Microgrids: Policy Implications and Challenges for Utilities

Pacific Northwest Economic Region
Annual Meeting – Anchorage, AK
Energy II Working Group
16 July 2013

Project funded in part through a grant from Department of Energy EPSCoR
Our Plan

• Meeting logistics
• An overview of micro-grids
• Utility experience highlights
  – AVEC
  – KEA
  – NWPC
• Discussion with the panel / Q&A
Our Panel

• **Panelists:**
  – Emanuel DaRosa (NW Territories Power Corp’n)
  – Meera Kohler (Alaska Village Electric Cooperative)
  – Darron Scott (Kodiak Electric Association)

• **Moderator:**
  – George Roe (Alaska Center for Energy & Power)

Diverse experience base from many years working with different grid configurations, levels of renewable energy integration, natural environment challenges, and organization management approaches.
ACEP Roles & Goals

**Research** – Move energy solutions from laboratory to market.
- Discover. Develop. Remove barriers.

**Outreach** – Provide stakeholders with information and independent expertise needed to make informed decisions.

**Academic** – Leverage UA academic resources to meet energy workforce needs of Alaska and relevant global energy markets.
- Involve. Teach. Train.

ACEP enables, evaluates and integrates energy systems in islanded micro-grids.

http://www.uaf.edu/acep/  (907) 474 1145
Microgrid Definition

• “A group of interconnected loads and distributed energy resources (DER) with clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid [and can] connect and disconnect from the grid to enable it to operate in both grid-connected or island mode.” (DOE)

• “A DoD installation microgrid is an integrated energy system consisting of interconnected loads and energy resources which, as an integrated system, can island from the local utility grid and function as a stand-alone system.” (LLNL)
Alaska: Pioneers in ‘Island’ Energy Systems

- Geographic isolation of population centers and significant trans-regional electrical intertie challenges.
- Wide-spread dependence on combustion-powered generators.
- High fuel costs establish strong incentive for operational efficiency & leverage of renewable energy resources.
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Thoughts from the panel about ...

• When are microgrids advantageous for your utility? How & why?
• What are the key challenges associated with integrating microgrids?
• What opportunities could be provided by implementing a system of microgrids, versus a larger monolithic grid?
Organization & Region Collaboration
- Demonstrations / Policies / Cost-sharing -

SYNERGY!