Financing Energy Projects

Moderator: Chris Silkie, P.E., LEED AP, CEM, Cardno Inc.

Speakers:

• The Honorable William Anderson, Director of Strategy & Business Development, Government Segment, Eaton Corp.
• Matthew Cohen, Program Manager, State of Connecticut Department of Energy and Environmental Protection Program
• Peter Flynn, Executive Vice President, Bostonia Partners LLC
SAME JETC
Financing Energy Projects
By: The Honorable William C. (Bill) Anderson
Houston, TX
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Operational Priorities to Drive Financing
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The Tale of the Tape…
Operational Priorities to Drive Financing

The Tale of the Tape…

• 2013 SAME JETC Education Sessions
  • Only 3 Training Sessions to Cover Cyber, Renewable Energy and Energy & Sustainability
Operational Priorities to Drive Financing

The Tale of the Tape…

• 2013 SAME JETC Education Sessions
  • Only 3 Training Sessions to Cover Cyber, Renewable Energy and Energy & Sustainability

• 2015 SAME JETC Educational Sessions
  • 2 Learning Tracks of 4 Completely Dedicated to Energy, Sustainability, Resiliency and Infrastructure Protection
There are “Financing Challenges” and then there are “Financing Challenges”
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“I Want a Corvette on a Kia Budget”: 
There are “Financing Challenges” and then there are “Financing Challenges”

“I Want a Corvette on a Kia Budget”:

Project must deliver:

- Energy surety
- Progress towards 1 GW Challenge
- New distribution infrastructure
- Net Zero
- Rebuild my base in return for modest ground lease
- Market rate power
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When Everything is a Priority, Nothing is a Priority
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When You Harvest the Low Hanging Fruit, the Rest of the Fruit Dies
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When You Harvest the Low Hanging Fruit, the Rest of the Fruit Dies

Longer Payback, Higher Value Distributed Generation/Energy Efficiency Opportunities Need Quick Payback Counterbalance to Pencil…Many Already Gone
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The Tortured Past of EULs
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The Tortured Past of EULs


Kabuki Dance to Keep Financial Benefits On Base…In Kind vs Cash
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The Evolving Role of the Utilities…
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The Evolving Role of the Utilities…

• From Reluctant Follower to Market Leader in the Distributed Generation Revolution?
• Role of UESCs?
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The Evolving Role of the Utilities…

• From Reluctant Follower to Market Leader in the Distributed Generation Revolution?
  • Role of UESCs?

• How Will Utility Low Cost of Capital and Embedded Service Provider Status Impact Velocity and Volume of Energy Surety/Resiliency Projects at Federal Facilities?
The Future…Evolution not Revolution
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Absent a Major Change in Thinking on Capitol Hill and at OMB…and That Won’t Happen Soon…the Current Toolkit Will Get Tweaked…

• Energy Services Agreements
• Efficiency Retrofit Leases
• Property Assessed Clean Energy (PACE) Programs
The Future…Evolution not Revolution

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An Uncertain Future Will Impact Direction…Statute and Policy Will Limit the Agility of Private Sector Finance to Respond
What We Can Learn from States/Cities
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Focus on Gaps in Private Sector Financing Coverage...
Then Get Out of the Way and Let the Private Sector Do Its Job
What We Can Learn from States/Cities

Investment Response to Superstorm Sandy

**New Jersey Energy Resilience Bank.** Finance the design and installation of distributed energy resources that increase the energy resiliency.

**Connecticut DEEP Microgrid Program.** Addresses community needs for energy surety through a five year grant program. Focus is funding projects supporting distributed energy generation for critical facilities.

**Massachusetts DoER Community Clean Energy Resiliency Initiative.** Grant Program focused on municipal resilience. Grants and loans awarded to assist with technical development or project implementation.

**New York Prize Community Microgrid Competition.** Part of the NY Governor's Reforming the Energy Vision plan (REV), to build a clean, resilient and affordable energy system for all New Yorkers.
Questions?

