Energy Services in a Resilient Marketplace

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The National Association of Energy Service Companies (NAESCO)
NAESCO

• A non-profit trade association advocating for the energy service company market
• In existence since 1983
• Membership of 97 companies
• Home of the only Energy Service Company (ESCO) Accreditation
• 28 Accredited ESCOs
Our projects

• Repurpose money currently spent on wasted energy and maintenance of obsolete equipment
• Implement comprehensive, 10-20 year projects, primarily for government agencies
  • Largest Market (MUSH)
  • Federal buildings and facilities
• Implement negotiated project work scopes
• Provide private capital and that is repaid from project savings over the term of the contract
• Guarantee Project Performance
Limitations of ESCO Model

- Project scope limited by legal definitions of “savings”
- Non-Energy Benefits (NEBs) don’t count because their value usually cannot be “monetized”
  - Operations and Maintenance savings
  - Capital Cost Avoidance
  - Electric system capacity credits
  - Emissions reductions credits
  - Space and/or systems infrastructure reductions
  - Productivity improvements
  - Resilience and reliability
- Counting NEBs could more than double “savings” and increase project scopes
Limitations of the ESCO Model

• Commercial and industrial (C/I) customers can recognize NEBs as they see fit
• C/I customers generally not interested in comprehensive, long-payback projects
Why Focus on Resiliency Now?

• Wake-up call from recent natural disasters
  • Hurricanes, forest fires, rising tides
• Utilities not available for weeks or months
• Recognition that our increasingly interconnected information systems are increasingly vulnerable
• Publicized cyber attacks – Target, Marriott, Equifax
  • Russian hacks into utilities in 24 states
• Utility outages threaten national security installations
• Increased threat of Terrorism or rogue states
Potential Resiliency Measures

• Site power
  • Emergency – battery, UPS
  • Long-Term replacement – renewable and CHP
  • Contingency and controls - switching

• Climate Change Adaptation
  • Building and Structure modifications – barriers, pumps
  • Control System Algorithms – alarms
  • Roofing – wind, water

• Terrorism
  • Windows – blast resistant
  • Security systems

• Cybersecurity
Challenges in resiliency

- Inconsistent definition of resiliency
- Lack of consistent design guidelines
- Unclear analysis of actual site resiliency needs

- ESCOs provide unique capabilities to cooperatively negotiate a scope of work that fits the unique requirements of each site, as well as fulfilling legal design requirements
Resiliency (from Navy document)

3 Pillars of Energy Security

**Reliability**
- The percentage of time energy delivery systems (utilities) can serve customers at acceptable regulatory standards.
- Outage Duration
- Outage Frequency
- Availability
- Power Quality

**Resiliency**
- The ability to avoid, prepare for, minimize, adapt to, and recover from energy disruptions.
- Backup Generation
- Uninterruptible Power Supply
- Power/Fuel Storage

**Efficiency**
- The use of the minimum energy required to achieve the desired level of service.
- Metering
- Audits
- Intensity Reduction
In the energy arena

- 2010-2015 - Direction was for renewable power, lower the carbon footprint, green the facility
- 2015 – Shift began as renewable power was seen as a resilient energy source, but not end-all to resilience
- 2016-2018 – Full transformation to a government view that all projects be viewed in terms of resiliency
  - Renewable Power paired with other sources and controls to improve reliability
  - Building Retrofits considered in overall resiliency assessment
  - Additional requirements to make retrofits meet a reliability or resiliency guideline
  - Pentagon requirement for on-site fuel storage?
Paradigm Shift

- Future cost savings is based upon past expenses
- Resiliency expectations for performance in the future are different from the past
- Value of resilience not defined
- How do you do cost/benefit analyses on investment in resilience?
Need new ways to finance

- Resilience is a new project deliverable, which has not been valued in most public facilities
- Projecting savings based on historical performance not sufficient to pay for resilience
- Industry ahead of government in calculating the value of, and investing in, resilience and reliability
- Need to develop standard methods to value NEBs
- Use these values to add resilience and reliability for critical public facilities to infrastructure initiatives
Questions?

Contact information

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