The Utility Energy Savings Contract for Brookhaven National Laboratory

Evelyn Landini
Director, Business Management Division
Brookhaven Site Office

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Tonight’s Presentation

Answering the questions:

– What is a Utility Energy Services Contract?
– Advantages of a UESC
– Why a UESC at BNL?
– The UESC at BNL:
  • Who are the parties to the UESC?
  • What are the terms of the contract?
  • Where will the efficiencies be found?
What is a Utility Energy Services Contract (or, UESC)?

- Authorized by the Energy Policy Act of 1992, a Utility Energy Service Contract (UESC) is a limited-source contract between a Federal agency and its serving utility for energy management services, including energy and water efficiency improvements and demand-reduction services.
What is in a UESC?

• In a UESC:
  – A utility company agrees to provide a Federal agency with services and/or products that make facilities more energy efficient.
  – The Federal agency can obtain financing for the project from a utility company.
  – During the contract, the agency pays for the cost of the UESC from the savings resulting from the energy efficiency improvements.
Why a UESC?

• As the largest energy consumer in the U.S., the Federal Government has the opportunity and responsibility to lead with smart energy management.

• A UESC reduces Federal impact on the environment, increases national energy security, and promotes public-private partnership.
Advantages of a UESC

- The UESC reallocates the utility bill:
  - Avoids costs
  - Lowers demand
  - Pays for equipment/improvements
  - Achieves cost savings
Other advantages of a UESC

– Streamlined procurement, flexible contracts
– Relationship with a long-standing entity
– Flexibility in performance assurance
– One-stop shop for a turnkey project
– Low finance rates
– Implementation of energy efficiency projects without using direct appropriations
The Purpose of a UESC at BNL

• To meet DOE’s sustainability goal by:
  – Increasing lighting efficiency
  – Replacing/enhancing outdated building controls
  – Reducing chilled water costs (including cost of fuel used to produce chilled water)

• To achieve reductions (from baselines) of:
  – 3.3% in greenhouse gases
  – 11% in energy intensity
UESC Details

- **Contractor:** National Grid (facilitates design, finance, construction)
- **Service provider:** Siemens Building Technologies (conducts the work)
- **Contract term:** 10 years
- **Total cost:** $12.2 million
- **Savings (projected):** >$1.3 million/year
Lighting Improvements in 17 Buildings

• Install/replace lighting and add controls:
  — New lighting fixtures
  — Retrofit existing lighting fixtures
  — Occupancy sensors
  — Timers
  — More efficient bulb replacements
Controls Improvements in 9 Buildings

- Install/replace existing systems that control major components of mechanical systems, including:
  - Discharge air to control valves
  - Temperature control
  - Additional zone sensors
  - Demand control ventilation
  - Night setback
  - Variable frequency drives
  - Economizer cooling
  - Hot water reset
Chiller Installation, Central Chilled Water Facility

- Install new electric centrifugal chiller and related components/systems, including:
  - One 1,250 ton chiller
  - Cooling tower cell
  - Chilled water pump
  - Condenser water pump
  - Variable frequency drives
  - Instruments and controls
  - Mechanical and electrical connections
Utility Energy Services Contract

- Questions and Answers