United States Government **Department of Energy**

Memorandum

DATE: November 24, 2008

FROM: Richard G. Kidd, IV
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Office of Energy Efficiency and Renewable Energy

SUBJECT: Response to Inquiry Regarding Efforts to Green the Federal Government

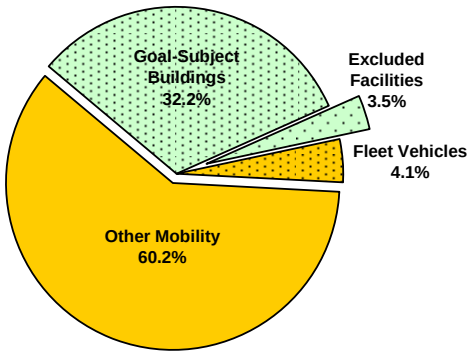
TO: Department of Energy Transition Team

Executive Summary

The Department of Energy recognizes that the concept of "greening" the Federal Government encompasses comprehensive sustainable practices beyond the efficient use of energy and expanded use of renewable energy. However, energy efficiency and renewable energy are foundational elements for reducing the Government's carbon footprint. In this regard, FEMP reduces the cost and environmental impact of the Government by advancing energy efficiency and water efficiency, promoting the use of renewable energy, and managing utility costs through savings-financed contracts, technical assistance, and outreach campaigns. FEMP is also the coordinating body for Government-wide energy policy implementation and reporting.

Context

As the nation's largest energy consumer, the Federal Government has a responsibility to lead the Nation in becoming a cleaner, more efficient energy consumer. Last year, the Government used 1.1 quadrillion Btu of site-delivered energy (1.6% of Nation's energy use) at a cost of $17.4 billion (0.6 % of the Government's total expenditures). Approximately 40% of this energy use is subject to statutory and Executive Order goals and requirements. The remaining energy is primarily used for aircraft, ships, and other tactical vehicles.



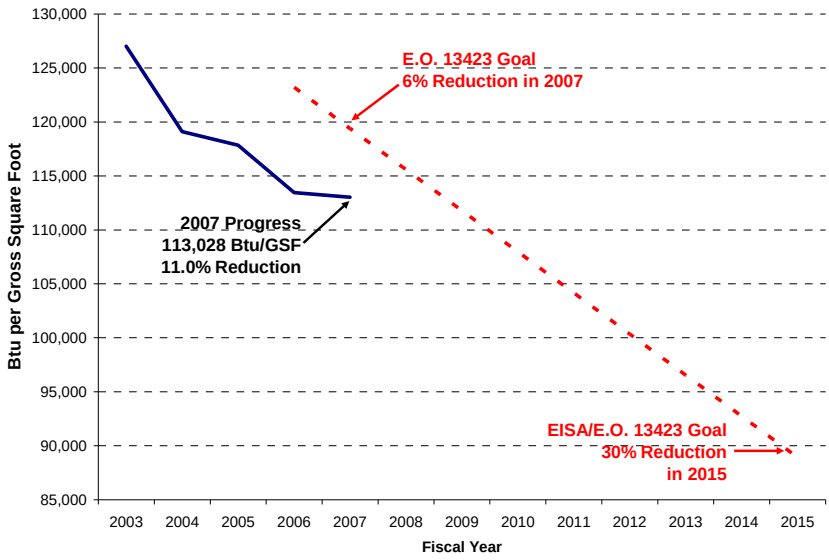
Authorities and Goals

The key statutory authority governing Federal energy management is the National Energy Conservation Policy Act (NECPA) which has been amended in subsequent years by the Energy Policy Acts of 1992 and 2005 (EPACT '92 and EPACT '05) and most recently by the Energy Independence and Security Act of 2007 (EISA). In addition, Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (E.O. 13423) reinforces and complements the statute with additional requirements. The major goals contained in these authorities include:

