actual savings, the agency must still make payments based on the amount of savings stipulated. However, if stipulation understates savings, the agency obtains the additional savings at no additional cost.

told us they relied on ESPCs to augment the upfront funding they receive to purchase such improvements and achieve their energy efficiency goals. Justice officials told us they undertook two projects to help meet similar goals.

Agencies expect to achieve energy savings worth at least $2.5 billion over the life of their ESPCs, as well other benefits that we could not attach a dollar value to, including improved ability to accomplish their missions by replacing aging infrastructure and environmental benefits from using newer and cleaner technologies. Agencies also generally expect benefits to continue after the contracts end because the improvements financed by the ESPCs should operate and continue to save energy beyond the point at which they have been paid for. While these benefits could be achieved using upfront funding with associated financial cost savings to the government, agencies told us they generally have not received appropriations for these types of investments in sufficient amounts to achieve their energy savings goals and maintain their energy infrastructure in a timely manner. Therefore, they stated that meeting their energy savings and other goals often depends on using ESPCs to supplement the upfront funding. In addition, agencies and industry experts told us that ESPCs provide benefits that are not typically obtained when agencies use upfront funding to purchase the investments. For example, ESPCs shift some of the risk from the government to the energy services companies by making payments conditional on verification of expected performance, which in turn yields energy savings. Such performance clauses are not generally included when agencies purchase improvements using upfront funds, though it might be possible to do so. Agency officials also said using ESPCs enabled them to develop an integrated approach to energy management in their buildings by ensuring, for example, that new and existing equipment work together efficiently. In contrast, they said that obtaining up-front funding is uncertain and episodic, making it difficult to ensure that improvements work effectively together and with existing equipment.

Agencies believe that ESPCs' financial savings generally cover the costs, and they provided examples of when this has occurred; however, the available data are not conclusive and our work, agency audits of ESPCs, and agencies' different interpretations about the components of costs that must be covered by savings under the ESPC legislation raise questions about how consistently savings actually cover costs. The ESPC legislation requires agencies to design their ESPCs so that the upfront estimates of savings exceed the costs. In addition, payments on the contracts are conditioned on the savings guaranteed in the contracts being verified.

Although the agencies in our review told us about projects for which savings covered costs and provided data on verified savings for most of their projects, the data were not sufficient for us to conclude whether project savings have covered costs. Furthermore, we found instances that caused us to question whether savings consistently cover costs. For example, a 2002 Army audit of a 1999 project covering five locations found that the project's guaranteed savings were based on faulty assumptions, potentially leading to payments of about $96 million that may not be covered by savings if corrections are not made and if the contract is not renegotiated. Finally, the agencies have adopted different interpretations of which costs must be covered by savings under the ESPC authorizing legislation. In practice, it remains uncertain whether contract payments may be made only from utility savings resulting from the ESPC or from funds already earmarked for equipment replacement and other sources to reduce the length of the contract and finance charges. As a result, agencies expressed the need for legislative clarification in this area.

During our review, the expertise and information needs of the agencies and competitiveness issues related to the contracts emerged as concerns for the protection of the government's financial interests in using ESPCs. First, according to a number of the agency officials we interviewed, they often lacked the necessary technical and contracting expertise and related information to effectively develop and negotiate the terms of ESPCs and to monitor contract performance once the energy-efficiency improvements were operating. Even when the officials obtained assistance from the Department of Defense's and FEMP's contracting centers, which the officials generally believed to be helpful, they told us they sometimes could have benefited from additional help with some aspects of developing the contracts, such as evaluating the proposed financing, and monitoring savings during the term of the contract. However, for various reasons, such as resource constraints, they did not always get that assistance. As a result, they sometimes relied on the energy services companies for help in these areas, thereby calling into question whether they negotiated the best contracts and ensured that the savings guaranteed by the contracts were realized. The officials lacked necessary expertise largely because they were inexperienced with ESPCs. They lacked necessary information because information on ESPCs negotiated in the past is generally neither collected and disseminated above the individual project level; nor is it required to be. In addition to their concerns about expertise and information, agency officials believe they may be paying too much for financing and other terms in the contracts, in part, because there may not be enough competition among the companies that finance ESPCs and among the energy services

companies. One reason for lack of competition among financiers may be the limited number of companies involved in financing ESPCs. Another reason may be the risk associated with financing ESPCs because of the performance requirements—risk that tends to limit the number of financiers interested in participating. Regarding insufficient competition among energy services companies, most officials believe that the super ESPCs, including their lists of prequalified companies, are outdated and the contracts should be put out for recompetition more frequently. The individual agencies and the contracting centers have taken a number of steps to address concerns about expertise, information, and competition. For example, in 2000, DOE began requiring that each of its departmental projects be approved by a team of experts in headquarters, and each of the contracting centers has developed guidance for verifying actual savings. In addition, the agencies have begun to address some of these concerns more collectively through an interagency steering committee. We did not attempt to assess the effectiveness of the agencies' efforts.

To strengthen the ESPC process, we are recommending that the Congress consider clarifying the components of costs that must be covered by savings in the statute relevant to ESPCs. We are also making recommendations concerning the use of data, expertise, audits, and competition to the heads of the agencies that use ESPCs; to the Secretaries of Defense and Energy because the contracting centers answer to them; and to the Secretary of Energy because of that agency's ESPC oversight and reporting responsibilities.

In commenting on a draft of this report, the Departments of Defense (for the Departments of the Air Force, the Army, and the Navy), Energy, Justice, and Veterans Affairs, and the General Services Administration, all stated their concurrence with our findings, conclusions, and recommendations and provided technical and clarifying comments, which we have incorporated, as appropriate.

Background

Federal agency use of ESPCs was authorized by the Congress to provide an alternative to direct appropriations for funding energy-efficiency improvements in federal facilities.[4] Many agencies were hard-pressed to pay for planned maintenance and repairs in their facilities, let alone make more significant building improvements. As a result of this situation, many federal facilities were in a state of deterioration with agencies estimating restoration and repair needs in the tens of billions of dollars. Although energy-efficiency improvements were likely to save money over the life of the investments and replace aging infrastructure, budgetary constraints prevented agencies many times from receiving appropriations for such investments. Under the ESPC legislation, agencies could take advantage of private-sector expertise, often lacking at the agencies, with little or no upfront cost to the government. Under these contracts, private-sector firms are supposed to bear the risk of equipment performance in return for a share of the savings. This arrangement permitted agencies to meet mission requirements and upgrade their energy efficiency to reduce energy usage at the same time, while recognizing only the first year's cost upfront in the budget. The Congress authorized agencies to retain some or all of any annual savings available after required contractual payments to the energy services companies have been made.[5]

ESPC Process

To begin an ESPC project, agency officials work on their own or with the assistance of one of the federal contracting centers at the U.S. Air Force, the U.S. Army Corps of Engineers' Huntsville Center, the Navy, or FEMP, to

[4]ESPCs were first introduced under the Comprehensive Omnibus Budget Reconciliation Act of 1985, Pub. L. 99-272, which amended the National Energy Conservation Policy Act. Agencies' authority to use ESPCs was further extended under the Energy Policy Act of 1992, Pub. L. No. 102-486, to authorize agencies to use energy savings performance contracts as a tool for implementing energy-efficiency improvements. Prior to the Energy Policy Act, the Federal Energy Management Improvement Act of 1988 mandated a 10 percent reduction in energy used per square foot in federal buildings between 1985 and 1995. Executive Order 12759 issued April 17, 1991, extended these reduction requirements to the year 2000, requiring a 20 percent reduction from 1985 levels. These requirements were incorporated into the Energy Policy Act of 1992 (42 U.S.C. § 8253 (a) (1)). Executive Order 12902 issued March 8, 1994, increased the reduction to 30 percent per gross square foot by 2005 compared to 1985 to the extent that the improvements are cost effective, and Executive Order 13123, issued June 3, 1999, extended this further to 35 percent by 2010.

[5]Currently DOD and GSA may retain and use 100 percent of all savings without further appropriation. Other agencies can retain 50 percent of savings and must return the other 50 percent to the Treasury.

choose an energy services company for the project and to identify the energy-efficiency improvements the company will finance for the agency.[6] Usually, multiple companies submit initial proposals that include information on their qualifications and preliminary cost and savings projections for the project. During this phase, all costs are borne by the companies.

To continue developing the project, the agency chooses one company and agrees to pay for a detailed energy survey. According to contracting center officials, this survey typically takes up to 1 year and includes such items as an assessment of baseline energy use and cost, projections of energy use and savings once the improvements have been put in place, maintenance schedules, and prices. Improvements must be "life-cycle cost effective," that is, the benefits must meet or exceed total costs over the contract. Determining life-cycle cost effectiveness is an agency responsibility, but the agency can request this service from the company, generally for a separate fee. A final proposal that includes the detailed survey becomes the basis for comment and negotiation between the agency and/or contracting center and the company. Included in these negotiations are such contract terms as the "markups" added to the direct cost of each improvement to cover the energy services company's indirect costs and profit associated with its implementation,[7] operations and maintenance arrangements, guaranteed savings amounts, financing, and methods to verify that savings are achieved.

Once the agency and energy services company have reached final agreement on contract terms, the company designs and installs the energy-efficiency improvements and tests the improvements' operating performance. Agency officials review test results and have the company make any necessary corrections. To install, test, and accept the improvements typically takes up to 2 years to complete. Upon accepting

[6]ESPC contracting assistance from FEMP and the U.S. Army Corps of Engineers is available to all agencies, although the contracting assistance from the Air Force is available only to Air Force installations or military tenants located there. Currently, the Navy and Marine Corps use the FEMP super ESPCs for their ESPC projects, and because the Navy has centralized technical and contracting support staff who are familiar with ESPCs, the Navy and Marine Corps use the Navy technical and contracting staff to provide most of the support for Navy and Marine Corps ESPCs.

[7]Markups are expressed as a percentage of the cost of a particular energy-efficiency improvement.

the project, the agency starts payments to the company, which must be supported by regular measurement and verification reviews.

Although agencies may develop an ESPC themselves, doing so can be a complicated process; consequently, most agencies seek assistance from one of the contracting centers at DOD or FEMP. To streamline the procurement process, three of these contracting centers—Air Force, U.S. Army Corps of Engineers' Huntsville Center, and FEMP—have awarded super ESPCs, from which multiple projects can be developed, to prequalified energy services companies in different regions of the country.[8] The super ESPC awards to selected energy services companies complied with Federal Acquisition Regulation rules and requirements for competition. With these multiple-award contracts in place, agencies can implement ESPCs in a fraction of the time it would take to undertake an ESPC alone because the competitive process to select qualified companies has been completed and key terms of the contract broadly negotiated, such as setting maximum markups the companies may charge. In addition to managing the super ESPCs, the contracting centers support agencies in negotiating aspects of specific projects for a separate fee. For example, FEMP provides facilitation services, where a third party assists the agency and energy services company in agreeing on terms such as markup rates, financing options, and the appropriateness of plans to measure and verify savings for proposed improvements. In addition, FEMP issues guidelines, offers training, and provides other support to agencies using the FEMP super ESPC.

ESPC Savings Are Intended to Cover Contract Costs

Under an ESPC, company-incurred costs are paid from savings resulting from improvements during the life of the contract. These savings include such things as reductions in energy costs, operation and maintenance costs, and repair and replacement costs directly related to the new efficiency improvements. In addition to direct costs for the improvements, other costs that savings should cover include financing charges, monitoring services, and company-provided maintenance. Savings to an agency must exceed payments to the energy services company. By law, aggregate annual payments by an agency to both utilities and energy services companies under an ESPC may not exceed the amount that the agency would have

[8]DOE has certified as prequalified energy services companies in six regions of the country; the Air Force has prequalified companies in six regions; and the U.S. Army Corps of Engineers has two major contracts: a 46-state and a 4-state contract.

paid for utilities without the ESPC. To ensure that energy savings cover the contract costs, companies are required to guarantee the performance of the new equipment and assume the risk for its operation and maintenance during the contract, even though the agency may perform the maintenance. Agencies still assume some risks, for example, for changes in utility rates and in hours of operation, over which the energy services company has no control.

To measure and verify that the guaranteed savings are achieved, an agency compares baseline energy usage and costs prior to the ESPC with consumption and costs after the improvements have been installed. Typically, the company develops a baseline during its detailed survey, while the agency is responsible for ensuring that the baseline has been properly defined. The company then estimates the energy that will be saved by installing the improvements and calculates the financial savings expected in the future. At least annually, and sometimes more often, the company provides measurement and verification inspections and reports to the agency to substantiate the expected savings.

Several measurement and verification protocols are available to determine energy savings. For example, under FEMP guidelines, four options are discussed that range in complexity and costs. The simplest, and perhaps least expensive, option is to measure the capacity or efficiency of the new equipment and "stipulate" hours of operation, expected energy consumption, and other factors rather than specifically measure them. Such stipulation is often used for simpler improvements, such as lighting. A more costly option might include constant monitoring of energy usage through metering or computer simulation models of whole building energy consumption. These methods may involve metering performance and operating factors before and after the installation of the improvements. When choosing among the alternatives, agencies balance the need for accuracy of their estimates with the costs of verifying those estimates. As part of its guidance, FEMP includes a matrix that describes a number of factors and associated risks involving financial, operational, and performance issues. When guaranteed savings are not achieved directly

due to the performance of the equipment, the agency may withhold payment from the energy services company until the conditions are corrected.[9]

Prior GAO Work Compared the Financing Costs of ESPCs with Upfront Funding

As we reported in December 2004, while ESPCs provide an alternative financing mechanism for agencies' energy-efficiency improvements, for the cases we examined, such funding was more expensive than using timely upfront appropriations. This is because the federal government is able to obtain capital at a lower financing rate than private companies can. In this regard, our earlier work examining six projects found that financing these projects with ESPCs cost 8 to 56 percent more than had the projects been funded at the same time with upfront funds.[10] The report noted that other factors, such as required measurement and verification of savings, may also affect the cost of projects financed with ESPCs. Agency officials commenting on this work agreed that timely upfront appropriations would be less costly than privately financing energy-efficiency improvements, if such appropriations were available, but stated that any delays in funding would result in a subsequent loss of energy and cost savings and these losses over time could offset the lower financing costs of the upfront funding. We did not analyze the likelihood nor the costs of such delays.

Many Agencies Used ESPCs, Although the Extent of Use Varied

During fiscal years 1999 through 2003, numerous agencies undertook ESPCs to finance energy-efficiency improvements, committing the federal government to annual payments totaling about $2.5 billion over the terms of these contracts. The use of ESPCs has been geographically widespread, with many types of equipment installed, and the extent of use has varied across the agencies.

During our review, we found that there is no source of comprehensive data on federal agencies' use of ESPCs, either in DOE, the contracting centers, or the agencies. DOE is required to collect data on the numbers, costs, and expected energy and financial savings for the new ESPCs that agencies

[9]By law, payment to an energy services company must reflect the savings guarantee. Since energy services companies are accountable for guaranteeing the performance of the equipment installed, if savings are reduced due to equipment performance, the company must correct any related problems.

