

**PROSPECTUS – DESIGN/ALTERATION
HIGH PERFORMANCE ENERGY PROJECTS – ENERGY INDEPENDENCE
AND SECURITY ACT OF 2007
VARIOUS BUILDINGS**

Prospectus Number: PEISA-2010

Program Summary

This alteration prospectus proposes the implementation of high performance energy projects and conservation measures in Government-owned buildings during fiscal year 2010. Projects, to be accomplished 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, and may generate rebates and savings 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 geothermal and other high-performance green building retrofit work, as well as designs for new facilities that incorporate these technologies. As we formulate and develop future projects, we will incorporate these activities into our designs. As appropriate, we will use the authority in this prospectus to incorporate this requirement into previously funded and authorized activities. The authority requested in this prospectus is for a diverse set of retrofit and design projects with engineering solutions to reduce energy consumption and/or costs.

Justification:

The Energy Policy Act of 2005 (Public Law 109-58) required a 2% energy usage reduction as measured in BTU/gsf per year from 2006 through 2015 over a 2003 baseline. Additionally, this act sets a mandate to install advanced meters for electricity in all buildings by 2012. Guidance issued by the Department of Energy pursuant to this requirement states that savings anticipated from advanced metering can range from 2% to 45% annually when used in combination with continuous commissioning efforts. In regard to energy consumption reduction, Executive Order 13423 on Strengthening Environmental, Energy and Transportation Management was, incorporated into law as the Energy Independence and Security Act of 2007 (EISA). Both increased the energy reduction mandates to 3% per year, and the Executive Order also established a water reduction mandate of 2% 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 federally operated 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 specific 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. High-performance green building initiatives and infrastructure designs and retrofits will assist in reaching the targeted reductions.

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EISA also requires GSA to create at least two technology acceleration programs, for high-efficiency lighting and for geothermal space conditioning (ground source heat pump), as well as others that are cost effective.

The technology acceleration programs are broad in their application and potentially dramatic in their ability to improve the human and energy performance attributed to buildings. Lighting control systems, even with the lighting energy improvements of the past 30 years in Federal buildings, have the ability to improve the working performance conditions and reduce energy consumption by nearly 30%. The capital cost of these renovations is considerable, as most require the removal and replacement of ceiling systems, and the re-wiring of electrical distribution. The geothermal (ground source heat pump) program requires significant training both for GSA personnel and contractors. EPA and DoE have programs that can be adapted for GSA, and the cost of the program is reduced accordingly. The feasibility studies are considerable in number, and involve information about site conditions for existing buildings that are not readily available in our records, as well as vast changes in the direction to procurement and engineering professionals across the agency. GSA’s ability to design and implement this acceleration program will have great value to the rest of the Federal inventory, as the lessons learned and programmatic guidance developed will be applicable to many other building types. The up-front capital costs of geothermal systems are typically 1.5 times conventional systems, and yield a positive return on investment typically in the 10—15 year range (dependent upon geological conditions (capital) and the cost of energy (operations)).

Approval of this fiscal year 2010 request will enable GSA to continue to provide leadership in energy/water conservation and efficiency to both the public and private sectors.

Authorization Requested.....\$20,000,000

Potential projects to be accomplished in Federal buildings throughout the country are currently being identified through surveys and studies, along with potential new designs. The projects to be funded will have positive savings-to-investment ratios, will provide reasonable payback periods, and may generate rebates and savings from utility companies and incentives from grid operators.

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

- Designing new facilities to conform to EISA and to incorporate these new technologies.
- Designing new facilities to incorporate other sustainable, green building technologies, such as solar power, wind power, green roofs, and photovoltaic techniques.
- 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.

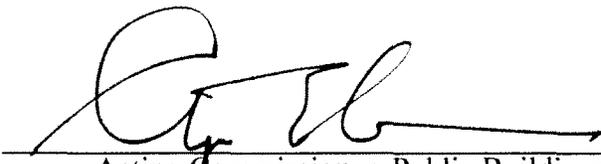
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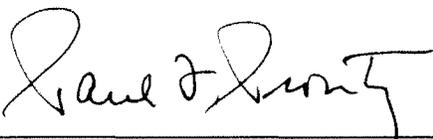
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Certification of Need:

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 work indicated above.

Submitted at Washington, DC, on June 11, 2009

Recommended: 
Acting Commissioner, Public Buildings Service

Approved: 
Acting Administrator, General Services Administration