- Reducing energy intensity (Btu/square foot) by 30% in 2015 compared to 2003 (E.O. 13423 & EISA);
- Using renewable electric energy equivalent to 7.5% of total electricity use by 2013 (EPACT ’05), at least half of which must be from new sources developed after January 1, 1999 (E.O. 13423);
- Reducing water intensity by 16% by 2015 compared to 2007 (E.O. 13423);
- Ensuring that all new Federal buildings are designed to be 30% more efficient than relevant code (EPACT ’05);
- Separately metering all appropriate buildings for electricity use by 2012 (EPACT ’05) and for natural gas and steam use by 2016 (EISA), using advanced meters where cost-effective;
- Reduce petroleum use in covered vehicle fleets by 20% in 2015 compared to 2005 (E.O. 13423 & EISA);
- Increase use of alternative fuels in covered vehicle fleets by 10% per year (E.O. 13423 & EISA)

Results

With FEMP’s help the Government has had significant success in meeting its goals, reducing its energy intensity by 11% in 2007 compared to 2003 through efficiency improvements and renewable energy purchases, exceeding the 6% goal for that year. The Government also used renewable electricity equivalent to 4.9% of its total electricity use, surpassing the 3% goal for 2007. More than half of this renewable energy was from new sources. Petroleum in covered fleet vehicles was reduced by 3.9% in 2007, narrowly missing the goal of 4% for the year.



FEMP Strategy and Approach

FEMP facilitates the Federal Government’s implementation of sound, cost effective energy management and investment practices in order to enhance the nation’s energy security and environmental stewardship. FEMP does this by focusing on the needs of its Federal customers, delivering an array of products grouped under three service areas:

- project transaction services,
- applied technology services, and
- decision support services.

Project Transaction Services: One of FEMP's key program strategies is to leverage limited appropriations for efficiency improvements through savings-financed approaches like energy savings performance contracts (ESPCs), utility energy service contracts (UESCs), power purchase agreements (PPAs), and miscellaneous incentive programs. FEMP estimates that project investment of more than $1 billion each year will be required to meet the 30% energy intensity reduction goal for 2015. Appropriations will likely cover less than a third of this investment. FEMP's indefinite-delivery, indefinite-quantity (IDIQ) ESPC contracts allow agencies to tap into private sector energy service companies that pay up-front investment and finance the work over time through the reduced utility costs. To-date, almost 200 of these projects have been awarded under FEMP IDIQs, implementing improvements valued at $1.25 billion that are guaranteed to reduce utility costs by almost $3.1 billion over the life of the projects. These projects are saving 10.2 trillion Btu each year, equivalent to the energy use of 111,000 typical American households. *Since 2002, each dollar of FEMP's budget for this activity resulted in $18 of efficiency improvements and $46 dollars in guaranteed energy cost savings over project life cycles.*

FEMP's utility program provides Federal agencies with the guidance, training, and direct technical assistance needed to implement UESCs in a responsible and cost effective manner. FEMP's Federal Utility Partnership Working Group facilitates the establishment of long term public private partnerships between Federal agencies and their local utility companies to implement cost-effective energy efficiency, water conservation, and renewable projects.

Applied Technology Services: FEMP helps Federal agencies create and implement sustainable design principles, operating strategies, and maintenance practices that incorporate energy efficiency, renewable energy, and water-conservation technologies. FEMP services in this area include:

- renewable energy project development,
- energy audits,
- operations and maintenance assessments,
- laboratory design protocols,
- new technology reports,
- advanced metering guidance,
- guidance for purchasing energy-efficient products, and
- vehicle fleet management

Renewable energy from solar, wind, biomass, and geothermal sources can offset Federal energy consumption for heating, cooling, and electricity. FEMP assists Federal agencies in developing and implementing these clean, secure energy resources to meet energy management regulations and goals. FEMP is currently partnering with the Department of Defense (DOD) on its Net-Zero Bases initiative, as well as bringing to bear the resources of other EERE programs, especially the Wind and Solar Programs, to execute renewable projects on-site at Federal agencies.

FEMP supports the purchase and use of energy-efficient products by providing energy

efficiency requirements, guidance, and cost calculators that help Federal agencies offset energy consumption costs through adoption of these products and emerging technologies.

