BPA Demand Response Pilot Projects

December 4\textsuperscript{th} Brown Bag

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Why is BPA Interested in Demand Response?

• Continued regional load growth is leading to a forecasted capacity shortage in ~2015.
• Wind integration, fish operations, and other operational constraints are limiting the flexibility of the hydro system to meet peak demand.
• Demand Response is a proven, low-cost resource, widely utilized in other regions to address peak demand.
Demand Response Guiding Principles

- **Collaboration & Partnership:** BPA will work collaboratively with our Public Utility Customers to develop and implement Demand Response pilots and programs.

- **Balance Cost and Risk:** BPA will work to implement the least-cost, least-risk DR solutions. However, BPA recognizes that this may frequently require trade-offs between these two goals.

- **Regional Leadership Role:** BPA will lead by example in the region, through information sharing, collaborative research efforts, and demonstrating state of the art technology. This includes integrating Demand Response into the Smart Grid.

- **Reliability & Flexibility:** BPA’s Demand Response resource will primarily aim to improve system reliability and enhance flexibility.

- **Environmental Stewardship:** BPA will consider the environmental impacts of each DR Option.
BPA Recent Activities in Demand Response

• Demand Response potential assessment and action plan.
  – Developed DR Supply Curves that will be inputs into the Resource Program
  – Identified Action Items for 2009-12

• Past Pilot Projects include:
  – Gridwise Olympic Peninsula Project (dynamic pricing)
  – Non-Wires Solutions Pilot (direct load control, back up generation)
  – Ashland Pilot (Direct Load Control)
  – Demand Exchange (Wholesale)
Potential DR Pilots

• FY 2009 Automated Direct Load Control
  – Employ state of the art technology and communications system to conduct demand response tests in the residential sector

• Dynamic Pricing Pilot
  – Understand how customers react to peak pricing signals.

• Emergency/Capacity Pilot
  – Working with large commercial/industrial customers to provide system capacity in critical or emergency events

• Wind Integration Pilot
  – Develop “Proof of Concept” for Demand Response as a tool in Wind Integration. This is in the very early stages of planning.
2009 Automated DLC Project Objectives

- Pilot how an automated notification system can be used in the residential sector for demand response. Evaluate the effectiveness of such a system.
- Determine how residential customers respond to demand response automation.
- Identify what type of DR shifting and shedding strategies can be automated in the residential sector using a “whole house” approach.
- Develop an accurate baseline measurement for automated residential winter-peak programs.
- Explore how automation of control strategies can increase participation rates in DR programs and events.
- Explore a “shared trigger” approach, allowing both the local utility and BPA to utilize DR to address both price and reliability issues.
- Understand the benefits of DR for hydro operations, especially the difference in the benefits for weather-induced peaks vs. emergency events.
- Understand the costs and benefits of participation from the owner’s perspective.
Questions for BPA?
BPA Questions for Utilities

• What types of DR projects are you considering? What timeframe are you thinking about for launch?
• Why do you believe demand response is important for your utility?
• What resources would you like BPA to provide (financial, technical, information, etc)