Aggregated Demand Response Pilot Project

Overview

Aggregated Demand Response Pilot Project

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Energy Northwest
Aggregated Demand Response Pilot Project

• BPA solicitation for aggregated DR resource – March 2013
• Selection of EN team proposal – July 2013
• Project Agreement Complete – September 2014
• Energy Northwest DR Team
  • Energy Northwest (EN) as team lead and cost-based Aggregator
  • Public utilities – Washington, Idaho, Oregon (Public Utility Districts, Municipalities, Cooperatives)
  • Industry representatives
  • Engineering – Resource Associates International (RAI)
  • Technical advisor – Pacific Northwest National Laboratory (PNNL)
What is the Pilot?

• Aggregated resource assembled and operated by EN
• Up to 35 MW of “Fast INCs”
  • Fast – reduction accomplished within 10 minutes of notification
  • INCs – primarily load reductions
• BPA pays monthly fixed capacity reservation
  • EN in turn pays incentives to utilities/asset loads
  • No event or energy based compensation
  • Limits on calls and duration
  • Adjusted for performance
  • Monthly settlement; prepared by EN
Demand Response Aggregated Control System (DRACS)

- Key to Pilot’s functionality - communications, monitoring, logic, reporting, control, data management, security
- Available 24/7 to both Assets and host utilities; via any web-enabled device; in real time:
  - Asset load status anytime; load response during Events
  - Event notification and termination, detailed system status alerts
  - Detail and summary performance data downloads
- Compliant with federal cyber-security (FISMA) requirements
- RAI is the DRACS’ coding and deployment lead
- Hosted at PNNL’s Electricity Infrastructure Operations Center (EIOC)
City of Richland WA
Demand Voltage Reduction (DVR)

- (10) 115/13.8kV substations; (15) load tap changing transformers
- (71) distribution feeder voltage and load metering points
- Direct DRACS to SCADA connection
- Fixed voltage increments
North Pacific Paper Corporation (NORPAC)

- Served by Cowlitz County PUD
- Thermal-mechanical pulping
- (9) refiner lines
- (4) 5,000hp(+) motors per line

- Direct DRACS to facility DCS
- Event control signals in
- Real time meter data out
- Shuts down two refiner lines
Powin Energy Battery Energy Storage System

- Portable, self-contained, 968 lithium ion batteries
- Onboard communications, server/BMS, power electronics
- 120kW in/out
- 500kWh storage
- 480vAC 3-phase
- Very fast response
- Currently deployed in Tualatin OR
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• Timelines going forward...
  • Pilot resource placed in service early February 2015
  • (4) Events as of February 24th; all successful by significant margin
  • Initial Pilot term runs through January 2016
  • (2) 6-month optional term extensions, through January 2017

• Long Term Vision
  • Energy Northwest serving the region as a cost-based aggregator of services, offering multiple demand side based products
  • Public power focus – By Public Power, For Public Power
  • Governed by its participating public utilities/assets, similar in structure to EN’s Nine Canyon and Packwood generation projects
Contacts

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