Arlington Microgrid

Project Profile

Components:

- 1 MW/1.4 MWh – Lithium-Ion Battery Energy Storage System with MESA* compliant battery management system
- 500 kW AC Solar Array with Smart Inverters
- V2G – Vehicle-to-Grid System
- Microgrid Control System and Building Energy Management System
- Clean Energy Center
- Solar Tree

*MESA: Modular Energy Storage Architecture, mesastandards.org

Use Cases:

- Grid Resiliency and Disaster Recovery
- Renewable Energy Integration
- Grid Support & Ancillary Services
- V2G Integration

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For more information, visit
www.snopud.com/microgrid

Project Address: 17601 59th Avenue NE, Arlington, WA 98223

Project Overview:

Located just east of the Arlington Airport, the PUD's Arlington Microgrid and Clean Energy Center demonstrates how renewable energy and battery technology can increase grid resiliency and disaster recovery. A microgrid is locally grouped generation and load that is normally connected to the grid but can be isolated or disconnected to operate independently.

What can we learn from this project?

The project demonstrates how energy storage in combination with a renewable energy resource and a microgrid control system can be utilized for disaster recovery and grid resiliency as well as renewable energy integration and grid support. In addition, the project will demonstrate how intelligent solar PV controllers and vehicle-to-grid (V2G) systems can benefit the grid. The Clean Energy Center will allow the PUD to provide educational information about the project to customers and students.

The University of Washington plans to use the Arlington Microgrid to study the economics of microgrids, energy storage and solar in the Pacific Northwest. The project also provides an opportunity for researchers to explore the feasibility of using V2G technology, challenges of using a microgrid to provide renewable energy integration (solar) and seamless grid support during an emergency.

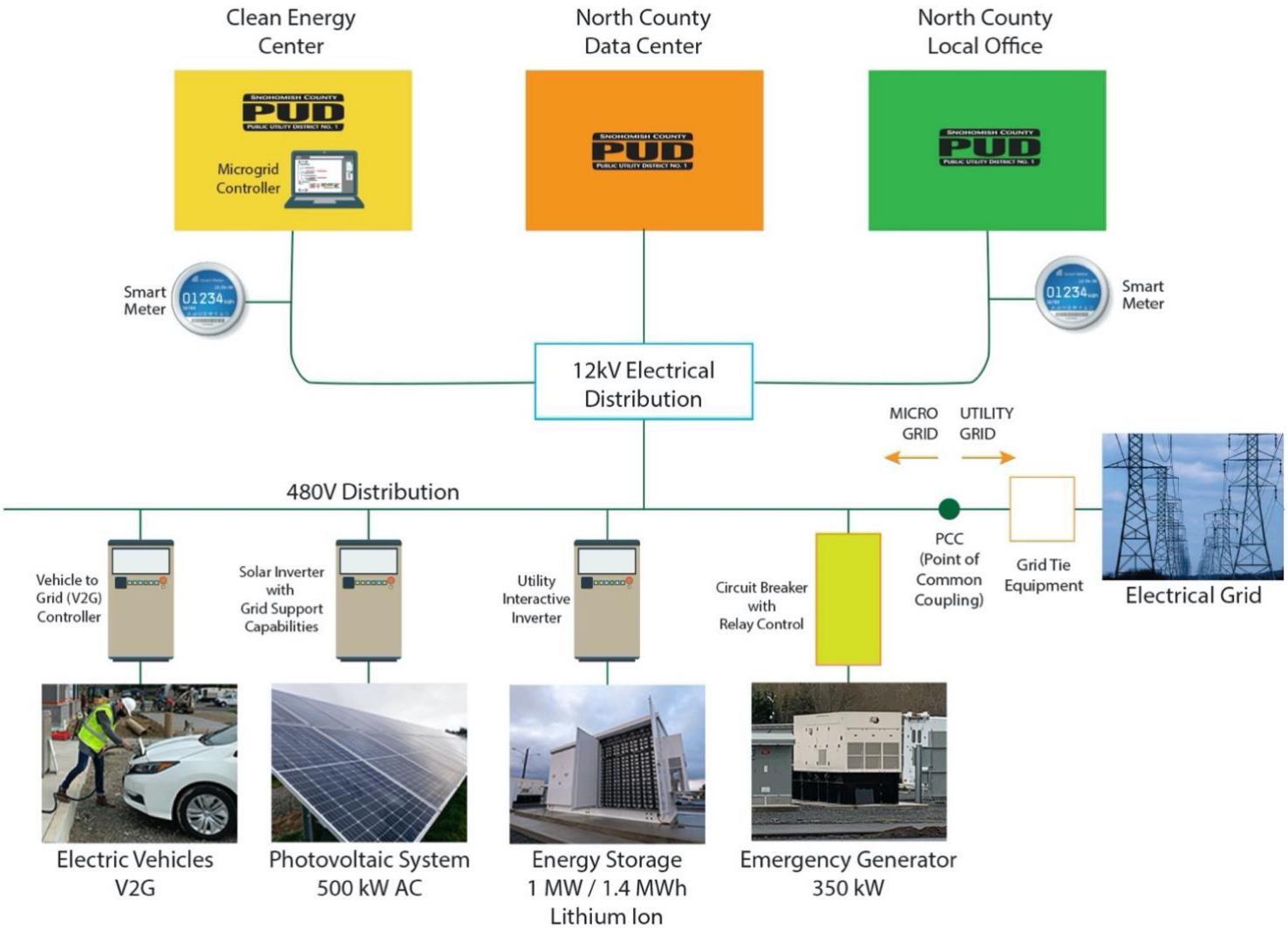
Solar Tree demonstrates solar + battery storage

Located in the courtyard of the Clean Energy Center, the PUD's solar tree demonstration project demonstrates how solar power and battery storage work together on a small scale. In the shape of a small tree, the solar tree generates power when it's "leaves," or small solar panels, absorb sunlight, convert it into electricity, and send it through the trunk-like pillar of the structure to connected batteries. Like the microgrid, the solar tree can be tied to the grid or islanded.

Community Solar

- Largest community solar array in the state of Washington
- 500+ PUD customers reserved 100% of the available solar units in under a month
- Granted 10% of the units to two community service providers to benefit low-income households
- Program will produce energy and production credits for customers for 20 years

Arlington Microgrid Contributors	
Snohomish County PUD	**Owner**
WA Dept of Commerce	**Financial Partner – CEF2 Grant**
University of Washington	**Contract – Modeling, Data Analysis & Reports**
Burns & McDonnell	**Contract – Owner's Engineer**
Mitsubishi Electric	**Contract – V2G - Equipment and Support**
A&R Solar	**Contract – Solar Array Construction**
Hitachi - ABB Power Grids	**Contract – Battery and Microgrid Controls Supply**
PUD Substation Crews	**Battery & Controls Install**



About the PUD – Snohomish County PUD serves one of the fastest-growing counties in the Pacific Northwest, delivering electricity to over 360,000 customers and water to about 23,000 customers. It's currently the second largest public utility in the Pacific Northwest.