Clean Energy Fund

Grid modernization

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We strengthen communities

HOUSING HOMELESSNESS

INFRASTRUCTURE

BUSINESS ASSISTANCE

ENERGY

PLANNING

COMMUNITY FACILITIES

CRIME VICTIMS & PUBLIC SAFETY

COMMUNITY SERVICES
Clean Energy Fund Programs

Working to transform and modernize the energy sector. We’re opening new markets for clean energy and low-carbon technology.
CEF1 Smart Grid Grants to Utilities

- Grants to competitively selected consortium of utilities, utility vendors and researchers
- Consortium must match $15 million state investment
- Projects will
  - Integrate intermittent renewables through energy storage and information technology
  - Dispatch energy storage resources from utility control rooms
  - Use thermal properties of buildings and/or district energy systems to store energy
  - Improve the reliability and reduce the costs of intermittent or distributed energy
- Form Advisory Panel
CEF1 Smart Grid Funding

4 projects with 3 utilities
7MW/15MWhr of BESS

- SnoPUD MESA 1
  2MW/1MW hr
  $2.4M

- SnoPUD MESA 2
  2MW/6.4MW hr
  $4.4M

- PSE - Glacier
  BESS
  2MW/4.4MW hr
  $3.8M

- Avista - Pullman
  BESS
  1MW/3.2MW hr
  $3.2M

Pacific Northwest National Laboratory Use Case Analysis

$14.3M Grant Funds
CEF1 Grid Modernization Sites
Washington Clean Energy Fund (CEF)
Energy Storage Analytics Program Synopsis

Objective

• Provide a framework for evaluating the technical and financial benefits of energy storage, and exploring the value that energy storage can deliver to Washington utilities and the customers they serve.

Phases

Phase 1: Develop Data Requirements and Data Systems
Phase 2: Use Cases / Performance Monitoring
Phase 3: Evaluation

1) Develop Data Requirements and Data Systems
2) Install Energy Storage Systems (ESS), Run Use Cases, and Document Technical Performance
3) Evaluate Technical and Financial Performance

Team

• **PNNL**: Brings expertise in energy/economics/environment system analysis and modeling
• **PSE, SnoPUD, and Avista**: Bring deep operational experience and required utility data / test sites
• **Washington Dept. of Commerce**: Program management
CEF2 Grid Modernization

5 projects, Storage + Solar

$12.5M in grant funds
CEF2 Grid Modernization

**CEF2 Grid Modernization**

- **Solar Energy Storage**
  - **$1 Million**
  - Installing energy storage and battery controls to complement their deployed community solar with the intent to extend the life of the islands underwater electricity supply cable.

- **Richland Solar Energy Storage**
  - **$3 Million**
  - The City of Richland, IBEW Local 77, Quanta Services/Potlco, and the UW Clean Energy Institute to create a training facility to prepare workers clean energy jobs.

- **Arlington Microgrid**
  - **$3.5 Million**
  - Will combine battery storage with micro-grid and solar technologies to manage their electric vehicle fleet.

- **Solar Microgrid**
  - **$1.5 Million**
  - Create a solar-powered microgrid at a local emergency shelter. This stand-alone power grid will keep fire stations, community centers and communication networks operating during emergencies.

- **Spokane Micro-Transactive Grid**
  - **$3.5 Million**
  - Is piloting a shared energy economy model in Spokane that allows various energy assets to be used for multiple purposes, including system efficiency and grid resiliency.
CEF 3 – Several Programs in Development

- Round 1: 2013 - 14, $36 million
- Round 2: 2015 - 16, $40 million
- Round 3: 2017-18, $46 million
CEF3 – Grid Modernization

• Phase 1 – 11 Concepts submitted in Nov. 2018.
• Phase 2 – 5 Final submittals on Dec. 28, 2018
• Review, Selection & Notifications in February 2019
• Contract Negotiations during 2019
• Project Development and Design in 2020
• Buildout in 2021 & 2022
• Commissioning & Analytics by 2023
CEF3 – Grid Modernization

• Observations/Trends
  • More diverse range of energy storage technologies being combined with distributed generation assets
  • Increased customer interest in DERs
  • Several microgrids for resilience and transactive energy
  • Fewer use cases - more focused on longer duration ES
  • Four submittals evaluated. Three advanced into contract.
  • Contracts with Avista and PSE recently signed. Pending PR.
  • Third contract with OPALCO still in development.
Washington 2019 Clean Energy Legislation

• Jump to CETA slides
Thank you

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