

Aggregated Demand Response Pilot Project

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Demand Response as Balancing Resource

- **Conceptually, Change Loads Not Generation**
 - Reduced Load has Same Net Effect as an Increase in Generation (“INC”)
 - Allows Optimal Use of Generation Resources
 - Can Respond within 10 Minutes of Notification (“FAST”)
 - Distributed Response, Not Centralized
- **DR Resource – What’s Needed...**
 - Customer (BPA) - Integrated System Operator or Balancing Authority
 - Aggregator (EN) - Assembles Loads, Provides Resource to Customer
 - Loads or “DR Assets” (Utility Participants) - Provides Controlled Loads
- **Unique Structure – By Public Power, For Public Power**
 - Cost-Based Resource Aggregation Service; Not For-Profit

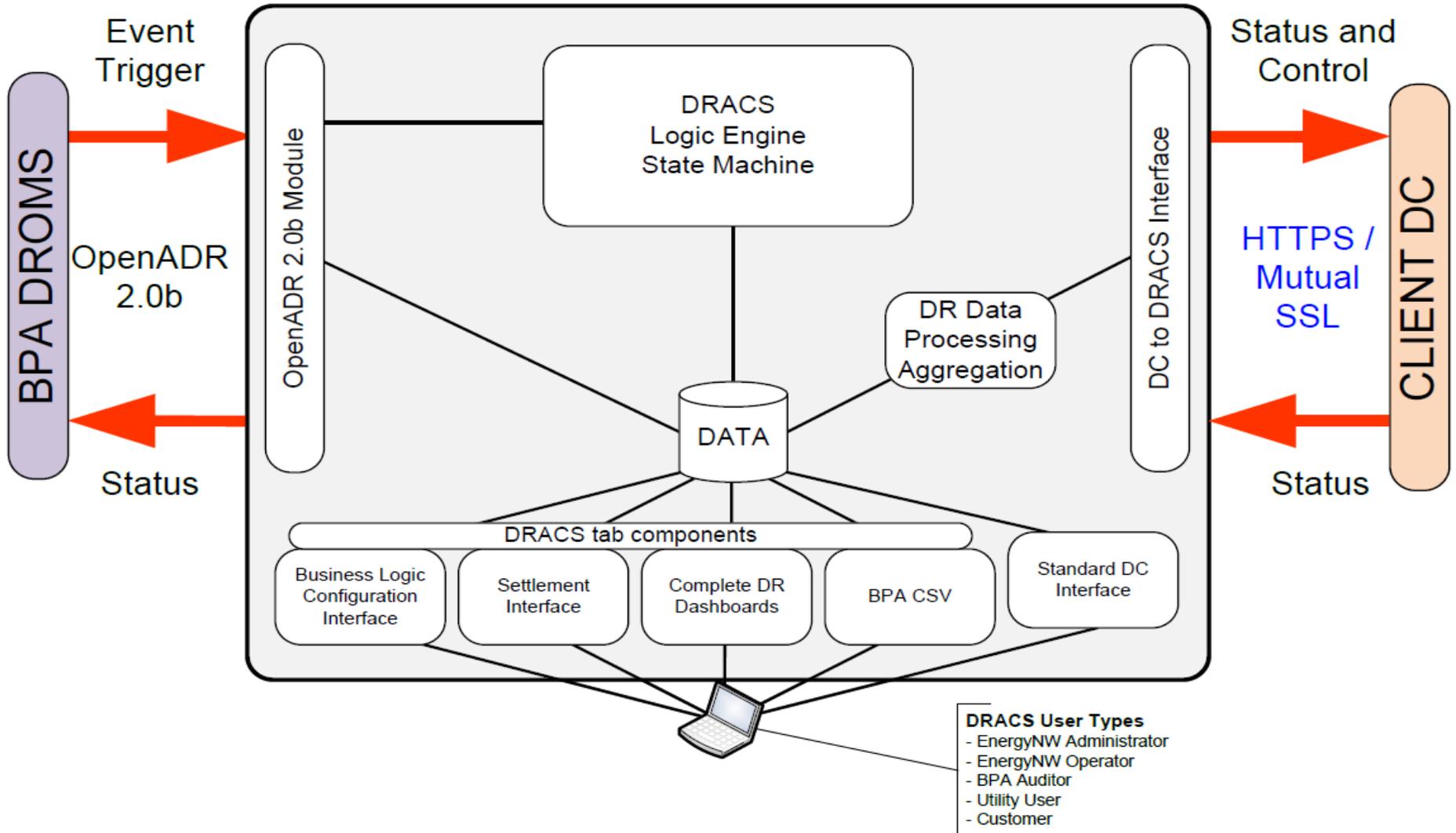
Pilot Project

- **BPA Solicitation for Aggregated DR Resource – March 2013**
- **Energy Northwest DR Team’s Proposal Selected – July 2013**
 - Energy Northwest as Team Lead and Aggregator
 - Public Utility Participants - Washington, Idaho, Oregon; Public Utility Districts, Municipalities, Cooperatives; Members and Non-Members
 - Technical Advisor - Pacific Northwest National Laboratory (PNNL)
 - Engineering/Deployment - Resource Associates International (RAI)
- **BPA/EN Project Agreement Complete – September 2014**
- **PNNL/EN Hosting Agreement Complete – October 2014**
- **Capacity-Based \$ Incentives; Limited Events and Duration**

Project DR Resource

- **DR Resource – Up to 25 megawatts (MW) of Fast INC Product**
- **Diverse Load Portfolio**
 - Utility - Demand Voltage Reduction (DVR)
 - Industrial - Mid-Size to Large; Sawmills, Pulp Mills
 - Institutional/Light Industrial - Educational Campuses, Gravel Mining, Municipal Waste Water Treatment
 - Residential/Other - Water Heater Control Devices, Battery Storage
- **Demand Response Aggregated Control System (DRACS)**
 - Key to Functionality - Communications, Monitoring, Control, Reporting
 - Hosted within PNNL's Electricity Infrastructure Operations Center (EIOC)
 - Provides 24/7 Load Reporting to Loads and Utilities
 - Real-Time Alerts & Updates

DRACS



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- **Timelines...**

- EN/Participant Agreements - October & November 2014
- DRACS Design & Deployment - September thru December 2014
- System Integration & Testing - December 2015 thru Early January 2015
- Expected Resource In-Service - Late January 2015
- Project Runs thru January 2016; Options to Extend thru January 2017

- **Long Term Vision**

- Energy Northwest Serving as Cost-Based Aggregator of Multiple Demand Side Products; 100 MW (+)
- Governed by Public Utility Participants
- Influence Development of Regional Demand Response

Contacts

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