FEMP provides guidance and assistance on implementing and managing energy-efficient and alternative-fuel vehicle fleets. This includes helping Federal agencies meet new fleet management mandates, such as recent requirements for agencies to reduce petroleum consumption by 2% per year through fiscal year (FY) 2015 relative to a FY 2005 baseline and to increase alternative fuel use by 10% per year relative to the previous year. FEMP reviews annual EPACT Section 701 waiver requests and determines whether or not vehicle waivers are warranted. Agencies submit vehicle location information in their waiver requests which is used by FEMP to encourage alternative fuel infrastructure development. FEMP works with DOE sites and other Federal agencies to develop petroleum reduction strategic plans.

Decision Support Services: One of FEMP's key statutory requirements is to collect agency energy data and report annually on the Federal Government's progress in meeting the mandated goals in the *Annual Report to Congress on Federal Government Energy Management and Conservation Programs* and the *Annual Federal Fleet Compliance Report*. In support of this effort, FEMP prepares reporting guidance for agencies each year, reflecting changes in goals and requirements as appropriate. FEMP is also supporting several rulemaking efforts at this time, implementing provisions of EPACT '05 and EISA to revise Federal new building standards to reduce and eliminate fossil fuel-generated energy use of new buildings by 2030, requiring application of sustainable design principles, and use of cost-effective solar water heating.

FEMP also chairs the Interagency Energy Management Task Force, convening meetings every other month to provide in-depth analysis and recommendations concerning current and pending legislation, technical issues, and coordinated implementation of Federal activities. The Task Force also serves as a forum for sharing lessons learned among different agencies. Working groups reporting to the Task Force are convened to resolve specific technical or programmatic issues, to develop new initiatives, and to address legislative requirements.

Federal agencies learn to implement energy-saving strategies, gain recognition for outstanding achievements, and keep current on the government's progress in meeting energy management goals through FEMP training, services, and outreach activities. Programs include:

- *FEMP Focus* newsletter,
- FEMP Web site,
- "You Have the Power" awareness campaign,
- Training and events like the annual GovEnergy conference, and
- Federal Energy and Water Management Awards and the Presidential Awards for Leadership in Federal Energy Management, which have honored more than 1,000 Federal employees for outstanding initiative, perseverance, and creativity.

Annotated List of Appendices

Appendix 1 – Federal Energy Management Program Overview – Leadership by Example with Smart Energy Management
This document provides an overview of how the Department of Energy's Federal Energy Management Program (FEMP) helps the Federal government reduce cost and environmental impact by advancing energy efficiency and water conservation, promoting the use of distributed and renewable energy, improving utility management decisions at Federal sites, and helping Federal agencies meet fleet management and petroleum reduction requirements.

Appendix 2 – Executive Order 13423 – Strengthening Federal Environmental, Energy, and Transportation Management
Executive Order (E.O. 13423), signed in January 2007, directs Federal agencies to reduce energy intensity and greenhouse gas emissions, substantially increase use and efficiency of renewable energy technologies, adopt sustainable design practices, and reduce petroleum use in Federal fleets.

Appendix 3 – High Performance and Sustainable Buildings Guidance (DRAFT)
This guidance was developed to assist agencies in meeting the high performance and sustainable buildings goals of E.O. 13423 which states that the head of each agency shall ensure that new construction and major renovations of agency buildings comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings,* and that 15 percent of the existing Federal capital asset building inventory of the agency as of the end of fiscal year 2015 incorporates the sustainable practices in the *Guiding Principles*.

Appendix 4 – Federal Energy Use and Performance (FY 2007) Presentation
This presentation provides an overview of the Federal Government's energy footprint, goals and requirements, facility energy use, renewable energy use, water consumption, investment in facility efficiency improvements and vehicle fleet performance.

Appendix 5 – Annual Report to Congress on Federal Government Energy Management and Conservation Programs, FY 2007 (DRAFT)
This report provides information on energy consumption in Federal buildings, operations, and vehicles, and documents the activities conducted by Federal agencies to meet various goals and requirements.

Appendix 6 – Draft Report on Federal Fleet Compliance with EPACT and Executive Order 13423 for FY 2007 (DRAFT)
This report summarizes the Federal Government's FY 2007 fleet performance towards meeting the requirements of the Energy Policy Act (EPACT) of 1992, EPACT of 2005, and E.O. 13423.