Strategies for Implementing Renewable Projects with Utilities

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FEMP
Federal Energy Management Program

PSE
Puget Sound Energy
Army Large-Scale Renewable Energy Projects

Installation Project Status:
- Operations
- Construction
- Contracts & Agreements
- Project Assessment & Validation

- Ft. A.P. Hill
  - Wind
- Ft. Drum 60 MW Biomass
  - Operational Nov 2014
- Ft. Detrick 15 MW Solar
  - Operational Feb 2016
- Redstone Arsenal
  - 8 MW Solar
  - 25 MW CHP
- Anniston Army Depot
  - 10 MW Solar
- Ft. Rucker
  - 10 MW Solar
- Ft. Gordon
  - 30 MW Solar
- Ft. Benning 2
- Ft. Stewart
  - 30 MW Solar
- Ft. Hood
  - 15 MW Onsite Solar; 50 MW Offsite Wind
- Schofield Barracks
  - 60 MW Multi-fuel
- Tooele Army Depot
  - 10 MW Wind and/or Solar
- Rock Island Arsenal
- JFTB Los Alamitos
- Ft. Huachuca 18 MW Solar
  - Operational Jan 2015
- Ft. Sill
  - 25 MW CHP
- Redstone Arsenal
  - Operational Feb 2016
- Ft. Benning*
  - 30 MW Solar
  - Operational Feb 2016
- Ft. Gordon
  - 30 MW Solar

*Operational, awaiting final documents
Enterprise-Wide Portfolio

OEI develops projects through an enterprise approach to capitalize on the Army’s diverse installations

- On or bordering Army land
- No taxpayer dollars
- Leverages private financing

Fort Hood, TX: 65 MW AC Hybrid Solar & Wind Projects; $168 million in projected cost avoidance over the course of the contract

Fort Benning, GA: 30 MW Solar Array; The project comprises 133,950 solar panels
Army & Utility Collaboration

- Over 150MW So Far with Utilities
  - Rate based resources on Army land
  - Partners: TEP, GPC, APC, HECO
  - Leverages authorities through GSA Areawide and land outgrants

- Collaboration Opportunities
  - Share concepts that have worked and lessons learned
  - Develop new concepts, or relationships, to assist the federal government, utilities, and industry achieve clean energy goals

- FUPWG Feedback
  - What can we do better?
  - What other opportunities are available?
  - How might new utility business models help?

Fort Huachuca, Arizona: 18 MW Solar Project; Operational January 2015 with more than 57,000 solar panels
Complementary Army & Utility Needs

- **Army Energy Security and Sustainability Needs**
  - *Renewable Energy:*
    1GW of RE for 25% RE by 2025
  - *Energy Resiliency:*
    the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from service disruptions

- **New Utility Business Models**
  - New tariffs
  - Clean energy infrastructure
  - Resilient grids
  - Changing customer demands
  - Solar Impacts (DERS)
  - Internet of Everything
Pilot Proving Grounds

- Army can be a good partner for pilots
  - Army land and security can be value add
  - Army hosts utility owned rate based energy resiliency assets
  - Army protects the assets for the community

- Potential projects
  - Renewables, smart grids, storage
  - Management of DERs at customer sites
  - Campus microgrids: industrial, office, residential
  - Agreements for mutual assistance for power restoration
  - Electric vehicles
Utility Engagement Lessons Learned

• **Common Ground**
  – Utility stakeholders have demonstrated strong support for the military in their communities
  – New utility business models for clean energy and resilience complement the Army Energy Security and Sustainability Strategy

• **Communication**
  – We are similar organizations with a hierarchy for approvals, but use very different language

• **Process Awareness**
  – Utilities struggle with Army navigating Federal approvals and NEPA
  – Army struggles with utilities navigating the regulatory process

• **Economics**
  – Making projects ‘pencil out’ is rapidly changing
  – Economics of a utility tariff deal are complex

• **Uncertainty**
  – What we knew for sure 5 years ago may no longer be so
Any Questions?

Fort Benning, GA: 30 MW Solar Project; Operational February 2016