

# Energy Efficiency in Federal Facilities: Update on Funding and Potential Savings

## Introduction and Findings

Since the mid- 1970s, Congress and the executive branch have developed several programs to improve energy efficiency in federal facilities and operations. Between 1975 and 1991, these programs saved close to \$8 billion in energy costs according to the Department of Energy (DOE). This is about three times more than the funds invested in energy conservation measures during that time. Despite this impressive achievement, considerably greater savings still appear possible in federal facilities using commercially available, cost-effective technologies from advanced lighting systems to improvements in heating, ventilation, and air conditioning systems. <sup>1</sup>

**There is widespread agreement that commercially available technologies could profitably reduce the federal government’s \$4 billion annual building energy costs by at least 25 percent.** There are, however, a number of constraints to implementing more energy efficient practices. **One of the most challenging constraints is a shortage of funds to**

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<sup>1</sup> This paper examines energy efficiency funding and potential savings for federal facilities. There also appears to be considerable potential for savings in “mobility” energy used by federal aircraft, ships and nonhighway vehicles (see John Archibald, U.S. Department of Energy, “Federal Mobility Energy Efficiency Issue Paper, ” Mar. 15, 1994). These mobility efficiency opportunities have received far less attention than has facility efficiency, and there are fewer authorized programs to address them. While mobility energy is not the focus of this paper, many of the finding and program management issues are closely related and may be worth further attention.

**invest in efficient equipment.** A related constraint is a lack of information for program planning and budgeting about the extent of investment opportunities and about the best finding mechanisms. This paper, prepared in response to a request from the House Committee on the Budget, reviews advances made in addressing these constraints since publication of OTA's 1991 Report, *Energy Efficiency in the Federal Government: Government by Good Example?*<sup>2</sup>

OTA's 1991 Report found that while the federal government did not make full use of energy efficient technologies, the best practices formed a strong foundation for further efforts leading to a high level of efficiency and economy. While that finding still appears true, **current energy management efforts are far more intensive than in 1991, which should lead to fuller and faster implementation of efficiency measures and cost savings.** For example, **budget requests and appropriations for efficiency upgrades are continuing to increase rapidly.** Similarly, federal agencies continue to increase their use of private sector finding sources such as electric utility demand side management (DSM) programs and energy saving performance contracts (ESPCs). While there is little doubt that the current level of effort is profitable, there remains a notable lack of government-wide information to help determine the extent to which those efforts could be profitably expanded.

As noted in OTA's 1991 Report, there is no single, simple policy that would ensure the federal government's attainment of the highest level of cost-effective energy efficiency. Rather, policies to improve energy efficiency maybe best viewed as ongoing and evolutionary, as demonstrated by the long (and, to date, only partly successful) history of federal efforts. Two major policy developments have occurred since 1991: passage of the Energy Policy Act

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<sup>2</sup>U.S. Congress, Office of Technology Assessment, *Energy Efficiency in the Federal Government: Government By Good Example?* OTA-E-492 (Washington, DC: U.S. Government Printing Office, May 1991). A two-page Report Brief is attached as appendix A.

of 1992 (EPACT), which includes a subtitle devoted to federal energy management; and signing of Executive Order (EO) 12902 on March 8, 1994. Both include several significant contributions related to finding and identification of energy saving opportunities. They also address a number of other key constraints not reviewed in this paper, such as adequate trained staffing to ensure productive use of available funds.

**While the authorities and direction presented by EPACT and EO 12902 (see tables 1 and 2) appear promising, it is too early to tell how successful they will be.**

**There are some substantial delays in performing critical activities required by law for assessing and promoting alternate funding methods and surveying potential savings.**

Completion of these activities and implementation of their results will be important to determining the extent to which current efficiency efforts can be profitably expanded. The activities include the following:

- . a “Federal Energy Efficiency Funding Study, ” required by EPACT to be submitted by April 1993; currently not anticipated before summer 1994;
- . promulgation of regulations for energy savings performance contracts, required by EPACT by April 1993; still not published for comment in the Federal Register as of mid-March 1994;
- . inclusion by each agency of energy efficiency finding as a line item in the presidential budget submittal, required by EPACT; included for some (including the largest energy users), but not all, agencies in the fiscal year 1995 request;
- . DOE’s annual report to Congress on federal energy management, required by National Energy Conservation Policy Act (Sec. 548) by April 2 of each year; delivered later and later over the past few years. For example, the fiscal year 1986 report was delivered in June 1987, and the fiscal year 1986 report was delivered in October 1990. As of late March 1994, the fiscal year 1992 report (which ended in

September 1992) remained under review within DOE. Thus, the fiscal year 1992 report may be a year or more late.

- . a survey of potential savings, required by EPACT with no statutory deadline; tentative completion date of April 1994 according to DOE's implementation plan.

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### **Table 1--Provisions of Executive Order 12902**

- Establishes facility energy consumption reduction goals for 2005
- Directs agencies to conduct energy surveys and audits, and to prioritize implementation
- Directs agencies to reduce facility petroleum use
- Provides energy management guidelines for new buildings
- Directs agencies to establish "showcase" facilities
- Directs DOE to report on life cycle analysis issues
- Directs effort promoting innovative financing mechanisms
- Requires elimination of unnecessary barriers to innovative financing mechanisms
- Directs agencies to procure "best practice" technologies
- Promotes energy management incentives for agencies and staff

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### **Table 2-- Federal Energy Management Provisions of EPACT**

- Establishes building energy consumption reduction goals for 2000
- Requires implementation of cost-effective energy efficiency measures by 2005
- Directs agencies to conduct energy surveys and audits, and to prioritize implementation
- Requires President's budget submittal to include each agency's request for energy and energy management costs
- Establishes Federal Energy Efficiency Fund
- Directs efforts promoting innovative financing mechanisms
- Promotes energy management incentives for agencies and staff
- Establishes new technology demonstration program
- Requires promulgation of rules for Energy Savings Performance Contracts
- Requires Federal Energy Efficiency Funding Study
- Establishes intergovernmental energy management planning and coordination effort
- Establishes energy manager program for federal facilities
- Directs development of methods to accurately assess facility energy consumption
- Directs program to encourage procurement of energy efficient products