

Aggregated Demand Response Pilot Project

Overview
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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)

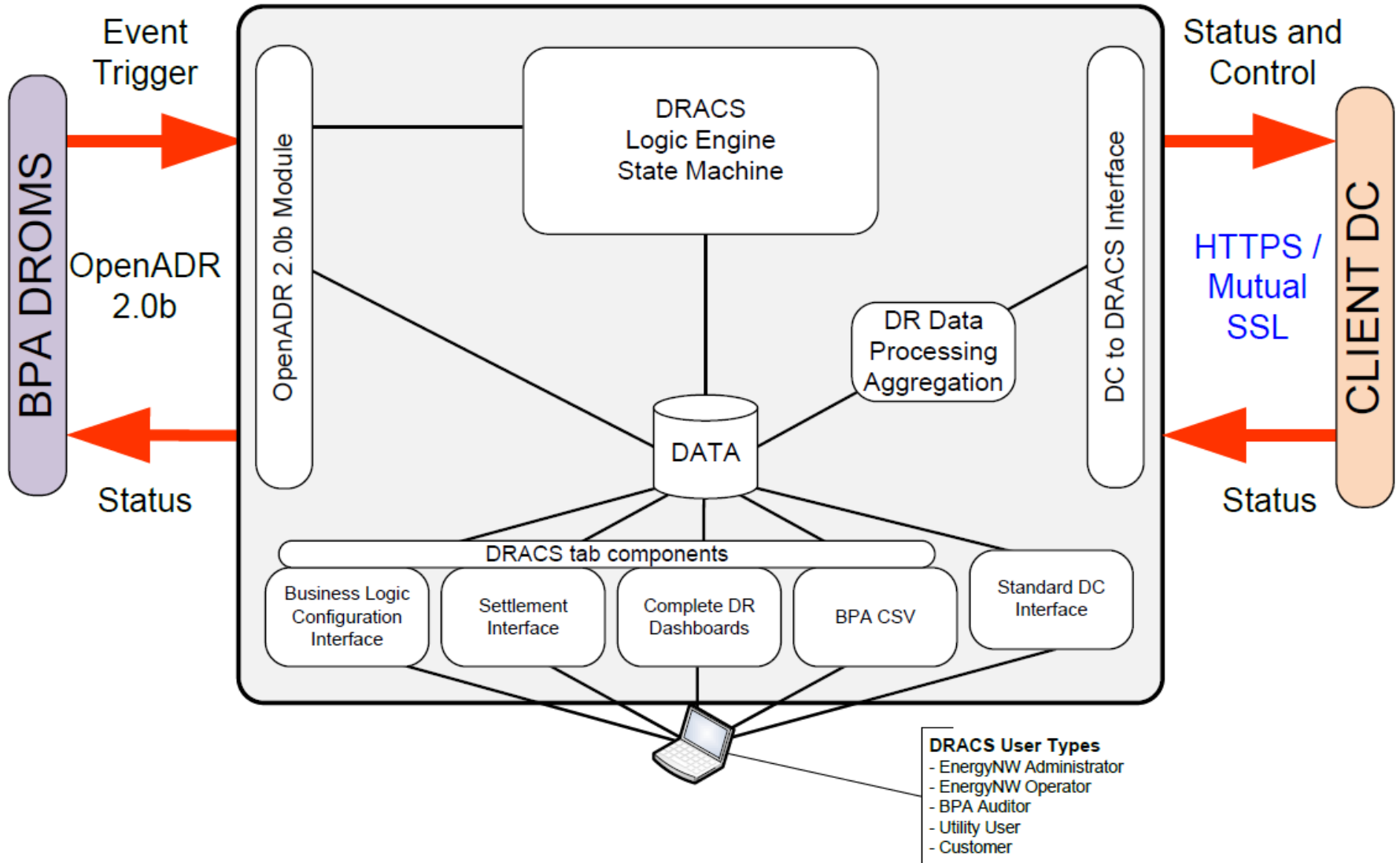
What is the Pilot?

- 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)

DRACS



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



Aggregated Demand Response Pilot Project

- 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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