

Charting a Course to Energy Independence

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Greening VA With Enhanced Use Leasing (EUL)

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Greening VA with EUL

VA Energy Profile

- VA facilities consist of medical care space, benefits administration offices, and national cemeteries
- \$500 million energy bill (FY 2008)
- VA's 153 medical centers:
 - Represent **99%** of total VA energy consumption and **88%** of total VA water consumption
 - Operate **24x7**
 - Have high heat to power load ratios (1:1 – 1:9)
 - Use lots of steam/hot water/chilled water in space conditioning, food services, sterilization, domestic hot water, and laundry systems
 - May face aging, outdated central boiler/chiller plants
 - Are physically good candidates for combined heat and power (CHP)/cogeneration/trigeneration systems
 - Are often located adjacent to other medical institutions



- Potential to use biogas (e.g., waste methane from landfills) and biomass (e.g., forest industry waste) fuels in medical center boilers, CHP systems
 - Dependent on nearby, reliable sources of these renewable resources
- Financing authorities such as enhanced use leasing provide mechanisms that can help VA meet its energy needs



VA Enhanced Use Lease Program

- Authority
 - ◆ Sections 8161 - 8169 of title 38, U.S.C.
 - ◆ Enacted August 14, 1991
- Current Status
 - ◆ >16 year program history
 - ◆ 53 projects awarded to date (3 energy)
 - ◆ 40+ projects currently in development
 - ◆ Studying over 150 initiatives



VA EUL Process Overview: Six Major Steps

1. Secretary EUL Priority List
2. Concept Plan—A formal application approved by the Assistant Secretary for Management
3. Public Hearing—Present overview of VA's intentions to community & interested parties
4. Solicitation, Developer/Lessee Selection, and Negotiations
5. Notice of Intent to enter into an EU Lease — Formal notification to Congress
6. Execute lease and enter post-transaction phase



EUL Energy Center Concept

- VA leases a central boiler/chiller plant (and/or other buildings/land needed) to selected entity
- Entity designs, builds, owns and operates a cogeneration-based energy center for the life of the lease
 - Supplies steam/hot water, electricity, chilled water to VA medical center, possibly other customers
 - Operates and maintains all central plant equipment and systems through life of the lease
 - Responsible for meeting total facility energy need
- Currently have three operating EUL energy centers: two in Chicago, one in Tennessee



Incorporating Energy Conservation Measures

- Have included installation and maintenance of ECMs in two EUL energy center deals
 - Agreed-upon ECMs installed as part of original energy center project
 - EUL agreements provide for negotiation of future ECMs for multiple sites within the region
- Part of consideration VA receives for the lease
- Structured as an energy savings performance contract



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Energy Center Case Study

Mt. Home, TN EUL Energy Center

- James H. Quillen
VA Medical Center
- Operational
June 2001





Mt Home EUL Energy Center

- Developer installed:
 - ◆ One 3.1 MW dual-fuel engine generator
 - ◆ Two 1.8 MW diesel engine generators
 - ◆ Three 1,300 kW centrifugal chillers
 - ◆ One 1,000 ton absorption chiller
 - ◆ One 700,000 gallon chilled water storage tank
 - ◆ Variable flow primary chilled water pumping storage system
- Via partnership, also serves adjacent East Tennessee State University College of Medicine
- 3rd party customer: Johnson City





Mt Home EUL Energy Center

- Since 2007, about 1/3 of annual fuel consumption is highly processed **methane gas** from municipal landfill (rest is natural gas)
- Renewably fueled electricity generated in FY 2008: 6,345 MWhr (21,686 MMBtu)
 - **0.2% of total VA electricity consumption**
 - **Counted as 0.4 percentage points towards 3% RE requirement**
 - **Also received source energy reduction credit**
- Renewably fueled steam generated in FY 2008: 91 million pounds (91,000 MMBtu)



Mt Home EUL Energy Center

- VA Contributed
 - ◆ 35-year outlease of 2 acres of property valued at \$300,000
- The Deal
 - ◆ Developer/operator to construct, operate and maintain state-of-the-art energy center
 - ◆ Developer to accomplish \$3.0 M of energy conservation measures throughout the campus
 - ◆ VA commitment to buy electric and thermal energy via automatic renewable 2-year energy service agreements, contingent upon:
 - **Annual appropriations**
 - **Continued operation of VA medical center**



Mt Home EUL Energy Center

Benefits to VA

- Reduced energy consumption and costs
 - ◆ \$11.6 M NPV non-recurring cost savings
 - First 25 years (\$ 2004)
 - ◆ \$27.3 M in discounted life-cycle costs
 - First 25 years (\$ 2004)
- Capital cost avoidance
 - ◆ \$25.0M
- Reliable energy – with 100% backup
- Projected revenue
 - \$1 M from energy sales to other customers



Plans for More Renewably Fueled Energy Centers

- Via ARRA: Will be constructing two renewably fueled energy centers
 - ◆ **White River Junction, VT VA medical center**
 - ◆ **Togus, ME VA medical center**
- Currently contracting for feasibility studies of renewably fueled central plants at 38 sites
- ARRA funding for construction of up to 9 more energy centers
- Additional centers via EUL?



Greening VA with EUL

QUESTIONS?

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