[10]GAO-05-55.

undertake each year and report these data annually to the Congress. The data in DOE's reports, however, were not adequate for our review for several reasons: they did not include some critical elements, such as actual energy savings; they were not cumulative from year to year; and they did not include ESPCs begun in fiscal year 2003 because DOE has not yet issued the report for that year. Similarly, the DOD and FEMP contracting centers' data were not comprehensive enough for our purposes. The centers' data were limited to those contracts for which they provided assistance; like DOE's reports, they did not include certain critical elements; and, with the exception of Navy's, did not incorporate information on modifications or progress on the contracts past the point at which the centers' assistance to the agency was completed—usually only up to 1 year after the contract was signed. Furthermore, most agencies do not have a comprehensive, centralized electronic or paper system for tracking their ESPCs and keep some contract data only in project files at the facilities where the contracts are being implemented.

Consequently, to examine ESPC use across the federal government, we obtained data from the four contracting centers and from the seven agencies included in our review. We combined the data from all the agencies into a consistent format, deleted duplicate records, and performed basic tests to ascertain the reliability of the data. Although the data for some projects were incomplete, the overall results of our analyses appear to be consistent with information published from other sources. The results of our analyses follow.

Twenty Agencies Used ESPCs

During fiscal years 1999 through 2003, 20 agencies undertook 254 ESPC projects to finance investments in energy-efficiency improvements. The ESPCs commit the federal government to annual payments totaling about $2.5 billion over the terms of these contracts, conditional on either the savings guaranteed in the contracts being verified or as stipulated in the contracts. Because energy services companies are accountable for guaranteeing the performance of the equipment installed, if savings are reduced due to equipment performance, the company must correct any related problems. In some instances, the contract may stipulate an amount of savings that will be achieved. In the event that this stipulation overstates actual savings, the agency must still make payments based on the amount of savings stipulated. However, if stipulation understates savings, the agency obtains the additional savings at no additional cost. Table 1 shows the numbers and costs of ESPCs the 20 agencies undertook, as well as the percentage of total ESPCs attributable to each agency.

Table 1: Number and Cost of ESPC Projects Undertaken in Fiscal Years 1999 through 2003

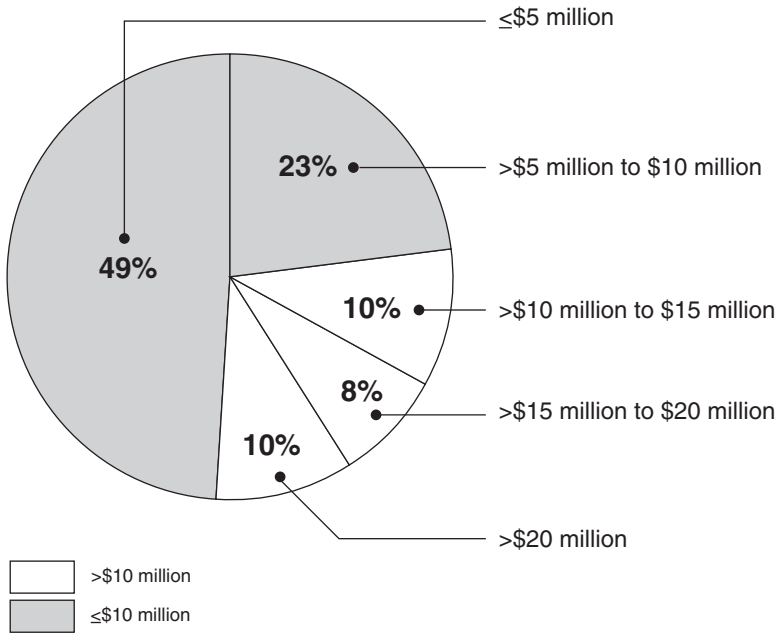
Agency	Number of projects	Percentage of total number of projects	Number of projects with cost data	Cost to be paid over contract term	Agency's percentage of $2.5 billion in total cost to be paid over contract term
Department of Defense					
Air Force	63	24.8	63	760,012,668	30.8
Army	47	18.5	46	324,374,960	13.2
Navy, including Marine Corps	40	15.7	35	653,376,185	26.5
Other DOD agencies	3	1.2	3	21,040,420	0.9
Subtotal for Defense agencies	**153**	**60.2**	**147**	**1,758,804,233**	**71.3**
General Services Administration	30	11.8	30	222,500,840	9.0
Department of Veterans Affairs	24	9.4	17	146,818,918	6.0
Department of Energy	10	3.9	10	38,076,458	1.5
Department of Transportation	8	3.1	8	56,516,373	2.3
Department of Interior	5	2.0	5	26,787,215	1.1
Department of Labor	4	1.6	4	11,543,796	0.5
National Aeronautics and Space Administration	4	1.6	4	54,300,894	2.2
Department of Health and Human Services	3	1.2	3	20,004,872	0.8
National Archives and Records Administration	3	1.2	3	14,762,964	0.6
Department of Agriculture	3	1.2	3	37,046,526	1.5
Department of Justice	2	0.8	2	42,984,767	1.7
Department of Commerce	1	0.4	1	8,689,639	0.4
Environmental Protection Agency	1	0.4	1	8,687,513	0.4
Kennedy Center for the Performing Arts	1	0.4	0	NA [a]	--
National Gallery of Art	1	0.4	1	5,108,785	0.2
Department of State	1	0.4	1	12,847,527	0.5
Total	**254**		**240** [a]	**2,465,481,320**	

Source: GAO's analysis of ESPC data reported by the four ESPC contracting centers and seven individual agencies included in GAO's review.

[a]Of the 254 projects agencies reported undertaking, the agencies reported cost data for 240. We did not receive cost data for 1 Army project, 5 Marine Corps projects, 7 Veterans Affairs projects, or the Kennedy Center's project. Furthermore, the agencies reported estimated savings for only 237 of the 240 with cost data. To allow a fair comparison of costs (shown in table 1) to savings (shown in table 2), we calculated total cost for only the 237 projects with both cost and savings data. As a consequence, we have understated total cost by the costs of the 3 projects for which we did not receive savings data and by the costs of the additional 14 projects for which we received neither cost nor savings data.

The size of ESPC projects varied greatly over the 5-year period, ranging from $241,943 to $137,515,074. About 72 percent of the projects in this time period are valued at $10 million or less, as shown in figure 1. The contract length of all ESPC projects ranges from 5 to 25 years, with an average of 15.8 years.

Figure 1: Percentage of ESPC Financed Projects, by Contract Value, Undertaken in Fiscal Years 1999 through 2003



Source: GAO's analysis of ESPC data reported by the four ESPC contracting centers and seven individual agencies included in GAO's review.

Using the ESPCs, agencies financed energy-efficiency improvements that have been or are in the process of being installed at locations in 49 states and on U.S. military installations in Guam, Cuba, Italy, Germany, and Korea. Numerous types of energy-efficiency improvements were financed, including replacement of boiler and chiller plants for heating and cooling, energy management control systems, geothermal heat pumps, and lighting. In the largest ESPC project during the 5-year period, the Marine Corps committed to spend almost $138 million at a facility in California to install a cogeneration plant, solar hot water and photovoltaic systems, heating, ventilating, and air conditioning at various sites, and waste water pump

upgrades. This ESPC project, awarded in July 2002, has a contract term of 18 years.

Extent of ESPC Use Varied Across Agencies

The extent to which agencies have used ESPC financed projects has varied, as shown in table 1. DOD agencies have used the contracts the most, undertaking about 153 ESPCs to finance about $1.8 billion in costs at about 100 military installations during the 5-year period. DOD officials told us they relied heavily on ESPCs to achieve energy infrastructure improvements, in part because of difficulties they encountered in obtaining adequate upfront funding for energy projects that were not categorized as being mission-critical. They noted that these improvements also helped the agencies meet other national energy goals as well.

After DOD, the General Services Administration (GSA) and Veterans Affairs (VA) used ESPCs the most during the 5-year period, undertaking 30 and 24 projects, respectively. Together these agencies account for about 21 percent of projects. Both GSA and VA officials told us that adequate upfront funding for their energy projects has been difficult to obtain in recent years. At the same time, they have faced increasing backlogs of these projects in their capital management plans. Consequently, the agencies have moved toward using more ESPCs to meet mandated energy reduction goals and to make badly needed upgrades to aging and inefficient equipment.

DOE's departmental ESPC projects represent about 4 percent of the total projects undertaken over the period, valued at about $38 million. DOE officials told us that the agency has mainly used ESPCs since 1999 to supplement limitations in upfront funding for energy-efficiency projects. After GSA and VA, among civilian agencies, DOE has a high percentage of federal facility square footage; however, the agency has not been among the largest users of ESPCs for two reasons. First, the agency has found it relatively easy to meet its mandated energy reduction goals because it has in recent years closed a number of its facilities, such as those producing nuclear weapons, that were no longer needed. Furthermore, many DOE facilities have negotiated low utility rates or are in regions of the country where utility rates are relatively low. This makes developing an ESPC for which savings will cover costs difficult, because the low utility rates hold down the amounts that can be saved with the energy-efficiency improvements. As a result, DOE's major goal in using ESPCs, we were told, has been for energy infrastructure improvement.

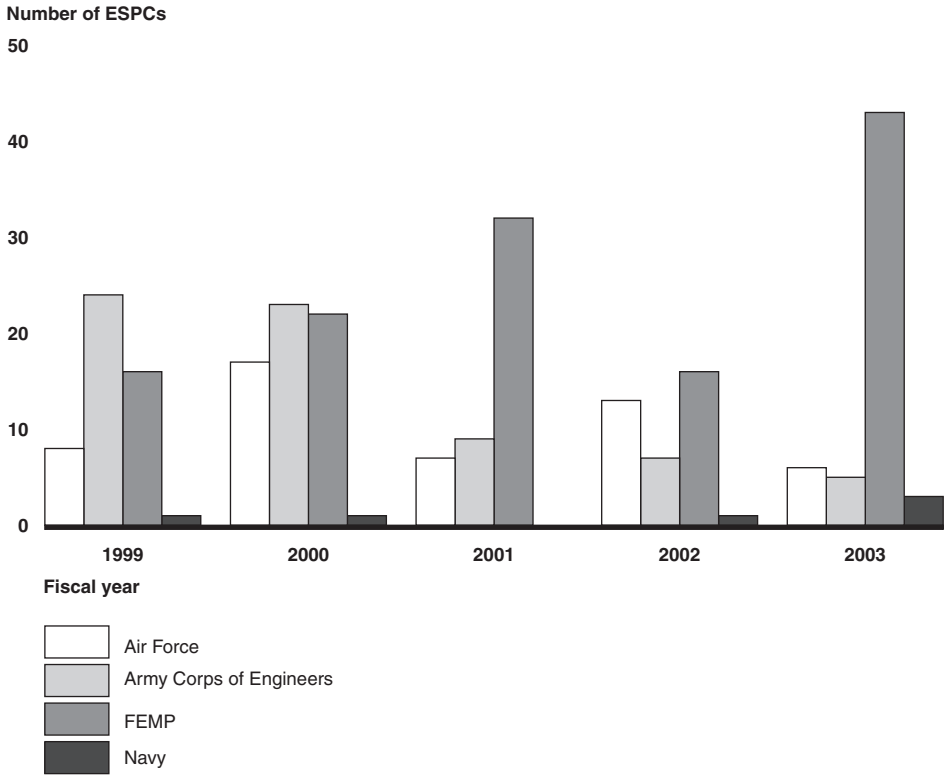
Of the seven agencies in our review, the Department of Justice (Justice) used ESPCs the least, undertaking only two ESPCs totaling about $43 million in costs. According to Justice officials, because many of their facilities are prisons, security concerns can make undertaking energy-efficiency projects on existing buildings difficult. Nonetheless, the agency undertook two ESPC projects in 2003, one each under the Bureau of Prisons and the Federal Bureau of Investigation. According to the officials, the agency undertook the ESPCs because it was concerned about meeting the mandated energy reductions, and upfront funding for energy-efficiency projects was decreasing. In addition, for one of the projects, the agency saw a chance to use an ESPC to accomplish environmental goals established by Executive Order 13123, such as making more use of renewable energy. In that case, the agency undertook a project at a California prison site. After the California energy crises in 2000 and 2001, the agency sought to decrease its dependence on the electricity grid, so the project included installation of renewable energy sources, including a wind turbine and photovoltaic panel, which furthered the agency's energy security interests as well as helping it meet its energy reduction and environmental goals.

Finally, five agencies—the Departments of Commerce and State, the Environmental Protection Agency, the John F. Kennedy Center for the Performing Arts, and the National Gallery of Art—that we did not contact for additional information for our review each undertook one project during the 5-year period. We did not receive cost data for the Kennedy Center. The other four totaled about $35 million in costs.

Agencies Increasingly Used FEMP's Services

Figure 2 shows agency use of the contracting centers at the Air Force, the U.S. Army Corps of Engineers' Huntsville Center, the Navy, and FEMP for fiscal years 1999 through 2003. With the exception of 2002, the data show that, over the period, agencies increasingly used FEMP's contracting center more relative to the other agencies' centers. Although there was an average of 51 ESPC financed projects undertaken each year, there was a 54 percent increase in projects awarded from 2002 (37 projects) to 2003 (57 projects). According to agency officials, this increase was largely because agencies put significant effort into awarding ESPC financed projects, anticipating the sunset of the legislation on October 1, 2003. This was particularly true for ESPCs done through FEMP's contracting center. As discussed previously, on October 28, 2004, ESPC authority was renewed through fiscal year 2006.

Figure 2: Agencies' Use of Contracting Centers for ESPCs Undertaken in Fiscal Years 1999 through 2003



Source: GAO's analysis of ESPC data reported by the four ESPC contracting centers and seven individual agencies included in GAO's review.

Agencies Expect ESPC-Financed Projects to Result in Energy Savings As Well As Other Benefits

ESPCs awarded by federal agencies to finance energy-efficiency improvements are expected to achieve energy savings worth at least $2.5 billion during the life of their contracts. Agencies estimate that they are annually reducing energy use by at least 9 million MMBTUs.[11] Some savings are also expected to continue after the ESPCs end. Agencies receive other benefits through ESPCs as well, such as environmental improvements and better mission capability resulting from replacing aging infrastructure with more reliable equipment. Although these benefits could be achieved through up-front appropriations at a lower cost, this funding has often not been available on a timely basis. Furthermore, ESPCs provide additional benefits not typically associated with investments purchased through upfront appropriations, such as shifting some of the performance risk of the equipment to the energy services companies and allowing agencies to more easily combine multiple energy-efficiency improvements into an integrated package.

ESPC-Financed Projects Have Reduced Energy Use and Agencies Expect to Achieve Energy Savings Worth At Least $2.5 Billion

Over the life of the ESPC financed projects included in our review, agencies expect to achieve energy savings worth at least $2.5 billion and amounting to over 9 million MMBTUs, as shown in table 2. These estimated savings are likely to be understated because the agencies did not report financial savings for 17 projects and energy savings for 45 projects. The military services account for about 64 percent of the financial savings and about 71 percent of energy savings for the ESPCs awarded during the 5 years. Savings at some specific locations are expected to be substantial. For example, reported data show that total estimated savings at each of three military installations will exceed $100 million, ranging from $117 to $138 million for a total of $378 million. The ESPC at Elmendorf Air Force Base in Alaska is expected to reduce the base's energy consumption by more than 1 million MMBTUs per year, which are valued at $123 million for the 22-year contract term. According to the base energy manager, this is the largest ESPC ever awarded by the Air Force.

