

**PROSPECTUS - ALTERATION  
ENERGY AND WATER RETROFIT AND CONSERVATION MEASURES PROGRAM  
VARIOUS BUILDINGS**

Prospectus Number: PEW-0001-MU13  
Congressional Districts: Multiple

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**Program Summary**

GSA proposes the implementation of energy and water retrofit and conservation measures, as well as high performance energy projects, in Government-owned buildings during fiscal year 2013.

The Energy and Water Conservation Measures Program is designed to reduce on-site energy consumption through building alteration projects or retrofits of existing buildings systems. These projects are an important part of GSA's approach to reducing energy consumption in the existing inventory to reach mandated percentage reduction goals through 2015.

Projects in Federal buildings throughout the country are currently being identified through surveys and studies. The projects to be funded will have positive savings-to-investment ratios, will provide reasonable payback periods that reflect GSA's priority of being a green proving ground of next generation technologies, and may generate rebates and saving from utility companies and incentives from grid operators. Projects will vary in size, by location, and by delivery method.

This prospectus requests authority to fund energy and water retrofit work, geothermal and other High Performance Green Building retrofit work, as well as design/construction work for new facilities that incorporate these technologies. The authority requested in this prospectus is for a diverse set of design and retrofit projects with engineering solutions to reduce energy or water consumption and/or costs.

**Justification**

The Energy Policy Act of 2005 (Public Law 109-58) required a 2 percent energy usage reduction as measured in BTU/GSF per year from 2006 through 2015 over a 2003 baseline. Guidance issued by the Department of Energy pursuant to this requirement states that savings anticipated from advanced metering can range from 2 to 45 percent annually when used in combination with continuous commissioning efforts. Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management concerning energy consumption reduction, was incorporated into law as the Energy Independence and Security Act of 2007 (EISA). Both increased the energy reduction mandates to 3 percent per year, and the Executive Order also established a water reduction mandate of 2 percent per year based on a 2007 baseline as measured in gallons/gsf.

By the year 2015, all Federal agencies are directed to reduce overall energy use in buildings they operate by 30 percent from 2003 levels and reduce overall water use by 16 percent from 2007

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levels. Increased energy and water efficiency in buildings and operations will require capital investment for changes and modifications to physical systems which consume energy and water, as well as other high performance green building initiatives and infrastructure designs and retrofits.

In addition, EISA included provisions that exceed the requirements of the Energy Policy Act of 2005. One such long-term requirement is to eliminate fossil fuel-generated energy consumption in new and renovated Federal buildings by FY 2030 by achieving targeted reductions beginning with projects designed in FY 2010. Other shorter-term measures include increasing the use of solar hot water heating (to 30 percent); installation of advanced meters for steam and gas (previously only electricity was covered); and broader application of energy efficiency in all major renovations.

Approval of this FY 2013 request will enable GSA to continue to provide leadership in energy/water conservation and efficiency to both the public and private sectors.

**Authorization Requested.....\$15,000,000**

Projects will vary in size by location and by delivery method. Typical projects include the following:

- Upgrading heating, ventilating, and air-conditioning (HVAC) systems with new, high efficiency systems including the installation of energy management control systems.
- Altering constant volume air distribution systems to variable air flow systems by the addition of variable air flow boxes, fan volume control dampers, and related climatic controls.
- Installing building automation control systems, such as night setback thermostats and time clocks, to control HVAC systems.
- Installing automatic occupancy light controls, lighting fixture modifications, and associated wiring to reduce the electrical consumption per square foot through the use of higher efficiency lamps and use of non-uniform task lighting design.
- Installing new or modifying existing temperature control systems.
- Replacing electrical motors with multi-speed or variable-speed motors.

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- Insulating roofs, pipes, HVAC duct work, and mechanical equipment.
- Installing and caulking storm windows and doors to prevent the passage of air and moisture into the building envelope.
- Providing advanced metering projects which enable building managers to better monitor and optimize energy performance.
- Providing and implementing water conservation projects.
- Providing renewable projects including photovoltaic systems, solar hot water systems, and wind turbines.
- Providing distributed generation systems.
- Drilling to install vertical and horizontal geothermal loops.
- Installing heat pumps and other types of geothermal equipment.
- Installing building insulation and seals to enhance equipment performance and reduce the size and energy consumption of geothermal and other energy-efficient equipment.
- Installing new or modifying existing green building materials.
- Installing wastewater recycling processes for use on lawns, in toilets, and for washing cars.
- Insulating roofs, pipes, HVAC duct work, and mechanical equipment.
- Installing other green building technologies such as hot water heat recycling, renewable heating systems, seasonal thermal storage systems, and solar air conditioning, green roofs, and cool roofs.

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**Certification of Need**

It has been determined that the practical solution to achieving the identified building energy and water management goals is to proceed with the energy and water retrofit and conservation work indicated above.

Submitted at Washington, DC, on February 22, 2012

Recommended: Robert A. Fred  
Commissioner, Public Buildings Service

Approved: Martha Johnson  
Administrator, General Services Administration