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

Prospectus Number: PEW-0001-MU16

FY2016 Project Summary

The General Services Administration (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 2016.

FY2016 Committee Approval and Appropriation Requested $20,000,000

Program Summary

GSA proposes the implementation of energy and water retrofit and conservation measures in Government-owned buildings during fiscal year 2016.

The Program is designed to reduce on-site energy and water consumption through building alteration projects or retrofits of existing buildings systems. These projects are an important part of GSA's approach to reach mandated percentage reduction goals through 2016.

GSA is identifying projects in federal buildings across the country through surveys and studies. These projects will have positive savings-to-investment ratios, must 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.

This prospectus requests approval for proposed projects involving 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 projects contained in this prospectus are for a diverse set of design and retrofit projects with engineering solutions to reduce energy or water consumption and/or costs.

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

- Upgrading heating, ventilation, 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 adding 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.

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- 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.
- 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 that enable building managers to better monitor and optimize energy performance.
- Providing and implementing water conservation projects.
- Providing and installing 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 wastewater recycling processes for use on lawns, in toilets, and for washing cars.
- Insulating roofs, pipes, HVAC duct work, and mechanical equipment.

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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 2016 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 2016, 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 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 2016 request will enable GSA to continue to provide leadership in energy/water conservation and efficiency to both the public and private sectors.

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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 2, 2015

Recommended: _____
Commissioner, Public Buildings Service

Approved: _____
Administrator, General Services Administration