[11]MMBTU stands for million British thermal units and is a standard unit used to measure energy usage. The estimated 9.1 million MMBTUs in energy savings from ESPCs is equal to the annual energy needed for about 98,000 households, at an average of about 92 MMBTUs per household per year.

Table 2: Energy and Financial Savings for ESPC Projects Undertaken in Fiscal Years 1999 through 2003

Agency	Number of projects with financial savings data	Estimated cumulative financial savings over life of contract	Percentage of financial savings for all contracts	Number of projects with estimated energy savings data	Estimated annual energy savings in MMBTUs	Percentage of estimated energy savings for all contracts
Department of Defense						
Air Force	63	750,533,703	30.0	60	3,448,867	37.9
Army	44	334,403,496	26.7	34	383,674	20.5
Navy	35	667,164,060	13.4	38	1,866,509	4.2
Other DOD agencies	3	21,089,559	0.8	3	89,065	1.0
Subtotal for Defense agencies	**145**	**$1,773,190,818**	**70.9**	**135**	**5,788,115**	**63.7**
General Services Administration	30	233,000,518	9.3	30	697,413	7.7
Department of Veterans Affairs	16	154,879,631	6.2	13	1,887,625	20.8
Department of Energy	10	38,099,795	1.5	10	271,403	3.0
Department of Transportation	8	57,161,461	2.3	3	49,233	0.5
Department of Interior	5	26,572,468	1.1	5	75,292	0.8
Department of Labor	4	11,602,330	0.5	2	20,489	0.2
National Aeronautics and Space Administration	4	54,567,011	2.2	3	167,833	1.8
Department of Health and Human Services	3	20,033,135	0.8	1	20,144	0.2
National Archives and Records Administration	3	13,636,305	0.5	1	4,962	0.1
Department of Agriculture	3	39,267,423	1.6	2	32,329	0.4
Department of Justice	2	43,008,699	1.7	2	26,994	0.3
Department of Commerce	1	8,689,649	0.3	0[a]	NA[a]	--
Environmental Protection Agency	1	8,966,682	0.4	1	24,900	0.3
Kennedy Center for the Performing Arts	0[a]	NA[a]	--	0[a]	NA[a]	--

(Continued From Previous Page)

Agency	Number of projects with financial savings data	Estimated cumulative financial savings over life of contract	Percentage of financial savings for all contracts	Number of projects with estimated energy savings data	Estimated annual energy savings in MMBTUs	Percentage of estimated energy savings for all contracts
National Gallery of Art	1	5,184,179	0.2	1	22,796	0.3
Department of State	1	12,847,609	0.5	0[a]	NA[a]	--
Total	**237**	**$2,500,707,713[b]**		**209**	**9,089,527[c]**	

Source: GAO's analysis of ESPC data reported by the four ESPC contracting centers and seven individual agencies included in GAO's review.

[a]We did not receive financial savings data for the Kennedy Center's project. We did not receive energy savings data for the projects of the Departments of Commerce or State, or for the Kennedy Center's project.

[b]Agencies reported financial savings data for 237 of the 254 projects; consequently, the total financial savings reported here understates total savings by the unknown amount of the savings of the 17 projects for which we did not receive savings data.

[c]Agencies reported estimated energy savings to date for only 209 of the 254 projects, understating estimated savings achieved to date.

The installation of energy efficient equipment has already resulted in some energy savings and is expected to result in further savings, lower utility bills, and reduced operations and maintenance expenses. Over the 5-year period, the agencies estimate they reduced their energy use by at least 9 million MMBTUs annually.[12] According to agency officials, these reductions have assisted, and will continue to assist, agencies in meeting their mandated goals for reducing BTUs of energy used. For example, agencies reported that they exceeded by 4 percent their goal for fiscal year 2000—a 20 percent reduction in BTUs of energy consumed relative to their fiscal year 1985 usage. Agencies report their progress in meeting the goals by each agency as a whole and do not indicate the portion that could be attributed to the agency's ESPCs. However, officials we interviewed representing most of the agencies believe they would not have met the 2000 goal without the contracts. Furthermore, they expect their ability to meet the remaining goals—30 percent reduction by fiscal year 2005 and 35 percent by fiscal year 2010—depends largely on being able to use ESPCs to finance energy efficiency improvements. DOD officials told us that in recent years ESPCs have accounted for over half of DOD agencies' annual energy savings. Furthermore, they believe that DOD will have significant difficulty in achieving the 2005 energy reduction goal because a number of ESPC projects planned for fiscal years 2004 and early 2005 were not

[12]The agencies reported estimated, rather than actual, BTUs saved.

undertaken because authority for ESPCs was suspended during that time. DOE is an exception—according to DOE officials, the agency has already met its goals for 2005 and 2010, largely because it has closed facilities that produced nuclear weapons, thereby significantly reducing the energy consumed by the agency.

Agencies may also benefit from substantial energy and financial savings once the contracts are paid for. Energy and related financial savings should continue beyond a project's payback period through annual energy saving, as well as through reduced operations and maintenance costs. Currently, financial savings retained by agencies are small because most agencies use their savings to pay off their contracts with the energy services companies as quickly as possible, thereby reducing debt more rapidly and saving interest costs to the government. For example, GSA, which currently pays energy services companies 98 percent of the agency's annual financial savings from ESPCs, estimates that it will save about $16 million annually from its 30 projects after it has repaid the companies. Similarly, data provided by the Air Force and the Navy show expected annual financial savings for those agencies of almost $45 and $40 million, respectively, once the contracts are paid for, and Army and Marine Corps projects also expect to garner financial savings past the contract terms. In another instance, officials at Fort Bragg told us that they would continue to obtain lower utility rates, which were negotiated as part of the ESPC by the energy services company, even after the contract period.

ESPC Financed Projects Offer Additional Benefits

In addition to energy savings and lower overall utility costs, ESPC-financed projects, like projects funded with upfront appropriations, can provide agencies with environmental benefits through installation of newer, cleaner technologies. The ESPC financed projects in our review, we were told, are assisting the agencies in eliminating environmental hazards, reducing outdoor air pollution, and improving indoor air quality. The project at Elmendorf Air Force Base allowed the Air Force to replace old steam plants insulated with asbestos, a known environmental hazard. In another instance, in the ESPC at Portsmouth Naval Shipyard, in Maine, the Navy installed a cogeneration unit for generating power. As a result, the shipyard eliminated its reliance on bunker fuel oil and is producing significantly fewer greenhouse gas emissions.

ESPC-financed projects also allow agencies to replace aging infrastructure without having to obtain upfront appropriations. Officials at six of the seven agencies in our review noted the importance of using ESPCs to

replace aging infrastructure. The upgrades, the officials told us, improved the agencies' abilities to carry out their primary missions and provide a more comfortable work environment for employees. At Elmendorf Air Force Base, for example, the energy manager told us the base was able to replace a 50-year-old cogeneration power plant with a new, much more efficient decentralized natural gas system. Navy officials told us they faced a similar situation with a power plant built in 1945, which was failing at their Portsmouth facility. The backlog of maintenance work on the power plant was continuing to increase. Due to the geographic location in Maine, with severe winter weather and the continual repairs needed on the old power plant, an upgrade was essential to support the nuclear submarines at the shipyard. The officials noted each day's loss of power cost the shipyard $1.5 million. By using an ESPC to replace the power plant, the base was able to eliminate eight full-time staff positions (saving about $448,000 annually) because the new power plant is easier to operate and does not require frequent emergency maintenance, as the old one did.

Upfront Funds Could Provide These Benefits But Are Often Not Available on a Timely Basis

Although the benefits from ESPC financed projects discussed above could be achieved using upfront funding, agencies have found that sufficient amounts of such funding were generally not available—making it necessary for the agencies to use ESPCs to supplement the upfront funding they receive in order to obtain these benefits. A study by Oak Ridge National Laboratory that compared ESPCs with upfront funded projects concluded that when sufficient upfront funds are not available, the most expensive choice may be to do nothing, allowing inefficient equipment to remain in service and wasting funds on unnecessary energy use and emergency repairs and replacement. Officials at six of the seven agencies we reviewed—the Air Force, the Army, GSA, Justice, the Navy, and VA—told us that, in spite of attempts to obtain upfront appropriations for energy projects, adequate amounts of such funds were generally not available.[13] For example:

- GSA officials said the agency received no funds for any energy-efficiency work included in their capital management plans for fiscal years 2002 and 2003, although they requested $32 million and $8 million, respectively. As a result, they used other financing options, such as ESPCs.

[13]Attempts to obtain appropriations included requesting funds in the President's budget, from the Office of Management and Budget, or internally within the agency.

- Army officials at Aberdeen Proving Ground noted that failing heating and air conditioning systems in the base's family housing had become a fire hazard and were too expensive to maintain. These officials said they repeatedly attempted to obtain upfront appropriations for the upgrades but, being unsuccessful, negotiated an ESPC.

- Navy officials told us their planned investments for energy-efficiency projects range from $100 million to $150 million annually in order to meet their BTU reduction goals. However, because the Congress will only provide $50 million for all of DOD, and the Navy only gets about $15 million of that amount—or none, as in fiscal year 2000—the Navy questions the usefulness of requesting the funds while foregoing making energy-efficiency improvements.

Furthermore, officials at both the VA and the Navy told us that even when they can obtain upfront funds, the project typically takes 4 to 5 years to obtain approval and be completed, compared with about 2 years for an ESPC. Navy officials pointed out that up-front-funded projects take longer because projects must be submitted 2 years in advance of the budget year; in addition, they said that most projects are not fully funded and have to be resubmitted in subsequent years. According to these and other agency officials, their agencies were achieving savings through lower utility bills and reduced operation and maintenance costs during the extra years that equipment installed under ESPCs was operational. DOE's Oak Ridge National Laboratory reported in March 2003 that, on average, upfront funded projects that were approved took 63 months to award, design, and construct, compared with 27 months for ESPCs.

In a recent report, GAO performed a case study analysis of six ESPC projects and compared the actual costs of financing the energy-efficiency improvements incurred in the ESPCs with an estimate of what the financial costs would have been had the improvements been paid for through timely upfront appropriations.[14] We found that the financial cost to the government of private financing was significantly higher than the financial costs of upfront appropriations and also that monitoring and verification costs—included with ESPCs but typically not included in projects paid for with up-front appropriations—also added to the cost difference between private versus upfront financing. Specifically, our case studies found that

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

ESPC financed projects increased the government's cost of acquiring the energy-efficiency improvements by 8 to 56 percent compared to timely, full, upfront appropriations. Our analysis assumed that the energy savings and other benefits associated with the energy-efficiency improvements were independent of how they were financed.

While our earlier work found higher financing costs associated with the use of ESPCs, a recent study of ESPCs, undertaken by the Lawrence Berkeley National Laboratory, analyzed both the costs and government benefits of 109 ESPCs and compared the net benefits of these projects with the net benefits under several alternative scenarios involving direct, upfront appropriations.[15] The study assumed that the performance of the equipment installed was dependent to varying degrees on which financing method was used. Specifically, they evaluated scenarios in which energy savings from equipment installed using upfront appropriations decay over time (1 or 2 percent per year) because projects funded up-front typically do not include the same level of monitoring and verification to ensure sustained performance of the equipment. The study concluded that "delays of more than one year in obtaining congressional appropriations result in reduced net benefits relative to ESPC-financed projects." Although we did not independently verify all of the study's assumptions, data, and results, we did review several studies of energy audits that the Lawrence Berkeley authors used to support their assumption regarding savings decay to verify their assumption that energy systems' savings decay in the absence of proper monitoring and verification. In discussions with experts on the performance of energy equipment, we were told that many of the energy-efficiency improvements require careful monitoring and verification to ensure that they perform up to their specifications and that, without such monitoring and verification, energy savings would indeed decay over time, in some cases very quickly; however, we found that agencies often lack sufficient expertise in monitoring and verifying performance of energy equipment on their own. Thus, although we could not conclude on the actual extent of savings decay for upfront-funded projects, there is evidence that savings decay occurs. While it is likely that agencies could purchase monitoring and verification services from the private sector in the case of equipment paid for with up-front appropriations, they have typically not done so in the past and the additional cost of doing so is unknown. We

[15]Ernest Orlando Lawrence Berkeley National Laboratory, Public and Institutional Markets for ESCO Services: Comparing Programs, Practices and Performance, LBNL-55002 (University of Calif. Berkeley, California; March 2005).

cannot conclude definitively the extent to which decreased savings decay and other benefits from ESPC-financed projects may offset the significant savings achieved from using upfront funding that we found previously in six case studies.

Some ESPC Benefits Not Readily Available With Upfront Funding

ESPCs also provide two benefits not typically associated with investments purchased through upfront appropriations: (1) some performance risk is shifted from the government to the energy services companies and (2) agencies find it easier to combine multiple energy-efficiency improvements into an integrated package. First, as noted by agency officials and industry experts, because ESPCs require energy services companies to guarantee equipment performance over the lifetime of the contract, which in turn yields energy savings, agencies benefit as these risks are shifted from the agencies to the companies. As part of these guarantees, energy services companies are ultimately responsible for insuring that adequate operations and maintenance are conducted and for any repairing and replacing equipment if it fails. These requirements reduce the risks from possible faulty engineering, poor equipment installation, or equipment failure. For projects funded with upfront appropriations, energy services companies are generally only responsible for equipment risks during the warranty period, which typically is shorter than an ESPC's contract guarantee. While it may be possible to supplement upfront-funded projects with additional warranty or performance coverage, agency officials told us that this would add costs and typically is not done. According to FEMP ESPC program managers, ESPCs create an incentive for energy services companies to develop highly efficient improvements and maintain the equipment so that it is in peak operating condition. This incentive occurs because the companies' compensation is directly linked to the savings achieved through their work. Officials from both the Navy and the Army told us that because the value of energy savings must cover the annual payments to the energy services company, the company bears the risk when it encounters problems. For any problems related to the performance of the equipment that are defined as company risks and that were not explicitly determined to be an agency risk, the agency can withhold future payments from the energy services company until the problem has been corrected. Officials at Fort Bragg told us that they withheld payment from a contractor for a short period until an equipment problem was fixed on their ESPC. In many cases, the agency, rather than the energy services company, performs the operations and maintenance. An official from the DOE departmental energy management program, however, noted that it is not altogether clear when a piece of equipment fails, whether payment to the energy services

company can be stopped directly or whether a review of maintenance records, for example must be performed to determine if the agency or the company is responsible for the failure. Typically, when problems occur for equipment purchased with up-front funds, if the warranty period is over, the agency is responsible for fixing or replacing the equipment at its own expense.

Second, with ESPC-financed projects agencies find it easier to bundle a number of energy-efficiency improvements so they can function as an integrated system. In this way, one energy services company is responsible for the guaranteed performance of all the equipment. Agency officials told us that, due to tight budgets, upfront funding is limited even when it is available and the agency can typically install only a few of the necessary energy-efficiency improvements. They said it may be years before the agency receives authority to fund additional projects and, due to the competition requirements of federal procurement practices, it is quite possible a different energy services company would be selected to install them. Besides potential problems of integrating the controls for system components installed by two different companies, some savings that would have been obtained if all energy-efficiency improvements had been installed without delay at one time are lost. Energy savings can be achieved more quickly through an integrated approach than implementing efficiency improvements on a piecemeal basis. The lack of a performance guarantee over the life of the equipment purchased with up-front funding and the uncertain, episodic nature of upfront funding can make those projects more risky and less capable of generating an integrated approach to energy management for new and existing equipment.

