

2. DESCRIPTION OF PROPOSALS SOUGHT

Candidate technologies suitable for demonstration on DoD installations are sought in the following topic areas:

- 1. Smart Micro-grids and Energy Storage to Increase Energy Security on DoD Installations:** Demonstration projects are sought for cost effective technologies to enable the design, development, implementation and management of micro-grids on Department of Defense (DoD) installations to meet DoD energy goals. Desired energy security improvements and cost reductions occur through increased efficiency and control of the use and management of energy generated and stored on DoD installations. Micro-grid applications may occur at the building level, installation level, or across a region of DoD activities. The DoD seeks proposals that demonstrate innovative technologies or new combinations of technologies to meet energy security goals by increasing the usage of micro-grids and energy storage.
- 2. Renewable Energy Generation on DoD Installations:** Demonstration projects are sought for cost effective technologies to increase renewable energy generation on DoD installations to meet DoD energy goals. Desired energy security increases occur through assured access to reliable sources of base load and intermittent energy generated on DoD installations. The DoD seeks proposals that demonstrate innovative but technically mature technologies to meet energy security goals by increasing the amount of renewable energy generated on installations. Technologies of interest include, but are not restricted to: Geothermal, Waste to Energy, Biomass, and Solar. Renewable energy generation projects that leverage private third party financing are of particular interest.
- 3. Advanced Component Technologies to Improve Building Energy Efficiency:** Demonstration projects are sought for cost effective component technologies to increase energy efficiency in DoD buildings to meet DoD energy goals. Energy reductions will occur through increased efficiency in both retrofit and new construction by exploiting emerging component technologies. The DoD seeks proposals that demonstrate innovative but technically mature technologies. Proposed technology demonstration should explicitly identify the need and value of conducting the demonstrations on a facility. Technologies of interest include, but are not restricted to: Heating, Ventilation and Air Conditioning, Windows, Roof Systems, Building Envelopes, Lighting, and Waste Heat Recovery (for heating or cooling). Integrated demonstrations of combinations of technologies are also of interest.
- 4. Advanced Building Energy Management and Control:** Advanced building controls play a significant role in improving building energy performance. Desired energy cost reductions occur through increased efficiency in commissioning, diagnostics, and operations. The DoD seeks proposals that demonstrate innovative technologies or combinations of technologies to meet energy goals by increasing the performance of DoD buildings.

- 5. Tools and Processes for Design, Assessment and Decision-making Associated with Energy Use and Management:** Demonstration projects are sought for cost effective technologies to enable building managers, facility managers, regional managers and/or DoD portfolio managers the ability to improve decision making related to energy usage and investments. Advances are needed both in the design of new buildings and in the identification and design of major retrofits. Desired energy cost reductions occur through improved understanding of energy usage, energy needs, and opportunities. Managers often lack adequate information and analytic tools to make optimal decisions. The DoD seeks proposals that demonstrate innovative technologies to meet energy goals by increasing the performance of decision makers at all levels of the energy usage and management system.

Mature technologies with well established operational cost and performance criteria are generally not appropriate for ESTCP. Standard commercially available approaches currently deployed in the United States will likely be too mature.

Proposed technologies and methods should have completed all proof-of-principle work. Specific DoD site(s) may be suggested in the pre-proposal but are not required to be identified until submittal of the full proposal. ESTCP supports demonstration at a scale sufficient to determine the life-cycle operational cost and performance of the technology and its potential contribution to DoD energy security.