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VA Renewable Energy Program

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Overview

- Federal and VA Requirements
- VA Energy Action Plans
- Accomplishments
- Lessons Learned
- Future Plans
- Q&A

Federal & VA Requirements

- ❑ Federal Requirement - 7.5% of electric energy consumption to be from renewable energy source by 2013
 - ❑ **VA's Requirement:** 15% of energy consumption to be from on-site renewable energy source by 2013
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- ❑ How it applies to VA?
 - Onsite RE Generation vs. RECs Purchase
 - 2006 - 2010 avg. VA electricity consumption = 3,100 million kWh
 - Federal Requirement = 3,100 million * 3.75% = 116 million kWh
 - VA's Requirement = 233 million kWh
 - Equivalent to 21,000 Avg US household electricity use
 - PV capacity req'd = 160 MW = \$1.6 Billion (2006 PV Cost)

VA Energy Action Plan

- ❑ VA Energy Taskforce Team Created – Charter signed by VA Secretary in 2005
 - ❑ VA Energy Action Plan (**including Detailed Renewable Energy Plan**) was developed in 2006.
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- ❑ Detailed Renewable Energy Plan
 - Renewable Energy Screening for All VA facilities – ✓ in 2007
 - Detailed feasibility studies – first 16 sites ✓ in 2007
 - Pilot Solar PV Projects – 2 sites awarded ✓ in 2008
 - Pilot projects for Wind, Geothermal, CHP... systems - ✓ in 2008-9
 - Determine strategies and priorities in RE systems - ✓ in 2009
 - Majors – 15% RE requirement (VA) - ✓ starts from 2009 (+ 3% budget)

Accomplishments - Solar PVs

- Awarded 53 projects (2008-11) - 46 MW capacity (\$230 Million)
- Est. generation – 75 million kWh



Tracking PV at Tucson facility



Carport PV at Phoenix facility



Carport PV at McClellan facility



Roof top PV at Honolulu facility



Roof top PV at Palo Alto facility

Accomplishments – Wind Turbines

- Awarded 4 projects – 700 kW (\$3 Million)
- Detailed Studies completed – 13 sites
- Est. Generation – 2.3 million kWh

50 kW Wind turbine at
Bourne National
Cemetery



600 kW turbine at St.
Cloud Medical Center

Accomplishments – GeoThermal

Direct Geothermal System

- Existing at Boise VAMC – Hot Water system (takes care of 95% of heating load)
- Awarded 1 project - \$7 million

GSHP

- Awarded – 6 sites
- Detailed Studies – completed 34 sites



Drilling for vertical
under-ground piping
at St. Cloud VAMC

Accomplishments – CHP

- Awarded:
 - ✓ Awarded 6 projects in FY 2010, and 1 in 2011 – 7 MW (\$80M)
 - ✓ Additional 10 projects will be awarded in 2011
 - ✓ Estimated RE generation – 274 million kWh
 - ✓ Detailed studies – completed for 56 sites
- Major Construction Project:
 - ✓ Required to install CHP systems unless proved not feasible

Renewable CHP Plant at Mt. Home VAMC

- 6 MW Combined Heat and Power (CHP) system
- Generating 18,400 MWh electricity annually
- Using 60% Nat Gas + 40% Processed Methane
- RE generation – Approx. 7,500,000 kWh yearly
- Source Energy Savings Credit – 153,000 MMBtu



VA RE Generations

VA's On-Site Renewable Energy Generation (by Contract Award)



Lessons Learned

- ❑ Inter-Connection Agreements
 - Coordination with utility providers and OGC early (planning and design phase)
- ❑ Coordinate with all related offices
 - Site and regional Leadership
 - Site and regional Energy Managers and Planners
 - Site and regional Environmental Managers
 - Etc
- ❑ State and Local Incentives
 - Incentives are forwarded to VA years after – different FY
- ❑ Monitoring RE generation by Advanced Meter System

Future Plans

- ❑ Priority in Renewable Energy Projects (VA)
 - Implement Direct Geothermal Projects if feasible
 - 1st priority - RE CHP
 - Prepare for Solar PV project – for End of FY \$
- ❑ Major Construction Projects
 - Make sure On-Site RE system generates >15% of site electricity
 - Make sure additional 3% budget included
- ❑ Look for possibilities of ESPC and UESC RE projects
- ❑ Look for Methane Gas purchases from Landfill area for existing CHP's

Questions?

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