Agencies Believe Financial Savings Cover Costs, but Whether Savings Actually Do So Is Uncertain

Agencies generally believe that ESPCs' financial savings cover the costs because they design their contracts to cover costs and because they must obtain verification reports from the energy services companies that confirm this point or take steps to correct shortfalls in savings. They cited examples of projects that realized savings in excess of costs and provided data on verified savings for most of their projects. However, the data provided were insufficient to conclude whether savings covered costs of the projects in our review. Furthermore, our work, agency audits of ESPCs, and agencies' differing interpretations about the components of costs that must be covered by savings caused us to question whether savings consistently cover costs. FEMP officials recognize the difficulty in ensuring that actual savings cover costs and have formed a special working group to address uncertainties regarding savings.

Agencies Generally Believe That Savings Cover Costs Because They Are Designed to Do So and Because Companies Must Verify Savings, but Uncertainties Arise from Limitations of Available Data

In response to statutory requirements, agencies design ESPCs so that savings are sufficient to cover costs. In addition, the agencies refrain from committing themselves to ESPCs when they determine beforehand that savings will be inadequate or when the payback will exceed their preferred time frames for the contracts. For example, a DOE official cited several departmental projects that advanced to the final proposal stage but that the agency dropped because the economics for the projects were either poor or the agency did not agree with the savings projections. For one project, the low utility rate (which reduced the amount of savings that could be accrued) and the high cost of performing the work in an area with access controlled for security reasons forced the project's abandonment. In another case, the agency did not agree with the company's projected savings and believed that very little savings would be achieved. FEMP officials noted a requirement for performing a life-cycle cost analysis of individual energy-efficiency improvements, which are then bundled to ensure that the project's overall savings cover costs.

Another reason for agencies' general confidence regarding savings is that energy services companies are required to submit annual measurement and verification reports confirming the savings and, in case of a shortfall, take corrective steps to recoup the savings. These annual reports provide the specific figures on which agencies base their payments to the energy services companies. In some cases, the reports are updated quarterly to give the officials monitoring the project more current data on the performance of equipment, enabling them to spot shortfalls in savings and have the energy services company correct them quickly. In addition, agency officials cited projects that realized savings in excess of costs. For example, the ESPC at Fairchild Air Force Base in Washington State has garnered about $180,000 more per year than it cost. The extra savings have resulted from the equipment operating more efficiently than estimated and actual utility costs that were higher than estimated in the contract.

We asked the seven agencies in our review to provide data on verified savings for each of their projects. In many cases, the projects have not entered their performance periods, so verified savings data are not yet available. To approximate the number of projects that should have verified savings available, we looked at the 111 projects (about 44 percent of the projects) that had been under way for 3 years or more and could reasonably be expected to have at least 1 year of verified savings to

report.[16] In this regard, the seven agencies reported verified savings for most of the 111 projects, but they did not provide cost data that could be compared with the annual verified savings. We did not take steps to obtain the data, which are contained in files at projects located across the country. Thus, we could not conclude from the data provided to us that verified savings were, in fact, covering the costs of these projects. Furthermore, while federal officials are expected to accompany energy services company officials when the data are being gathered for the reports to provide an extra level of confidence in the data's validity, FEMP officials cautioned that this added check may not be happening as often as it should.

An additional limitation of the data is that the measurement and verification process relies not only on actual measurements but on estimates as well. As will be discussed more fully later, estimates may be used extensively in this process, introducing the possibility of incorrect assumptions and errors in the calculations. Moreover, the process evaluates not only the performance of the equipment, but additional factors such as the cost of energy that affect actual savings.

Agency Officials and Audits Cite Projects for Which Savings May Not Cover Costs

Agencies cited specific projects in which the savings have not covered costs. According to a DOE departmental official, savings for 4 of its 10 projects have fallen short of costs because of unexpected problems. DOE's analysis has shown that, in three of the four instances where savings are inadequate, the shortfall has resulted from unpredictable mission changes in the use of the facilities. For example, in one of these cases, the discovery of beryllium contamination forced the closure of some of the buildings involved in the contract. Reductions in electricity consumption accounted for the fourth case. In this instance, in 7 out of 12 months each year, DOE is not meeting the minimum required demand cost that was projected and has to pay for the electrical demand it does not use. As a result, for 7 months of the year, the new equipment associated with the project is not providing any electrical demand savings, so the overall cost savings of the equipment is less than expected. In general, according to the DOE official, it is extremely difficult to accurately predict all the variables that affect energy savings over the 10 to 15 year ESPC contract term, so agencies have to bear some of the risk of inaccurate assumptions at the outset.

[16]We were told that, on average, project construction/installation takes up to 2 years to complete and be accepted by the agency, after which the performance period begins.

While most agencies have not audited their ESPCs, the Army and Air Force audits of ESPCs have found several instances in which savings may not have covered costs. For example, a 2002 Army audit of a 1999 project covering five locations found the Army could pay about $96 million that may not be covered by savings over the 18-year life of the project because savings that the Army agreed to were overestimated. First, the report found the baselines were incorrect because the contractor inflated labor costs for the operation and maintenance baseline by $66 million over the life of the project. Second, it found the contractor also overstated the baselines for electrical consumption and water conservation by more than $30 million over the life of the project. This inflation of both baselines occurred, according to the report, because the agency relied heavily on the contractor to prepare them. Other major contributing factors, the report stated, appeared to be insufficient time to review contract proposals and a desire to award the contract and pay the contractor prematurely. As a consequence, the report concluded, the agency could pay for nonexistent savings over the term of the contract. As another example of questionable estimates, the contractor for an Air Force ESPC increased the original consumption baseline by over 11,000 kilowatts with no indication that Air Force officials questioned this adjustment.

Poor documentation adds to the problem of ensuring that savings cover costs. For example, energy services companies at 8 locations reviewed in a 2003 Air Force audit reported savings of $6.7 million associated with $78 million in ESPC investments, but civil engineering officials could not provide support that they reviewed or validated these numbers. The auditors projected the results for the sample of 8 locations to the 36 included in their review and concluded that the lack of documentation made it impossible to assess the savings that the agency will receive for about $600 million in costs for energy efficient equipment. As noted in the report, this condition occurred because Air Force guidelines did not specifically require maintenance of baseline supporting documentation, a methodology for savings computation, or validation of cost savings. In response to recommendations in the report, Air Force officials stated that they were taking steps to correct these problems. However, we could not determine the status of the payments for either the Army or the Air Force projects in these audits because the audit documentation did not indicate whether payments were made despite the potential savings shortfalls.

Difficulties in Calculating Savings, Ensuring Adequate Equipment Maintenance, and Verifying Savings Also Contribute to Uncertainty About Savings Covering Costs

Accurately calculating financial savings is fundamentally difficult for agency officials to do. Major components of financial savings—baseline energy consumption, the consumption once the energy efficiency improvements have been installed, and the cost of energy associated with both the baseline and the later consumption—are partly stipulated, or estimated, rather than actually measured. In this regard, striking the "right" balance between stipulation (which is less costly but also less accurate) and measurement (which is more costly but also more accurate) is a challenge for agencies. To the extent that stipulation is used in lieu of actual measurement, according to DOE officials, savings calculations may be based on inadequate data or incorrect assumptions, which contribute to uncertainties about the actual savings.

Agency officials commented on how difficult it is to identify the consumption and cost of energy, which forms the basic equation (consumption times cost) that establishes the energy-related baseline and the future financial savings. For example, contractual arrangements with regard to consumption can affect the savings. In the case of "take-or-pay" contracts, agencies may have to pay for a certain amount of projected minimum demand even if they do not actually use it. As noted earlier, this situation has occurred in one of DOE's ESPCs and has reduced its savings to the point where savings will not cover payments under the contract. The cost of energy, as shown in utility rates, can also be difficult to determine. Given their potential complexity, it is easy for energy services companies or federal officials to provide incorrect utility rates, which in turn will have important consequences for the level of savings. Rates need not only to be determined accurately to establish the baseline but also projected as accurately as possible into the future to determine eventual savings. These rates are projected 10 years into the future in ESPC contracts, according to agency officials, but the actual rates can change at any point during the contract period. Anomalies due to weather, fluctuations in energy prices, or other influences can affect the rates. In general, if utility rates go down or increase more slowly than projected, then the actual savings will not materialize. In essence, these rates are stipulated, and the agency bears the risk.

Ensuring that the equipment installed under ESPCs has been adequately operated and maintained is essential for agencies and can affect whether savings cover costs. According to an expert who has worked on Army and Air Force ESPCs, calculations of guaranteed savings assume a high level of operation and maintenance activities, but rapid loss of energy efficiency if equipment output is not maintained can jeopardize savings. He said that

typically a 10 to 20 percent degradation in savings occurs annually on a given ESPC in the event of improper operation and maintenance. He cited the virtual ruin of a chiller (for air conditioning) in only 3 years as a result of improper maintenance.

Similarly, measurement and verification are critical in the longer term for achieving guaranteed savings. In determining these savings, however, energy services companies blend the use of measurement with stipulations in their reporting process. The expert who has worked on Army and Air Force ESPCs noted that, despite the importance of using measurement in addition to stipulation, there are numerous barriers to performing actual measurements. These barriers include a lack of appropriate metered equipment and reluctance by energy services companies to perform measurement and verification because it might work against their interests. An Air Force official observed that in his experience energy services companies prefer stipulation and have limited the number of actual measurement for projects as much as possible. A report for FEMP examining seven ESPCs noted the reliance on stipulation in the projects' measurement and verification plans. The primary reason for using this method was its low cost; however, the report concluded that the large use of stipulated savings left the agencies at risk of unrealized savings. To help agencies use stipulation correctly, in 2000, FEMP issued supplemental guidance on measurement and verification that specifies that some stipulation may be used in lieu of measurement when there is a reasonable degree of certainty about the stipulated values, their contribution to overall uncertainty is small, and they are based on reliable and documented sources of information.

A Special Working Group Has Been Formed to Address These Uncertainties

DOD and FEMP recently established a special working group to address the uncertainties about actual savings. The Energy Savings Discrepancy Resolution Working Group, formed in late 2004, is developing approaches to compare projected and actual savings and to explain any deviations. Because it has just commenced these studies, the group has obtained preliminary results regarding only one project. The group found that the projected savings for this project were diminished by consolidations of agency missions, expanded construction, and new demands for energy that had nothing to do with the ESPC. Officials said they chose this project because it came with a well-developed baseline, which is often not available for careful evaluations of this sort.

Agencies' Differing Interpretations of the Components of Costs That Must Be Covered by Savings under the ESPC Legislation Add to Uncertainty That Savings Cover Costs

The statute governing ESPCs provides that "aggregate annual payments" under an ESPC may not exceed the amount the agency would have paid for energy without such a contract.[17] However, agencies differ in their interpretation of this statute. In practice, it remains uncertain whether contract payments may be made only from utility savings resulting from the ESPC or from funds already earmarked for equipment replacement and other sources to reduce the length of the contract and finance charges. Within DOE, for example, disagreement about the interpretation of the statute is shown by a FEMP guide on the one hand and an opinion provided by DOE's Office of General Counsel on the other.

According to a DOE departmental official, the main source of guidance for agencies regarding lump-sum payments is FEMP's "Practical Guide to Savings and Payments in Super ESPC Delivery Orders," issued in January 2003. Section 3.6 explains that agencies may use existing funds that would otherwise be used for operation and maintenance and repair and replacement projects (1) to increase ESPC project investment and include a more comprehensive set of energy-efficiency improvements than would be possible otherwise, or (2) to lower the financed amount and shorten the term, thereby reducing interest costs over the term. The section adds that one-time energy-related cost savings are often applied as a preperformance-period payment to the energy services company. However, such payments may also be scheduled as payments during the contract performance period.

Similarly, section 4.4.1 of the FEMP guide states that if appropriated funds are available for general maintenance, operation, repair, and replacement of energy-consuming systems (as opposed to being earmarked for a specific project via a capital line item), they may be used for payments to the energy services company. Adding that one-time savings and payments from general operation and maintenance and repair and replacement accounts merit further clarification, the discussion notes that the intent of the ESPC statute is to permit the use of funds available in general operation and maintenance and repair and replacement accounts that could be used for energy-related purposes for preperformance-period ESPC payments. It also notes that one-time payments scheduled during the performance period may not exceed the amount planned and budgeted in the general

[17] 42 U.S.C. § 8287 (a)(2)(B).

operation and maintenance and repair and replacement accounts for the avoided project.

Despite the FEMP guide's attempt to clarify allowable sources of funding for ESPC projects, some uncertainties remain. Even within DOE, for example, the General Counsel's office expressed an opinion at variance with the FEMP guide. A memo from the General Counsel's office to the assistant secretary for Energy Efficiency and Renewable Energy in August 2000 stated that, in the case of buyouts and buydowns in super ESPC projects, energy cost savings must exceed payments in each of the contract years. The memo added that, because ESPCs are performance contracts, payment is conditional upon the realization of energy cost savings. The memo stated that buy downs are in effect prepayments which, in any contract year, may not exceed guaranteed and verified energy costs savings for that year. The memo concluded that prepayments have the effect of paying a contractor before the savings have occurred and under this analysis such prepayments are prohibited.[18]

GSA's policy regarding buydowns is drawn primarily from the FEMP guide. In GSA, the motivation for using the funds allowed by this guide is the low utility rates in some of its regions. These low utility rates reduce the savings accrued by a proposed project, necessitating a longer contract term so that sufficient savings can be generated for covering costs. According to GSA officials, the agency has used upfront buydowns frequently, which has enabled GSA to reduce the cost and length of its contracts. They noted that even a small buy down has a large impact over the typical length of such contracts.

GSA officials told us that the lack of clarity regarding financial terms in earlier FEMP guidance led to GSA being unable to buy down ESPCs in some cases. One of GSA's main complaints in this regard stemmed from inconsistencies across its regions about what funding sources could be applied to buy downs. Following comments to FEMP and FEMP's revision of the guidance, GSA officials noted that there have been no complaints since October 2002. Asked if there are any remaining improvements needed for the sake of clarity, GSA officials told us that there is still some

[18]In commenting on a draft of this report, DOE disagreed with our assessment that the opinion of the General Counsel's office and FEMP guidance are at variance. Nevertheless, DOE plans to address this point through guidance and in an upcoming report on ESPCs to the Congress. Consequently, we did not change the report text.

uncertainty about how much can be financed and how much can be bought down on any given ESPC project.