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Matthew Cohen

• Manager, Performance Contracting Program, Connecticut Department of Energy and Environmental Protection

• Prior experience:
  – Energy Manager, U.S. Pacific Fleet, Pearl Harbor, Hawaii
  – Senior Technical Manager, Gridlogix
  – Technical Manager, Broadband Energy
  – Eastern Technical Manager, Planergy Energy Services
  – B.S. Civil Engineering, Rensselaer Polytechnic Institute
Energy Savings Performance Contracting

Energy Savings Performance Contracts repurpose energy inefficiencies to fund infrastructure improvements.
Performance Contracting Process

Step 1: Select qualified Energy Services Provider

Step 2: Investment Grade Energy Audit

Step 3: Arrange Financing

Step 4: Finalize ESPC Contract...Construct

Step 5: Measure and Verify
Why is the CT ESPC program effective?

- Pre-approved, standardized documents and streamlined process
  - Based on best practices nationwide

- Pre-qualified vendors

- Technical and Financing Support
  - CT Green Bank
Connecticut Valley Hospital

- Principal facility of CT Department of Mental Health and Addiction Services

- State hospital since 1868, services include:
  - Forensic (specialized services to individuals involved with the criminal justice system)
  - General psychiatric
  - Inpatient addiction treatment

- Operations are 24/7/365
  - 50+ large institutional, residential, and maintenance buildings over 200 acres

- $5M annually in energy related costs
  - Master metered facility
    - Little visibility into energy consumption details
Long Payback Measures

- Air Handling Units
- Windows
- Energy Efficient Chillers
- Pool Upgrades
- 50 kW PV System

Scale
Cost of Measure = $1M
Short Payback Measures

Energy Efficient Transformers
Steam System Upgrades
Insulation and Weatherization
Cogeneration
Pipe/Mech Equip Insulation
Steam Traps
Lighting Upgrades
EMS Upgrades
Plug Load Controls
Fuel Switching
Power Plant Boilers*

* Boiler project funded and completed in 2014

Scale
Cost of Measure = $1M
Total Project Cost: $33M
Aggregate Project Payback = 10.8 years

Cost of Measure = $1M
Value adds

• Installing sub-metering in all buildings to establish energy use baselines and allow for real time monitoring

• Developing web-based information exchange platform for project development and ongoing M&V

• Leveraging savings from recently completed (and funded) energy-related projects

• Developing CT State procurement strategies to reduce labor and material costs
Value adds

• Working with electric and gas utility on customized incentive structure

• Development of a Working Capital Loan Fund for preparatory costs

• Analysis of multiple financing options
  – Bonds, leases, and off-credit structures

• Utilizing available Interest Rate Buydown program to reduce financing costs
2015 SAME Joint Engineer Training Conference & Expo

Financing Energy Projects
(Financier’s Perspective – ESPC/Deep Retrofits)

• Peter Y. Flynn
• Executive Vice President

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ESPC Financing Structure

GOVERNMENT -> ESPC and Delivery Orders -> ESCO
ESCO -> ECMs
ESCO -> MPA
ESCO -> O&M Payments
TRUSTEE
FINANCIER

Contract Payments (Debt Service / O&M Payments)

MPA
Purchase Price

O&M Payments
Aggressive Savings/Enhanced M&V

• Risk Transfer
• Requires more intense due diligence
• Investors prefer Option A for life of contract
• Some investors may not entertain projects with significant on-going M&V
• Introduces greater risk that savings shortfalls must be met by ESCO
• Financial strength & experience of ESCO necessary
One Solution: Blended M&V

Examples:
- Premium efficiency motors: years 1-3 utilizes Option C and years 3+ Option A
- Controls System: utilized “modified” Option B

Advantages:
- Can provide improvement in pricing
- Allows Federal agencies to enhance M&V and demonstrate savings
- Provides a cost benefit
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