Arlington Microgrid
A Learning Experience for the Utility Marketplace

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OVERVIEW

Provide a high level overview of the history of Snohomish County Public Utility District and the twists and turns of the Arlington Microgrid Project

AGENDA

► About SnoPUD
► Project Development Process
► Project Evolution
► Current State
About Snohomish County PUD

► Snohomish County population – approximately 805,000
► Electric System distributes power to almost 332,000 customers
► Largest PUD in Washington State
► 12th largest PUD in the country
► Three elected commissioners
► About 85% of Power from BPA
SnoPUD Generation

► Five Hydro Plants:
  • Jackson Hydro Project – 100MW
  • Young’s Creek Hydro Project – 8MW
  • Woods Creek Hydro Project – 650kW
  • Hancock Creek Hydro – 6MW
  • Calligan Creek Hydro – 6MW
SnoPUD Generation – Cont’d

- Two Energy Storage Projects:
  - MESA 1
    - 2MW/1MWh Lithium Ion
  - MESA 2
    - 2.2MW/8MWh Vanadium Redox Flow
MESA1 and MESA 2

► DERO
  • Distributed Energy Resource Optimizer
  • Securely aggregates and optimizes the economic value of distributed energy resources
► Energy Imbalance Mitigation
► Wind Variance
► Energy Arbitrage
Arlington Microgrid – Development

- Request for Statement of Qualifications
  - July 2017
- WA State Clean Energy Fund 2 (CEF2)
- Scope Developed by PUD
- BESS 500kW/1000kWh
- 500kW Fixed PV
- 5 Vehicle to Grid (V2G) Charging Stations
- Supplemental Generation
  - Capstone
  - Other Technology
Arlington Microgrid – Round 1

► Project Goals
► Grid Resiliency and Disaster Recovery
► Renewable Energy Integration
► Grid Support and Ancillary Services
► V2G Demonstration
► Results Verified
  • U WA Engaged
  • Modeling and Performance Verification
Arlington Microgrid – Round 1
Arlington Microgrid – Round 1
Arlington Microgrid – Evolution

► Reprogram Arlington Office Project
  • Size and Schedule Delayed
► Microgrid Topology Development
  • Serve CETC and Modular Data Center
  • Behind the POI
► Right-size Standby Generator
  • Diesel vs. Capstone
► Upsize BESS
  • 1MW/1MWh
► Add Load Bank for Testing
Arlington Microgrid – Evolution
Arlington Microgrid – Evolution

► Solar Portion of Project Accelerated – Stand Alone
► Community Solar Incentives
  • Renewable Energy System Incentive Program – $0.16/kWh
  • Program Requires in Service by June 2019
  • Whole or Portion of Panels Purchased by PUD Customers
► Separate Solar Procurement
► Bid Evaluation Criteria
► Out for Bid Today
Arlington Microgrid – Evolution
Arlington Microgrid – Evolution

► The Rest of the Microgrid
► Equipment and Controls Procurement
  • Switchgear
  • BESS
  • Microgrid Controller
  • Standby Generator
  • Load Bank
► Balance of Plant
Current State
Current State

- Construction Underway
- Site Utility Installation

Phase 1
Picture taken on September 24, 2018
Solar Array location Looking West
V2G

- V2G Fleet Vehicle Charging Stations
- Two 6kW Bi-Directional Units
- Charge/Discharge
- V2H
- EV Warranty
  - UL Standards
  - More Work Ahead
SUMMARY

► If you’ve Seen One Microgrid, You’ve seen One Microgrid
► Be Flexible and Embrace Change
► Be on the Lookout for Incentives
► V2G is in Early Development Stages
Question/Answers?
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