The Navy has no written policy on the use of buydowns and defers to contracting officers to determine when additional payments can be made. Because of the lack of clarity in this area, the Energy Programs division director at the Naval Facilities Engineering Service Center has asked for written guidance from the Navy but has not received it. The director told us that contracting officers evaluate the legislation and the terms of the contract and apply them to individual contracts and situations. He said that there have been three different situations in which the Navy has used buydowns. First, before or during construction, the Navy has identified avoided costs for equipment whose purchase is already included in the budget but that will not be needed as a result of an ESPC. Funds associated with these avoided costs can be used to reduce the amount of money owed in the contract because the Navy views these avoided costs as resulting directly from the ESPC. Second, during the actual performance period of the contract, the Navy has used other utilities budget monies from its working capital fund and mission funding to reduce the amount of money owed. However, it has stopped this practice because GAO raised concerns about the money not being linked with savings from the ESPC. Third, in cases of terminating specific energy efficiency improvements or terminating a number of years from a contract, the Navy has used funds from its utilities budget. The division director stated that greater clarity regarding the use of funds to make additional performance period payments from the utilities budget, but not directly associated with the ESPC, would be helpful because these payments can reduce long-term financing costs and save money for the government.

Agencies Are Concerned About Officials' Lack of Necessary Expertise and Information and About Competitiveness of the Super ESPCs

Agencies expressed concerns about the expertise and information needs of the agencies and insufficient competition among financiers and energy services companies, all of which can affect agencies' ability to protect the government's financial interests in using ESPCs. Regarding expertise and information, agency officials many times lacked technical and contracting expertise and information on past contracts needed to effectively evaluate the ESPC proposals and monitor the contracts for savings. As a result, they often relied on the energy services companies, calling into question the quality of the deals the officials struck and their certainty that guaranteed savings were realized. Expertise was lacking mainly because of inexperience with ESPCs, and information was lacking mainly because agencies are not required to collect and disseminate it. Regarding

insufficient competition, agencies believe there may not be enough competition among finance companies and energy services companies. As a result, agencies may be paying too much for financing and other terms of the contracts and may be getting poor services after the contracts have been signed. In recognition of these shortcomings, the agencies are taking a number of corrective steps on an ad hoc basis and have developed an interagency steering committee to address some of them collectively. We did not assess the effectiveness of the agencies' efforts.

Agencies Often Lacked the Expertise and Information Needed to Effectively Develop and Monitor ESPCs

Those project officials we interviewed who were able to marshal the expertise and information they needed believe that having adequate expertise and information are critical to the success of the ESPC. For example, officials at the Portsmouth Naval Shipyard, which undertook a $43 million ESPC in 1999 to upgrade its power plant system, relied on the U.S. Army Corps of Engineers' Huntsville Center and the Navy contracting centers for technical and contracting support and on a consultant for engineering support and analysis of utilities forecasting. According to the Navy official who developed and oversees the Portsmouth project, the expertise provided by the three sources was essential to the success of the project. In particular, the consultant's analysis of electricity rate projections, made possible because of the consultant's knowledge of utility markets in New England, allowed the Portsmouth officials to question the energy services company's rate projections and negotiate more favorable rates for the ESPC.

As previously discussed, developing and monitoring an ESPC are difficult, requiring both technical and contracting expertise. In particular, for the development phase of ESPCs, we learned that agencies frequently had difficulty with technical responsibilities such as accurately calculating energy-use baselines and forecasting utility rates. For example, the Air Force and Army audits of ESPCs noted a number of instances in which baselines were incorrectly established, and numerous officials told us how difficult it is to accurately establish these baselines. Along those lines, the manager of DOE's departmental energy management program told us that officials at the project level do not always have the necessary expertise to forecast utility rates and, given the complexity of forecasting these rates, particularly over the long terms typical of ESPCs, it is easy for the officials to agree to incorrect estimates. ESPC experts at DOE's Oak Ridge National Laboratory agreed, saying it may be unrealistic to expect a government contracting officer to be able to effectively negotiate some contract terms

such as utility rates because they are technically difficult to understand and forecast.

Regarding monitoring ESPCs once the energy-efficiency improvements are in place and operating, the measurement and verification reports the energy services companies submit to substantiate savings pose a challenge for agencies because of their technical nature. A number of the officials we interviewed told us that the level of expertise at the project level is often inadequate to perform a thorough evaluation of the measurement and verification reports. The manager of DOE's departmental energy management program noted that, in the past, DOE has not reviewed measurement and verification reports. The challenge of effectively reviewing these reports, however, has led DOE to consider requiring that DOE headquarters become involved in measurement and verification evaluations. In addition, according to an expert in measurement and verification for the Air Force, lack of technical knowledge is the primary cause for agencies' failure to conduct appropriate measurement and verification oversight. In this regard, a lack of basic adherence to measurement and verification plans has also been observed. The project manager of the Air Force audit noted that, among the eight bases included in his review, only one had properly followed its plan.

Another area requiring technical expertise involves a careful balance between stipulation and measurement and striking this balance has been difficult for agencies. According to DOE officials, key guidelines for measurement and verification do not define the best method for each energy-efficiency improvement that balances the trade-offs between cost and accuracy. Consequently, the "right" amount of measurement and verification for many improvements remains uncertain and requires expertise to determine in each case. Agency officials have generally agreed that measurement and verification, at least in the first years of using the super-ESPC contracts, tended to rely more heavily on stipulation than on actual measurements for determining long-term savings. An Air Force official told us that, in his view, the heavy reliance on stipulation during the earlier years of the program worked to his agency's disadvantage with regard to savings. In more recent contracts, however, he believes that a better balance between stipulation and measurement has been reached because there has been a greater reliance on expertise in this area.

In some cases, we were told, the officials may have the technical, but not contracting, expertise they need. Managers of the VA's ESPC program are confident that the agency's project-level officials have enough engineering know-how to understand the technology and construction process involved with ESPCs; however, the Managers are concerned that project level officials do not understand the financing, markups, or other aspects of the business end of ESPCs well enough, giving the energy services companies an advantage over the agency officials, who, in turn, may not be able to make the best business decisions for government. For example, according to the Manager of DOE's departmental energy management program, in his experience, markups and financing rates often go unchallenged by project-level staff, even though they are negotiable, because the project officials do not have the expertise to challenge them. Furthermore, officials who oversee GSA's energy program told us that GSA energy managers have had to negotiate with energy services companies on markups and financing terms, even though they were not adequately trained in that contracting technique.

Related to expertise, ESPC project-level officials also may not have the information at their disposal that would help them develop the best possible contracts and effectively oversee contract implementation. A number of officials we interviewed said they had neither benchmarking data on prices and other contract terms agreed to for other ESPCs, nor knowledge of "lessons learned" on other contracts, making it difficult for the officials to evaluate project proposals and to negotiate effectively. Of the seven agencies included in our review, DOE, GSA, and the Navy compile and maintain some data on their ESPCs in one location. Although individual project files contain some data that could be used for benchmarking prices and terms, agencies are not required to compile and disseminate such information across their ESPCs, and the other four agencies told us they do not. Similarly, as discussed previously, although agencies are required to monitor the performance of energy services companies on individual projects to determine whether expected savings are being realized, they are not required to keep track of that information at the agency level. As a result, the agencies may not have historical information on contract performance to use in choosing energy services companies and developing terms of the contracts, such as the measurement and verification plans.

Officials responsible for ESPCs do not always have the expertise and related information they need for a number of reasons. Many of the project-level officials are inexperienced with ESPCs. In that regard, several of the

military project officials we interviewed said that their current experience is their first encounter with an ESPC, and the limited training they received did not adequately prepare them. Furthermore, DOD officials told us that because military staff are frequently reassigned after a few years, it is not likely that one person will be on site throughout the entire ESPC contract, and the officials expect their replacements to be similarly inexperienced with the contracts. Further exacerbating the problem, we were told that many of the military and civilian officials charged with developing and overseeing ESPCs only work on the contracts part-time so the efforts they can devote to the process are limited.

Most agencies do not require their officials to use the contracting centers in DOD and FEMP when developing ESPC projects; nonetheless, most of them do. In the case of interviews with officials from 27 projects in which the officials discussed their use of contracting centers or other sources of expertise in detail, officials from 26 of these projects said they found the expertise helpful. However, for 13 of the 26 projects that got assistance, officials cited areas of the ESPC development process in particular for which they could have used more expertise. For example, GSA and VA officials told us that their FEMP project facilitators, which cost the agency $30,000 for each project, did not perform some functions that the agencies thought would have been beneficial, such as preparing estimates of project costs or advocating for the agencies during contract negotiations. Some project officials that used the contracting centers found the centers to be inadequately funded. For example, one Air Force project official told us that the Air Force's center provided the project with excellent support, but could not visit the project site due to resource constraints. Similarly, another official told us he did not consider using the U.S. Army Corps of Engineers' Huntsville Center because he thought, based on his previous experience with the center, that it was understaffed and would not be able to devote enough effort to the project.

As a result, we were told that agencies often rely on the energy services companies to provide much of the needed expertise to develop and monitor the ESPC projects, potentially raising a conflict of interest.[19] One company representative told us that agency officials are typically not familiar with the energy savings potential of the new equipment being

[19]As we pointed out in our earlier report, once agencies decide to use an ESPC and select an energy services company to work with, they must ensure that the government's interests are protected from the potential conflicts that may arise.

proposed for installation, for example, and another representative said that agencies need more ESPC expertise. A number of agency officials agreed that they rely on the energy services companies because they lack certain expertise themselves. For example, an Air Force official told us that project officials on remote air bases tend to have less-experienced staff and rely on the energy services companies for essential ESPC activities such as performing life-cycle cost analyses.

Agencies Expressed Concerns About Competition Among Finance Companies and Energy Services Companies

Some agency officials we spoke with expressed concerns that there may not be enough competition among finance companies and that this could lead to higher than necessary financing costs for ESPCs. Some agency officials told us they believe the financing rates for ESPCs are high compared with rates to finance energy-efficiency improvements by other means. For example, according to VA ESPC program managers, the rates VA has negotiated to purchase energy-related equipment via another financing mechanism—enhanced–use leases—are generally lower than its ESPC rates.[20] For the 241 ESPC delivery orders for which we received financing data, financing rates ranged from 5 to 13 percent, with an average across all projects of almost 8 percent. According to an ESPC expert at DOE's Oak Ridge National Laboratory, improving the financing of ESPC projects is one of the most important ways to achieve a better deal for the government.

Agency officials stated that there may be too few companies available to finance ESPCs. For example, the head of the Navy's ESPC program told us that there have been difficulties in finding investors for its ESPCs and needs more investors in the program. VA officials responsible for overseeing the agency's ESPCs echoed this concern. They believe there are only three or four "boutique" companies that specialize in financing ESPCs, and that the absence of more financing companies drives up the financing rates. They cited findings by a consultant the agency hired to review ESPCs that reported that the lack of competition among energy financiers creates higher rates, and the officials believe that injecting more competition into the process may result in better rates. The head of FEMP's Super ESPC Program estimates that there are eight financiers that have provided bids for financing ESPCs.

[20]Enhanced-use leases allow authorized agencies to enter into long-term real property leases. Like ESPCs, they allow agencies to use private funds to finance improvements to real property, including energy-efficiency improvements.

Agency officials also said they have seen little evidence that the energy services companies are seeking out the most favorable financing rates. Historically, energy services companies were not required to provide documentation of having sought favorable rates. According to a contracting officer who reviews the Army ESPCs, the agency has sometimes obtained better rates when it required at least three quotes from financiers. According to the Air Force and Navy officials responsible for reviewing ESPC proposals, some proposals did not contain sufficient information to adequately determine if the financing costs were reasonable. The Deputy Manager of DOE's departmental energy management program told us that including documentation of competition among financiers in the ESPC proposals is needed to provide better assurances that the government is getting the best financing rates. In his experience, an energy services company often wants to use a single financier for all of its ESPCs, so he believes little or no competition for financing exists for those contracts. The energy services company representatives rebut this contention, saying they consistently seek the most favorable financing for ESPCs. They told us that lower financing costs allow more of the project's savings to be spent on energy-efficiency improvements, from which the companies profit, rather than on finance costs.

Other agency officials and representatives of finance companies and an energy services company have offered other explanations for why finance rates for ESPCs are as high as they are. For example, according to FEMP and GSA ESPC program managers, as well as representatives of the three financing companies in our review, agency officials generally do not understand that certain characteristics of ESPCs increase the risk of financing those contracts and may drive the rates up. Chronic late payments by agencies are one such characteristic. Others include the possibility that the agency will withhold its payments if the savings guaranteed in the contract are not realized, the additional uncertainty about contract performance due to the long contract terms typical of an ESPC, and the possibility that the agency will make unscheduled payments that will reduce the financier's return on the contract. According to GSA's ESPC Program Manager, these risk factors limit the number of companies willing to finance ESPCs, and the complexity of the contracts drives financing rates higher.

We were unable in the scope of this work to determine the extent, if any, to which a lack of competition, rather than other factors, has caused finance rates for ESPCs to be higher than for other methods of financing energy-

efficiency improvements. However, due to the large number of questions raised by agencies, we believe this question should be explored in more depth.

Some agency officials also expressed concern that there may not be enough competition among energy services companies. In general, they told us there may be too few companies on the lists and those companies may be charging prices that are too high and providing inadequate services. Regarding the number of companies available, some officials told us that often only the large companies on the lists are willing to undertake ESPCs, effectively limiting agencies to three or four companies to choose from. FEMP ESPC program managers affirmed that it may be only the largest companies that can afford the extended negotiation and contract implementation periods of ESPCs before getting paid for their services. Further, GSA ESPC managers told us they have received complaints from energy services companies that would like to take on smaller ESPCs, but believe they are disadvantaged in obtaining that business because they are not on the lists and have not been given a sufficient chance to compete for that status. In that regard, officials from some agencies told us that the companies approved for the lists often will not bid on projects unless they are worth at least $1 to $2 million. As a result, the agencies must forego undertaking the smaller projects or combine multiple locations into a project to meet the threshold. According to DOE and GSA officials, it is more difficult to manage projects with multiple locations. In addition, according to the head of FEMP's Super ESPC program, multiple energy services companies that did not compete in the original super ESPC competitions have communicated their desire to participate in a recompetition and to be added to lists of prequalified energy services companies.

Some agency officials linked a perceived lack of competition among energy services companies with high markups and prices for other components of ESPCs and poor services—especially after the contract is signed. Regarding markups, energy services companies charge a percentage of the cost of each energy-efficiency improvement to cover company costs for, among other things, overhead, sales, markup on subcontractor-supplied materials and labor, and profit. Both the Army and FEMP super ESPCs contain pre-negotiated markup maximums that are intended to cap the amount of markup that the energy services company can add to the basic price of each energy-efficiency improvement covered by the contracts. FEMP's markup maximums typically range from 26 to 31 percent—but may be as low as 5 percent and as high as 100 percent—depending on the

energy-efficiency improvement on which they are based and the region of the country the improvement is implemented. The markup maximums the U.S. Army Corps of Engineers' Huntsville Center provided to us range from 15 to 30 percent. A number of agency officials told us that, as a practical matter, the energy services companies resist agencies' efforts to negotiate markups that are lower than the caps. According to an Air Force contracting center official, the Air Force super ESPCs do not contain prenegotiated markup maximums for energy-efficiency improvements and the negotiators that use the Air Force super ESPCs typically obtain more favorable markups than those who use the Army Corps of Engineers' Huntsville Center's or FEMP's super ESPCs. To test this assertion, we examined data on markups in ongoing ESPCs that agencies reported to us. The reported markups ranged from 10 to 40 percent for projects under FEMP's super ESPC, from 13 to 32 percent for the U.S. Army Corps of Engineers' Huntsville Center's, and from 9 to 29 percent for the Air Force's. However, because the agencies did not report markups for all of the projects in our review and because data did not tie markups to individual energy-efficiency improvements, we could not determine whether the projects using the Air Force super ESPC actually resulted in more favorable markups.

