

Environmental Security Technology Certification Program (ESTCP)

**EFFECTIVE USE OF UTILITY AND FACILITY DATA TO IMPROVE THE
MANAGEMENT, OPERATION AND MAINTENANCE OF FACILITIES**

OBJECTIVE

The Department of Defense (DoD) Installation Energy Test Bed seeks demonstration projects of innovative solutions to improve the use, access and quality of utility and facility-related data for the purposes of efficient and informed decision-making and improved management, resilience, operation and maintenance of military facilities and installations. Technologies should enhance the effectiveness of existing systems currently used by DoD and the Services for the collection and handling of utility and facility-related data or provide new capability not currently offered by incumbent systems. Technologies and solutions should improve the quality, reliability, accessibility and increase the quantity of data/information, while maintaining security and minimizing the time and cost for data system maintenance.

Technologies with the following characteristics are preferred:

- Provide complete and accurate information to decision makers with minimal manual data processing.
- Address the cybersecurity requirements for handling facility-related data, especially for solutions using cloud computing services.
- Improve energy analytics, demand management and reporting capabilities versus incumbent systems.
- Reduce the time and cost associated with installing and connecting new data points into existing systems.
- Integrate data from multiple disparate sources to create higher value information, to include data from: advanced metering infrastructure (AMI), building automation systems (BAS), real property databases, GIS, energy audit reports, etc.
- Improve the operational efficiency of facility managers and maintenance staff.

Technologies and solutions submitted under this topic will likely be enabling technologies that improve or enhance existing processes but do not directly affect energy and water consumption. For enabling technologies, measuring economic performance (payback or return on investment [ROI]) is difficult; nevertheless, proposals should include an explanation of how the technology will save costs and/or improve the energy/water performance and resilience of military installations.

Projects can be led by any entity; however, partnering or collaborating with representatives from DoD Components is highly encouraged. Staff within DoD will have easier access to existing data sources and systems to which the proposed technologies and solutions will integrate. Proposals should identify which, if any, existing data sources/systems their technology or solution will integrate or interact with and explain how they plan to access the systems to conduct the demonstration.

BACKGROUND

Since the passing of the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007, DoD has installed thousands of advanced utility meters and each DoD Component has implemented enterprise asset and utility data management systems. The intent of the utility metering sections of EPAct 2005 and EISA 2007 and the pursuant DoD activities is to improve the management of energy and water consumption, resulting in reduced waste and cost to operate our facilities and improved mission assurance. Each Service uses a different system for collecting and managing utility data, but all have encountered challenges with networking thousands of new devices (smart meters) in a reliable, efficient and cost-effective way. Although the cybersecurity approval process has recently become more established and accepted across mission spaces within DoD, there is still room for improvement in the number of installed smart meters and the reliability of the networked data stream.

As more meters come on-line, the available data is becoming a valuable resource that is currently under-utilized. To convert this resource into improved management of energy and water consumption, the data must be translated into information that is accessible, reliable and meaningful at the enterprise and installation levels. While there are examples of effective use of meter data within DoD, it is not widespread and there is great opportunity to expand and improve the use of available data to inform decision-makers and facility managers. In addition to utility meter data, other facility-related data is currently underutilized and could be integrated to provide more valuable information to the myriad stakeholders with interest in the operation and management of military facilities.

Below is a sample of data management systems, databases and tools currently installed and in use by DoD and the Services as well as recent initiatives related to this topic. This is not a comprehensive list and is intended to provide examples of the types of resources and related activities that proposers should familiarize themselves with as they develop proposals.

Utility Meter Data Management Systems

CIRCUITS: Navy utility meter data management system

MDMS: Army's meter data management system

AMRS: Air Force's meter data management system

Asset Management Systems and Databases

BUILDER™: Army's sustainment management system also used across DoD

TRIRIGA: Air Force's asset management system

RPAD: Real Property Asset Database is maintained by OSD and contains data on facilities across DoD. In addition to RPAD each Component maintains databases of real property inventories (RPI) under their control.

Other Data Sources and Programs

eProject Builder: Database of energy savings performance contract (ESPC) project data.

BAS/UCS: Building automation systems and utility control systems.

Navy Smart Grid Program: Centralized monitoring and control system that analyzes building energy and utility data to generate actionable information or automatically adjust energy usage.

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