With regard to prices of some components of ESPCs, a number of agency officials we interviewed expressed concern about their ability to negotiate reasonable prices in their ESPCs. DOD agencies are required to give all energy services companies prequalified for a super ESPC an opportunity to participate in a limited competition at the initial proposal stage of a project. The competition is limited because, ostensibly, the companies have already passed government scrutiny in order to be included on the super contract. Although civilian agencies do not have the same requirement, they may choose to conduct a limited competition, and most did for the projects in our review. For the limited competition, the agencies provide the companies with such information as current utility rates and the types of improvements the agency is considering that the companies can use to develop their initial proposals. The initial proposals contain preliminary cost estimates and other information the agencies use to narrow the field to the single company it will do business with on the project. Prices are not discussed with any specificity until after the selected company has prepared its formal project proposal, even though the formal proposal can take more than 6 months to complete and review. By that time, we were told, the agency may feel pressure to continue with the company, possibly accepting prices that are too high because it is too costly to start over with another company. Lacking the ability to force the energy companies to

compete more rigorously on prices, ESPCs may cost more than they should.

Finally, some officials complained about the unsatisfactory services provided by the energy services companies. For example, one Air Force energy manager told us that the quality of work by the energy services company declined substantially after the delivery order was awarded. According to this official, the energy services company lacked the internal capability to properly do the work yet resisted hiring additional staff. In addition, the company did not use the subcontractor identified in the project proposal; as a result, the agency could not determine if the costs claimed by the company were valid. Some other problems cited by officials included inflated costs and over-billing for equipment and labor, insufficient and/or redundant design work, substitution of cheaper materials, untimely responses, and disruptive staffing changes.

None of the companies on the super ESPC lists have had to re-compete for their positions on the lists since they won them 6 to 9 years ago, and the re-competitions planned for them will not occur for another 1 to 2 years. The companies on those lists have not changed unless they merged with others, went out of business, or chose to be taken off the list. While there are no requirements for how frequently the super ESPCs must be put out for competition, GSA's practice regarding its contracts for the Federal Supply Schedule, which are multiyear contracts similar to the super ESPCs, is to renegotiate the contracts every 5 years to help ensure the contracts remain competitive. According to the head of FEMP's Super ESPC Program, DOE policy calls for re-competing contracts such as the super ESPCs every 5 years.

Our own analysis of agency data on ESPC use indicates that ESPC contracts appear to be highly concentrated among a relative few companies in some regions. We calculated the Herfindahl-Hirschman Index (HHI)—an index used by the Federal Trade Commission and the Department of Justice to evaluate mergers—for each of the six regions defined by the FEMP super ESPCs. In four of the six FEMP regions, the HHI was above the level at which industries are typically considered to be moderately to severely concentrated. While such measures do not by themselves indicate a lack of competition, they do suggest that a more complete evaluation of the competitiveness of the ESPC contracts is warranted.

Individual Agencies and the Contracting Centers Are Taking Steps to Address Concerns about Expertise, Information, and Competition

Individual agencies have taken steps to address concerns about expertise and related information and competition. Among other steps, to bring expertise and information from previous ESPCs to bear on new ones being undertaken by their agencies, DOE and the Navy each require ESPC proposals be reviewed by experts either in-house or at FEMP and do not allow the projects to proceed into implementation without approval of these experts. DOE and GSA compiled lists of lessons learned and have shared them among project officials within their agencies. In addition, the Air Force, the Army, the Navy, DOE, GSA, and VA each have begun requesting evidence of competition for financing rates before they will agree to an ESPC for their agencies. Furthermore, rather than relying exclusively on the super ESPC contracts, officials from VA are pursuing alternatives to introduce price competition into the process.

The contracting centers have also taken steps to bolster the expertise and information available to their officials and to address the competitiveness problems with the super ESPCs. Most notably, all the centers have, among other things, issued guidance to help agencies with developing and monitoring their ESPCs and begun requiring that project proposals contain documentation of multiple financing bids. Furthermore, the centers are working to have newly competed super ESPCs available to agencies between fiscal years 2007 and 2008. The U.S. Army Corps of Engineers' Huntsville Center plans to have its new super ESPCs in place by the beginning of fiscal year 2008 and has begun that process. According to a U.S. Army Corps of Engineers' Huntsville Center contracting office official, the center has not recompeted its super ESPCs because the current contracts do not expire until the end of 2007 and developing the revisions to the contracts has proven to be a slow process that requires coordinated input from multiple ESPC experts and contracting centers. FEMP also plans to recompete its super ESPCs. It plans to begin the process in 2006 and have the new contracts in place sometime in 2007. According to the FEMP Super ESPC Program manager, FEMP has not recompeted its super ESPCs to date primarily because FEMP has focused its efforts on helping agencies undertake successful ESPCs and developing guidance for the agencies to use. The Air Force does not presently plan to recompete its contracts but will reconsider that decision over the next 2 years. According to managers of Air Force's contracting center, Air Force ESPC projects are increasingly using FEMP's super ESPCs because doing so provides the project-level officials with more contract and energy services company options. Consequently, rather than re-competing the Air Force super ESPCs, the managers may begin to phase out their agency's use of the Air

Force super ESPCs as they increasingly use FEMP's with Air Force-specific clauses added.

Although most of the steps agencies and contracting centers have taken to address expertise, information, and competition needs have been ad hoc, they have recently begun to address them more collectively via an interagency steering committee and its working groups. The purposes of the steering committee include sharing experiences and lessons learned among the federal agencies that use ESPCs the most, identifying process and procedural improvements, and developing best practices. The steering committee plans to develop performance metrics by which its efforts can be evaluated by June 2005. In addition, the steering committee and its working groups have accomplished some of their objectives to date. For example, the working group on measurement and verification issued a template standardizing the measurement and verification process. Each of the contracting centers used some of the group's recommendations when it developed new measurement and verification guidance. See table 3 for a more complete list of steps the contracting centers have taken.

We believe that many of the steps the individual agencies and contracting centers have taken to address expertise, information, and competition issues promise to help improve those areas. However, because of their ad-hoc nature and because many are relatively new and untested, we did not attempt to assess their effectiveness.

Table 3: Steps Contracting Centers Are Taking to Address Concerns About Expertise, Information, and Competitiveness

Contracting centers	Expertise and data	Competition
FEMP	**Expertise:** (1) Developed ESPC delivery order guidelines in October 1999 and updated in February 2004, (2) Developed guidance on measurement and verification in September 2000, (3) Developed a guide regarding ESPC savings and payments in January 2003, (4) Developed ESPC-specific training on process, tools, and best practices in 2004, (5) Facilitates ongoing working groups involved in ESPC issues including measurement and verification, performance period administration, and energy savings discrepancy resolution, (6) Offers Project Facilitators	**Financing:** (1) Facilitates the financing working group of the ESPC Steering Committee, (2) Implementing financing reforms in super ESPC modification as of late 2004, (3) Educating agencies and fiance companies more on ESPC financing **Contract terms**: (1) Issued modifications to super ESPC language and terms in late-2004 with changes effective in 2005; (2) Plans to update markup maximums during re-competition of super ESPCs by 2007; (3) Will begin the super ESPC re-competition in late 2006 to be completed by 2007; (4) Plans to recompete every 5 yrs

(Continued From Previous Page)

Contracting centers	Expertise and data	Competition
	Data: Collects data on basic contract terms at time of signing but does not collect data on contract modifications past the first year or monitoring data showing energy savings	**Pricing competition:** Facilitates the Price Reasonableness working group of the ESPC Steering Committee - tasked to provide tools and guidance in negotiating competitive pricing
Navy	**Expertise:** (1) Provides centralized engineering and contracting expertise, (2) Developed process and contract guidance in October 2003, (3) Developed a price reasonableness guide, (4) Shares lessons learned throughout agency, (5) Requires in-house or FEMP approval of new ESPCs	**Contract Terms:** (1) Helping sites implement additional contract language to better protect the agency's interests
	Data: Maintains a central ESPC database	**Financing**: Requesting documentation of multiple financier bids
Air Force	**Expertise:** (1) Developed M&V templates for each technology and other guidance beginning in 2001, (2) Provides expertise and support to project officials (3) Created a Resource Efficiency Manager position to address expertise needs.	**Financing**: Requesting documentation of multiple financier bids
	Data: Centrally collects basic contract data and modification information, but does not collect monitoring or savings data	**Contract terms:** (1) Modifying M&V language in the super ESPCs, (2) Contract agency helping implement additional contract language to other super ESPC templates; (3) 2005-2006 evaluating either re-competing Air Force's super ESPCs or using FEMP's with Air Force-specific clauses added
Army Corps of Engineers' Huntsville Center	**Expertise:** (1) Developed ESPC training document, (2) Participates in FEMP working group, (3) Uses a template to assist agency officials negotiating with contractors	**Contract terms:** (1) Currently revising proposal requirements and other language via bi-lateral negotiations with energy services companies; (2) revising additional language and terms by 3rd quarter FY2005, to be included in planned recompetition for FY2007
	Data: Collects data on some contract terms, and may not have all modifications on record	

Source: GAO analysis of contracting center information.

Conclusions

ESPCs provide a valuable and practical tool that federal agencies use to meet energy reduction, environmental, infrastructure, and other goals. Clearly, agencies that have used ESPCs to install more efficient, energy-saving equipment have reduced their energy consumption and associated environmental impacts. Further, by using private financing, agencies have also been able to more quickly and consistently replace an aging and energy-wasting infrastructure—an infrastructure that the agencies have identified in their capital management plans as being in need of billons of dollars of repair and restoration.

While using ESPC-financed projects has permitted agencies to reduce energy consumption and achieve other goals, the extent to which savings cover costs as required by legislation remains uncertain. The complexity of ESPCs accounts for much of this uncertainty. ESPCs are complicated

because of the wide array of technical, financial, legal, and energy-related issues that must be resolved both in the short and long-term. Because of this complexity and the cost of more extensive reliance on actual measurements, agencies have tended in the past to defer to the expertise of energy services companies and the use of stipulation in lieu of measurements. In doing so, they may have paid contractors for energy savings that did not occur or may have negotiated contracts that are more expensive than necessary. Limited agency audits and our interviews have disclosed indications of these problems in dozens of projects. Since most agencies have not audited their use of ESPCs and broad performance information and documentation are unavailable, we could not determine how widespread these problems are. Without comprehensive information on actual performance of the contracts once they have begun to unfold, however, the agencies' task of overseeing the contracts becomes difficult. In turn, the lack of comprehensive information on ESPC performance makes it more difficult for the Congress to determine the level of support it should lend to agency use of the financing mechanism. Finally, because DOE reports to the Congress about agencies' progress toward achieving energy goals, the lack of comprehensive data on the results of ESPCs also reduces congressional awareness in this area. In a more general context, additional information would be useful in comparing the costs and benefits of ESPCs relative to alternative financing mechanisms. This information could include, among other things, the effects of deterioration of energy efficiency savings in the absence of measurement and verification and delays in obtaining up-front appropriations relative to obtaining funds through ESPCs.

In response to these problems, agencies have begun to recognize the importance of developing and using their own expertise more effectively, but this has occurred only recently and, at this point, they have not ensured that it is brought to bear during negotiations and in the longer term. The ability to correct these problems requires the availability of high-quality information and the expertise to use it effectively during negotiations and throughout the life of these long-term contracts. In developing and using appropriate expertise and information, agencies can also begin to assemble better information about governmentwide experiences with ESPCs, including ways of improving such areas as measurement and verification. They can also draw conclusions regarding the effectiveness of agencies' working relationships with individual energy services companies, which could provide another valuable tool for agencies to consider. Finally, as ESPC use continues, sharing best practices or lessons learned in all of these areas would go a long way toward making ESPCs as cost effective as

possible while also helping to ensure that the federal government's financial interests are protected. Absent further efforts to rely on appropriate expertise and improve the quality of information, agencies will continue to be at a disadvantage in negotiating effective ESPCs and less likely to achieve long-term energy and financial savings.

Agencies have expressed concerns about the adequacy of competition among financiers and energy services companies in developing ESPCs and consequently their ability protect their interests. Agency officials and others expressed concerns that financing costs may be too high because there may be too few companies that finance ESPCs and energy services companies may not seek the most favorable financing. Other problems such as the length of time between competitions for the approved list of energy services companies and the lack of price competition inherent in using the super ESPCs also reinforce these concerns. Agency officials have taken some steps to address these concerns, but the question of sufficient competition points toward the need for further measures such as requiring greater competition among financial service companies to potentially reduce interest rates and putting the super ESPCs out for competition more frequently.

Differing agency interpretations of the law establishing ESPCs have contributed to agency uncertainties about the use of funding sources other than savings for reducing investments in ESPCs through upfront payments. Within DOE, inconsistencies and uncertainties about interpretation of the statute are apparent. In practice, some agencies believe that contract payments may be made only from utility savings resulting from the ESPC while other agencies make a lump-sum payment on the contract—from funds already earmarked for equipment replacement or from other sources—to reduce the length of the contract and finance charges. In our view, these inconsistencies reflect a lack of clarity about the use of down payments in general and what does—or does not—constitute a legitimate source of funds for such down payments if they are allowed.

Matter for Congressional Consideration

To ensure that agencies use ESPCs as the Congress intends, we recommend that the Congress consider revising the relevant statute to more clearly define the components of costs that must be covered by savings. In particular, the Congress could clarify whether agencies may make lump sum payments using funds other than their current year utility savings.

Recommendations for Executive Action

To better ensure that federal agencies undertake only those ESPCs having the greatest likelihood that savings will cover costs and that the agencies negotiate the best possible contract terms and monitor the contracts properly, we are making recommendations to the heads of those agencies included in our review, namely the Secretaries of Defense, Energy, and Veterans Affairs, the Attorney General of the Department of Justice, and the Administrator of the General Services Administration. Our recommendations focus on the areas of information, expertise, and audits:

- Collect and use ESPC-related data more effectively by (1) compiling information on key contract terms—such as interest rates and markups for energy-efficiency equipment—for each ESPC and as a key part of best practices make information accessible to agency officials in negotiating subsequent ESPCs and (2) tracking actual costs, verified savings, and any changes to ESPC projects that may affect these costs and savings.

- Ensure that the agency officials responsible for ESPC decision-making use appropriate expertise when they undertake an ESPC. If the officials do not have sufficient expertise themselves, they should be required to obtain it from such independent sources as a centralized pool within the agency; the contracting centers of the Air Force, the U.S. Army Corps of Engineers, the Navy, and FEMP; or from private parties. The costs of acquiring this expertise should be considered in deciding whether to use an ESPC.

- Require, as appropriate and in line with available resources, that inspectors general or other audit offices conduct audits of ESPC projects to ensure the projects are achieving their expected results.

Because the contracting centers can play an important role in helping the agencies develop and monitor their ESPCs, we recommend that the secretaries of Defense and Energy require the contracting centers to

- work with the agencies that use them to ensure that the contracting centers have the information and expertise needed to effectively develop and monitor their ESPCs; and

- continue and expand their ongoing efforts regarding competition, including taking steps such as re-competing the super ESPCs as soon as possible and then more regularly.

Finally, to strengthen the information available to the Congress for assessing the progress and effectiveness of ESPCs, we recommend that the Secretary of Energy collect more extensive information on agencies' ESPCs, including such critical elements as cumulative verified savings and costs, and include that information in its annual report to the Congress. As a part of this effort, we also recommend that the Secretary compare projects funded by ESPCs with projects funded by upfront appropriations to determine their relative costs and benefits. Specifically, the Secretary should determine, among other things, the effects of deterioration of energy efficiency savings in the absence of measurement and verification and delays in obtaining upfront appropriations relative to obtaining funds through ESPCs.

Agency Comments

We provided the Departments of Defense, Energy, Justice, and Veterans Affairs, and the General Services Administration, with a draft of this report for their review and comment. DOD, DOE, VA, and GSA provided written comments, which are presented in appendixes II through V. The Department of Justice responded by email on June 2, 2005. All of the agencies generally concurred with the findings, conclusions, and recommendations and stated their intention of implementing the recommendations. The agencies also submitted technical and clarifying comments, which we have incorporated as appropriate.

In addition, DOE expressed concerns in two areas. First, regarding our discussion about confusion over the allowable sources of funding for ESPCs, DOE expressed the view that its General Counsel's office's opinion regarding prepayments was not at variance with FEMP guidance as we reported. Nevertheless, the agency noted that it will take steps to ensure that FEMP guidance is consistent on this point to avoid future confusion. Furthermore, DOE supports our recommendation that the Congress more clearly define the components of ESPC costs that must be covered by savings and the agency stated that it will address the issue in a report to the Congress on ESPCs that is currently in the review and approval process within the agency. We have added language to the report noting DOE's disagreement with our discussion of this issue. Second, DOE expressed concern that FEMP does not have authority to do more to facilitate oversight of ESPCs, as we recommended. While we recognize DOE's concern with taking on additional oversight responsibilities, we note that, in commenting on our draft report, all of the agencies stated their intention to work cooperatively with DOE and the other agencies to implement our recommendations. In recommending that DOE facilitate oversight of

ESPCs, we intended that the agency take such actions as collecting data on verified savings and costs and reporting such information to the Congress, as well as to the agencies themselves, to aid the Congress and the agencies in their ESPC oversight actions. We believe that it is appropriate at this point for DOE and the other agencies to continue to use a cooperative approach, such as through the Federal ESPC Steering Committee, to develop and implement consistent and best practices for ESPCs.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the date of this letter. At that time, we will send copies of this report to the appropriate congressional committees; the Secretaries of Defense, Energy, and Veterans Affairs; the Attorney General; the Administrator, GSA; and other interested parties. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staff have any questions, please call me at (202) 512-3841. 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 key contributors to this report are listed in appendix VI.

Jim Wells
Director, Natural Resources
and Environment

Objectives, Scope and Methodology

Objectives

We were asked to determine (1) the extent to which federal agencies used ESPCs; (2) what energy savings, financial savings, and other benefits agencies expect to achieve; (3) the extent to which actual financial savings from ESPCs cover costs; and (4) what areas, if any, require steps to protect the government's financial interests in using ESPCs.

Scope and Methodology

To satisfy these objectives, we included in our review any ESPCs that agencies undertook in fiscal years 1999 through 2003. We did not perform formal cost benefit analyses of individual ESPC projects or of ESPCs as a whole because of data limitations.

To address the data analysis component of these objectives, we first obtained basic contract data from the four federal contracting centers that assist agencies with ESPCs-the Air Force Civil Engineer Support Agency, the U.S. Army Corps of Engineers' Huntsville Center, the Naval Facilities Engineering Service Center, and (FEMP), which reflect the majority of all ESPCs undertaken during fiscal years 1999 through 2003. We did not completely assess these data for reliability; however, we reviewed the steps that the contracting centers take to ensure data reliability and determined that these steps were sufficient for our reporting purposes. We obtained more detailed contract data for the same period from the seven federal agencies in our review having the most facility floor space and the highest energy use and therefore the highest potential to use ESPCs. These agencies were the Departments of the Air Force, the Army, the Navy (including the Marine Corps), Energy, Justice, Veterans Affairs, and the General Services Administration.

Before analyzing the contract data, we combined the data from the contracting centers and the agencies into a single data set. Because some agency contract data could also be included in the contracting center data, we identified the projects that appeared to have duplicate records. We asked each agency to confirm those records that were duplicates and, using our best judgment, retained those records with the most complete information.

To address the objectives overall, we interviewed and obtained documentation from a wide range of stakeholders. From the seven agencies and four contracting centers, we talked with officials at headquarters, in regions, and at specific project sites. We also discussed the issues with officials from the Congressional Research Service; Oak Ridge

National Laboratory; Lawrence Berkeley National Laboratory; the Defense Energy Support Service Center; and the states of Maryland and Louisiana, both of which use ESPCs extensively. In addition, we talked with officials from the energy services and financial services sectors and an academic expert knowledgeable about ESPCs. We also reviewed relevant legislation, regulations, policies, and agency procedures.

We also reviewed studies by the Oak Ridge National Laboratory and the Lawrence Berkeley National Laboratory that analyzed the costs and benefits of ESPCs and compared net benefits of using ESPCs to finance energy savings improvements with the net benefits of using direct appropriations. To evaluate these studies, we interviewed some of the authors and reviewed other studies and reports that the authors had referred to and which supported some of the assumptions they used to model the net benefits. In particular, we asked the authors of the Lawrence Berkeley National Laboratory study about their support for the assumption that energy savings decay over time in the absence of monitoring and verification. They referred us to a body of literature on energy commissioning—essentially energy audits of buildings—in which there is evidence of energy savings decay. We reviewed several studies from this literature and concluded that there was sufficient evidence for savings decay to warrant inclusion of the Lawrence Berkeley National Laboratory study results, with the proper caveat that we could not definitively conclude on the extent of savings decay or on the extent to which decreased savings decay and other benefits from ESPC-funded projects may offset the significant savings achieved from using upfront funding that we found previously in six case studies.

To better understand specific benefits, problems and suggested improvements for ESPCs as well as evaluate whether savings were covering costs, we interviewed and obtained appropriate documentation from officials who either negotiated and/or currently manage specific ESPC projects at 15 geographically dispersed locations. We judgmentally selected these officials from lists of knowledgeable officials provided to us by the ESPC program managers of each agency. We also discussed these issues in general for an additional 10 projects with the officials who manage DOE's departmental ESPCs. Furthermore, we reviewed 13 audit reports conducted by the Army Audit Agency or Air Force Audit Agency and discussed the results with auditors involved in the reviews; reviewed a report by a consultant hired by VA to assess that agency's use of ESPCs; reviewed relevant GAO reports and consulted with subject matter experts

at GAO; and reviewed other reports and information on ESPCs identified by searching the literature.

We conducted our work from January 2004 through May 2005 in accordance with generally accepted government auditing standards.

Comments from the Department of Defense

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

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

JUN 02 2005

Mr. Jim Wells
Director, Natural Resources and Environment
U.S. Government Accountability Office
441 G Street NW
Washington, D.C. 20548

This is the Department of Defense (DoD) response to the GAO Draft Report GAO-05-340, 'ENERGY SAVINGS: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests,' (GAO Code 360425), dated 4 May 2005.

The Department commends the effort your team expended to conduct a comprehensive review of the Energy Savings Performance Contract (ESPC) program. We particularly appreciate the constant communication with our staff throughout the entire effort. The findings and recommendations of this draft final report are a reflection of a very good understanding and thorough analysis of all facets of the ESPC program.

We concur with your assessment that this program offers value beyond simple energy savings. We also agree with your recommendations for improvement and are grateful that your report articulated many of the actions currently underway. Based on input from my staff, I have concluded that this report is fair and balanced. As your team pointed out, while these complicated contracts are structured to ensure that savings will exceed costs, we recognize that our measurement and verification procedures must be improved to confirm estimates with actual data.

We recognize the importance of proper and consistent execution of these complicated contracts throughout the entire Federal government. It is our intention to implement immediately the recommendations offered, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP). We are confident that FEMP's leadership in this area will continue to build upon lessons learned and allow us to implement additional improvements to this essential contract vehicle that accounts for over half of our Department's energy reductions.

Our comments are attached.

Philip W. Grone
Deputy Under Secretary of Defense
(Installations and Environment)

Enclosures

GAO DRAFT REPORT DATED MAY 4, 2005
GAO-05-340 (GAO CODE 360425)

"ENGERY SAVINGS: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests"

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense compile information on key contract term-such as interest rates and mark-ups for energy-efficiency equipment-for each ESPC and as a key part of best practices make information accessible to agency officials in negotiating subsequent ESPCs. (p. 55/GAO Draft Report)

DOD RESPONSE: DoD concurs and plans to implement immediately this recommendation, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP).

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense track actual costs, verified savings, and any changes to ESPC projects that may affect these cost and savings. (p. 55/GAO Draft Report)

DOD RESPONSE: DoD concurs and plans to implement immediately this recommendation, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP).

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense ensure that the agency officials responsible for ESPC decision-making use appropriate expertise when they undertake an ESPC. If the officials do not have sufficient expertise themselves, they should be required to obtain it from such independent sources as a centralized pool within the agency; the contracting centers of Air Force, Army Corps Energy, and Navy; or private parties. The cost in acquiring this expertise should be considered in deciding whether to use ESPC. (p. 55/GAO Draft Report)

DOD RESPONSE: DoD concurs and plans to implement immediately this recommendation, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP).

RECOMMENDATION 4: The GAO recommended that the Secretary of Defense require inspectors general or other audit offices conduct audits of ESPC projects to ensure the projects are achieving their expected results. (p. 56/GAO Draft Report)

Attachment 1
Page 1 of 2

DOD RESPONSE: DoD concurs and plans to implement immediately this recommendation, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP).

RECOMMENDATION 5: The GAO recommended that the Secretary of Defense require contracting centers to work with the agencies that use them to ensure that the contracting centers have the information and expertise needed to effectively develop and monitor their ESPCs. (p. 56/GAO Draft Report)

DOD RESPONSE: DoD concurs and plans to implement immediately this recommendation, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP).

RECOMMENDATION 6: The GAO recommended that the Secretary of Defense to require contracting centers to continue and expand their ongoing efforts regarding competition, including taking steps such as re-competing the super ESPCs as soon as possible and then more regularly. (p. 56/GAO Draft Report)

DOD RESPONSE: DoD concurs and plans to implement immediately this recommendation, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by the Department of Energy (DoE), Federal Energy Management Program (FEMP).

Attachment
Page 2 of 2

Comments from the Department of Energy

Department of Energy
Washington, DC 20585

June 3, 2005

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

RE: The Department of Energy's (DOE) Comments on the Draft Report entitled *Energy Savings: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests* (GAO-05-340)

Dear Mr. Wells:

Enclosed are DOE's comments on the Draft Report entitled *Energy Savings: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests* (GAO-05-340). The Department appreciates the thoroughness of GAO's review of the Energy Savings Performance Contracting (ESPC) matters addressed in the Draft Report. Moreover, the Department intends to ensure that future DOE ESPC program improvements reflect GAO recommendations whenever possible.

Please contact Ms. Dreda Perry of my staff regarding any questions you may have. Ms. Perry can be reached at 202-586-0561 or dreda.perry@ee.doe.gov.

Sincerely,

David K. Garman
Assistant Secretary
Energy Efficiency and Renewable Energy

Enclosure

Printed with soy ink on recycled paper

DEPARTMENT OF ENERGY COMMENTS ON DRAFT GAO REPORT,

ENERGY SAVINGS: PERFORMANCE CONTRACTS OFFER BENEFITS, BUT VIGILANCE IS NEEDED TO PROTECT GOVERNMENT INTERESTS

(GAO-05-340, MAY 2005)

The Department of Energy (DOE) commends the Government Accountability Office (GAO) for its balanced and thoughtful review of the Energy Savings Performance Contracting (ESPC) Program. DOE is pleased that GAO has revised certain positions expressed in its previous report concerning ESPCs (GAO-05-55), and generally concurs with the recommendations of the May 2005 draft GAO report (GAO-05-340), as follows:

MATTER FOR CONGRESSIONAL CONSIDERATION

Recommendation that Congress consider revising the relevant statute to more clearly define the components of costs that must be covered by savings.

DOE anticipates that its "Report to Congress on Energy Savings Performance Contracts," required by section 1090 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, which is currently in Departmental concurrences, will support GAO's first recommendation for clarification of agency authority to make lump sum payments using funds other than current year utility savings. Express legislative authority allowing avoided-project cost savings to be applied as pre-performance-period payments would permit agencies to implement more comprehensive, higher-value ESPCs and enhance facility energy security.

RECOMMENDATIONS FOR EXECUTIVE ACTION

DOE generally agrees with all of GAO's recommendations suggesting Executive action as described in the body of the report (pp. 55-56), but the portrayal on the "Highlights" page that "GAO further recommends that DOE do more to facilitate oversight of ESPCs" provides an excellent segue to our major comments regarding these recommendations. We are concerned that DOE's Federal Energy Management Program (FEMP) cannot "mind the ESPC store" throughout the Federal Government without having clear authority for oversight of agency contracting. Full agency participation in the DOE-chaired Federal ESPC Steering Committee and implementing all executive actions approved by that body would provide greater ESPC oversight ability to DOE.

RECOMMENDATIONS FOR PROGRAMMATIC ACTIONS

1. Collect and use ESPC-related data more effectively

DOE concurs with GAO's recommendation regarding the collection and use of ESPC-related data so that procurement history and experience can improve the agency negotiating position in subsequent ESPCs. FEMP has already developed such tools for pricing and financing reasonableness reviews, and recommends that all ESPC contracting centers and agencies share their data and ensure that Government tools are as robust as they can be. FEMP similarly recommends the collection and sharing of performance-period data to enable Government-wide verification of guaranteed energy cost savings through the tracking of ESPC contractor payments and various categories of cost savings.

2. Ensure that agency officials responsible for ESPC decision making use appropriate expertise when undertaking an ESPC.

DOE concurs with the recommendation that agencies be required to use appropriate expertise when developing and implementing an ESPC. FEMP has, in fact, already mandated that all projects ordered under the DOE Super ESPC contracts be supported by experienced ESPC project facilitators, and FEMP will only delegate ordering authority to ESPC centers of expertise committed to maintaining a staff of qualified contracting officers. Because of the unique contracting structure of these procurements, the success of the ESPC program requires a few experienced contracting officers dedicated to the administration of ESPCs, rather than expecting all contracting officers who are immersed in traditional Federal procurement to competently handle an occasional ESPC award. For the same reason, any available agency facility engineer is not an acceptable substitute for an experienced ESPC project facilitator. The Federal ESPC Steering Committee is establishing a requirement that experienced ESPC project facilitators and qualified ESPC contracting officers be assigned to every ESPC project.

3. Require, as appropriate and in line with available resources, that inspectors general or other audit offices conduct audits of ESPC projects.

DOE concurs with GAO's recommendation that the Secretaries of Defense, Energy, and Veterans Affairs, the Attorney General, and the Administrator of the General Services Administration require appropriate audits to ensure that their agencies' ESPC projects achieve their expected results.

4. Require contracting centers to work with agencies to (a) ensure the contracting centers have the information and expertise needed to effectively develop and monitor their ESPCs, and (b) continue and expand their ongoing efforts regarding competition.

DOE concurs with GAO's recommendation that the ESPC contracting centers be required to work with customer agencies to ensure that they have the assistance and expertise needed to appropriately address ESPC development, monitoring, and competitiveness issues. DOE believes that all agencies should make full use of the experienced ESPC project facilitators and contracting officers who are dedicated to the ESPC program and provided by the contracting centers.

5. Recommend that the Secretary of Energy collect more extensive information on agencies' ESPCs.

DOE concurs with GAO's recommendation for Government-wide ESPC data collection to strengthen the annual report to Congress. DOE also concurs with the recommendation to compare projects funded by ESPCs with projects funded up front, and in fact has done so in the past with limited samples.

Although DOE generally concurs with the recommendations of this draft GAO report, the following additional comments are provided.

2

ADDITIONAL COMMENTS

1. "Even within DOE, for example, the General Counsel's office expressed an opinion at variance with the FEMP Guide." (pp. 35-36)

GAO suggests that a DOE General Counsel opinion from August 2000 conflicts with FEMP guidelines and practices regarding ESPC pre-performance-period payments ("P4s"), buyouts, or buydowns. GAO's statement is not accurate.

DOE General Counsel's opinion of August 18, 2000, requires that any prepayment such as a buyout, buydown, or P4 can only be applied to an ESPC if that payment does not exceed the amount of energy cost savings obtained in the same contract year. Nothing in FEMP's "Practical Guide to Savings and Payments in Super ESPC Delivery Orders" dated January 2003 ("the FEMP Guide") is inconsistent with the General Counsel's legal opinion. The FEMP Guide specifically emphasizes that any payment (including prepayments) made to an ESPC contractor must not exceed the amount of energy cost savings realized during the contract year.[1]

We recognize that the FEMP Guide also indicates that such payments "may not exceed the amount planned and budgeted for the avoided project" (FEMP Guide, p. 8). GAO, however, has taken this reference out of context. This latter provision is in addition to the requirement that the payment not exceed the energy cost savings. In order to avoid future confusion, we will review the FEMP Guide to ensure that this point is consistent throughout.

2. Competition-related comments primarily related to the small number of relatively large energy services contractors (ESCOs) that are active in the program. (pp. 45-46)

As directed by the Energy Policy Act's 1992 amendment to the ESPC statute, DOE FEMP developed ESPC implementing regulations (10 CFR 436 Subpart B) that were adopted in 1995. As an initial step in providing competitive contractors for ESPC projects, the regulations established a list of qualified ESCOs who currently number more than 100. Originally DOE FEMP developed a model ESPC solicitation for agency sites to use in competitively selecting an ESCO from the qualified list and implementing their ESPCs. Agencies did not use this process to develop ESPC projects, however, because the site-specific method was too labor- and time-intensive.

In large part because of the unworkable nature of site-specific ESCO solicitations, ESPC authority went essentially unused until FY 1998, when DOE FEMP applied the indefinite-delivery, indefinite-quantity (IDIQ) contract form to ESPCs. The IDIQ method streamlined the process by competitively selecting ESCOs and awarding them umbrella contracts for geographic areas. Agencies could then "order" projects from these preselected, qualified ESCOs. The Army and Air Force did the same, as did the Navy/Marines for various overseas regions. Since

[1] A highlighted box on page 9 of the FEMP Guide emphasizes that contractor payments may not exceed annual energy cost savings:

Payments to ESPC contractors must satisfy these criteria:

- Cost savings must exceed payments. Guaranteed cost savings to the Federal customer must exceed payments to the contractor in every year of the delivery order term.

they became available, 90 percent of the ESPC business has been done under these umbrella contracts, and in recent years nearly all of it has been.

Although DOE's policy is to re-compete IDIQ contracts every five years, this could not be done for the DOE Super ESPCs in FY 2003 because the program's Congressional authority lapsed at the end of the year. Re-competing the IDIQs will likely not be a prudent use of Government or private-sector resources until ESPC is permanently reauthorized. Private-sector firms spend hundreds of thousands of dollars responding to RFPs of this type, and cannot be expected to participate in a competitive solicitation so long as the authority is uncertain. Likewise, significant resources are expended by the Federal Government to implement a solicitation the size of a Super ESPC.

In anticipation of permanent reauthorization, the DOE Super ESPCs will be re-competed in 2007, which will open the field to the participation of additional qualified service providers. Small-business subcontracting plans and goals in the new IDIQs will be considered by DOE. DOE will explore opportunities for small businesses in its multiple awards under the Super ESPC including teaming and pre-qualification of subcontractors.

3. "Some agency officials linked a perceived lack of competition among energy service companies with high markups and prices for other components of ESPCs and poor services—especially after the contract is signed." (p. 46)

ESCOs who leverage their services from existing regional offices (large ESCOs) tend to put relatively more of their costs into markup and less into direct implementation cost than ESCOs who establish and dissolve project offices as needed (small ESCOs). Government ESPC price reasonableness reviews have evolved through experience to focus more on the all-in price (including markup) for ECMs and services, using procurement history from both ESPC and directly funded projects as the comparative basis. Markups are an artifact of the particular ESCO's business model, being essentially an intermediate accounting convention. Agencies wanting to use competition to verify price reasonableness can require their ESCOs to compete ECMs to multiple construction subcontractors.

4. "We were unable in the scope of this work to determine the extent, if any, to which a lack of competition, rather than other factors, has caused finance rates for ESPCs to be higher than for other methods of financing energy-efficiency improvements. However, due to the large number of questions raised about this by agencies, we believe this question should be explored in more depth." (p. 45)

As the GAO draft report recognizes, DOE has already implemented modifications to its Super ESPC prime contracts that require ESCOs to source their financing through a competitive process that is transparent to the Government.

Because improved financing is the most important single action that can be taken to make ESPCs a better financial deal for the Government, however, DOE agrees that additional actions to reduce financing costs should be considered. Under existing law, it is the ESCO's responsibility to obtain the needed financing. The Government has no privity of contract with the financing entities. In order for the Government to be more engaged in the financing transactions, additional authority is needed. For example, since the Federal Government is able to access lower-cost sources of capital than a private-sector ESCO, ESPC authority could be revised to

allow the issuance of separate contracts for (1) ESCO services and energy conservation measures and the attendant performance guarantees, and (2) project financing. Essentially all State and local-Government ESPCs are implemented with separate agreements for the energy services and financing in order to achieve better financing rates. This structural issue is likely to be addressed in DOE's upcoming report to Congress mentioned on page 1, which was required by the legislation providing for the program's reauthorization.

5. "GAO further recommends that DOE do more to facilitate oversight of ESPCs." (Highlights page)

DOE's modifications to the Super ESPCs made effective in December 2004 address many of the issues identified in the GAO report. Notable changes to the contracts include the following:

- Reducing financing costs
  - ESCOs are required to solicit multiple competitive financing offers from the commercial markets.
  - ESCOs are required to use the Government-prescribed Investor Deal Summary to solicit financing offers.
  - All financing offers must be submitted in the form of the Government-prescribed Standard Financing Offer. The selected offer must be included in the final proposal.
  - ESCOs are required to certify to the Government that their acquisition of financing was undertaken in accord with best business practice.
- Price reasonableness determination
  - ESCOs are required to place pricing information in final proposals in accordance with the Government's pricing placement guidance.
- Measurement and Verification (M&V)
  - M&V plans, post-installation reports, and annual reports must conform to Government-specified outlines.
  - Refinements were made to operations and maintenance, repair and replacement, and commissioning provisions.

For the past two years under the auspices of the Federal ESPC Steering Committee, FEMP has established and directed multi-disciplinary technical working groups in areas such as M&V standardization, price reasonableness review, financing cost reduction, standardization of commissioning within ESPC to apply the lessons learned, and best practices as part of its ongoing ESPC quality assurance and improvement activity. Many of the points raised by GAO have already been identified and activities to address them completed, underway, or recognized as needing deeper improvements. FEMP intends to ensure that the DOE Super ESPC program improvements implemented going forward consider and reflect GAO's recommendations.

5

Comments from the Department of Veterans Affairs

THE DEPUTY SECRETARY OF VETERANS AFFAIRS
WASHINGTON

June 6, 2005

Mr. Jim Wells
Director
Natural Resources and Environment
U. S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Wells:

The Department of Veterans Affairs (VA) has reviewed your draft report ***ENERGY SAVINGS: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests***, (GAO-05-340) and concurs with your conclusions and recommendations. The enclosure provides general comments as well as comments to your recommendations. VA appreciates the opportunity to review your draft report.

Sincerely yours,

Gordon H. Mansfield

Enclosure

Enclosure

The Department of Veterans Affairs (VA) Comments on the Government Accountability Office's (GAO) Draft Report:
ENERGY SAVINGS: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests
(GAO-05-340)

General Comments – GAO conducted a comprehensive analysis of energy savings performance contracts (ESPC) into which agencies, including Department of Defense, Department of Energy, General Services Administration, and Veterans Affairs (VA) have entered over the past few years. GAO's assessment, based on costs and benefits, appears to be fair. Many of GAO's findings reflect conclusions about ESPCs that VA had arrived at previously. For example, VA had determined that due to lack of competition, using the ESPC as currently structured was not in the Department's best interest. As a participant on the Federal ESPC Steering Committee, VA brought the ESPC shortcomings to the steering committee's attention. The steering committee's various working groups are addressing many of the issues raised in GAO's report.

To better ensure that federal agencies undertake only those ESPCs having the greatest likelihood that savings will cover costs and that the agencies negotiate the best possible contract terms and monitor the contracts properly, we are making recommendations to the heads of these agencies included in our review, namely the Secretaries of Defense, Energy, Justice, and Veterans Affairs, and the Administrator of the General Services Administration. The recommendations focus on the areas of information, expertise, and audits,

- **Collect and use ESPC-related data more effectively by (1) compiling information on key contract terms – such as interest rates and mark-ups for energy-efficiency equipment – for each ESPC and as a key part of best practices make information accessible to agency officials in negotiating subsequent ESPCs, and (2) tracking actual costs, verified savings, and any changes to ESPC projects that may affect these costs and savings.**

Concur – VA recently implemented a national energy conservation program which addresses ESPC data needs as follows:

1) VA will more effectively track the items and conditions under which it has entered into ESPCs; and

2) VA will more effectively collect and track ESPC energy use and cost information in order to develop practices that will yield the best agreements and results in future projects for the agency.

1

Enclosure

The Department of Veterans Affairs (VA) Comments on the Government Accountability Office's (GAO) Draft Report:
ENERGY SAVINGS: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests
(GAO-05-340)

- **Ensure that the agency officials responsible for the ESPC decision-making use appropriate expertise when they undertake an ESPC. If the officials do not have sufficient expertise themselves, they should be required to obtain it from such independent sources as a centralized pool within the agency; the contracting centers of Air force, Army corps, Energy, and Navy; or from private parties. The costs of acquiring this expertise should be considered in deciding whether to use an ESPC.**

Concur – This is consistent with VA's contracting officers' general responsibilities. When these officials select vendors, negotiate agreements and sign contracts, they must thoroughly understand the implications to which they are committing VA.

- **Require, as appropriate and in line with available resources, that inspectors general or other audit offices conduct audits of ESPC projects to ensure the projects are achieving their expected results.**

Concur – VA's Office of Inspector General should audit VA's energy savings performance initiatives and contracts within its routine audit process.

2

Comments from the General Services Administration

GSA

GSA Administrator

June 10, 2005

Mr. Jim Wells
Director, Natural Resources and Environment
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Wells:

The General Services Administration (GSA) appreciates this opportunity to submit agency comments on the Government Accountability Office (GAO) "Draft Report to Congressional Requesters, ENERGY SAVINGS: *"Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests,"* GAO-05-340 (Draft Report). The findings and recommendations of this draft report reflect the thoroughness of the audit and high level of communication between GSA specialists and GAO auditors.

We concur with your assessment that this program offers benefits beyond simple energy savings. While the report did not identify any specific GSA Energy Savings Performance Contract (ESPC) projects not having sufficient savings to cover costs, we realize that this was only a result of a high level of due diligence by agency regional operations staff, which must be maintained and can always be improved upon. In this regard, GSA can and will improve its centralized oversight of all ESPCs awarded within the agency.

We recognize that ESPCs represent an alternative funding source, which carries with it a responsibility to execute these contracts using proper and consistent methods pursuant to Department of Energy (DoE) guidance. Therefore, it is our intention to implement the recommendations offered, in coordination with the other Federal agencies, through the Federal ESPC Steering Committee, chaired by DoE's Federal Energy Management Program (FEMP). Our comments are enclosed.

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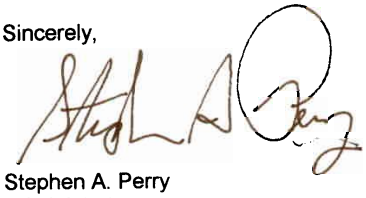
Fax: (202) 219-1243
www.gsa.gov

Thank you for the opportunity to comment on the draft report. Should you have any questions, please contact me. Staff inquiries may be directed to Mr. Sam Hunter, Public Buildings Service, at (202) 501-0353.

Sincerely,



Stephen A. Perry
Administrator

Enclosure

GAO DRAFT REPORT DATED MAY 4, 2005
GAO-05-340 (GAO CODE 360425)

"ENERGY SAVINGS: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests"

GENERAL SERVICES ADMINISTRATION
COMMENTS TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: GAO recommended that GSA compile information on key contract terms–such as interest rates and mark-ups for energy-efficiency equipment–for each ESPC and as a key part of best practices, make information accessible to agency officials in negotiating subsequent ESPCs. (p. 55/GAO Draft Report)

GSA RESPONSE: GSA concurs and plans to implement this recommendation consistent with its internal agency action plan

RECOMMENDATION 2: GAO recommended that GSA ensure that the agency officials responsible for ESPC decision-making use appropriate expertise when they undertake an ESPC. If the officials do not have sufficient expertise themselves, they should be required to obtain it from such independent sources as: (a) a centralized pool within the agency; (b) the contracting centers of Air Force, Army Corps, Energy and Navy; or (c) private parties. The cost in acquiring this expertise should be considered in deciding whether to use an ESPC. (p. 55/GAO Draft Report)

GSA RESPONSE: GSA concurs and plans to implement this recommendation consistent with its internal agency action plan.

RECOMMENDATION 3: GAO recommended that GSA require inspectors general or other audit offices to conduct audits of ESPC projects to ensure the projects are achieving their expected results. (p. 56/GAO Draft Report)

GSA RESPONSE: GSA's Office of the Inspector General (OIG) has conducted audits of GSA's use of ESPCs in the past. GSA concurs and plans to continue this practice consistent with its internal agency OIG audit schedule.

GAO Contact and Staff Acknowledgments

GAO Contact

Jim Wells, (202) 512-3841

Staff Acknowledgments

In addition to the individual named above, Dan Haas, Dennis Carroll, Randy Jones, Hugh Paquette, Frank Rusco, Karla Springer, Barbara Timmerman, and Jena Whitley made key contributions to this report. Chris Bonham, Carol Henn, Cynthia Norris, and Jena Sinkfield also contributed.

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