

# Demand Response in Washington State Programs and Issues

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- Setting the Stage
  - WA has “traditionally regulated” – vertically integrated utilities.
  - Key principle – WA utilities have statutory obligation to meet customer demand.
  - PNW region has a bilateral rather than a centralized market structure for wholesale power trading.
  - PNW – and WA in particular – is hydro-rich
    - Hydropower is flexible
    - We use hydropower flexibility to “follow-load”
    - Consequently, the cost of power has not varied a great deal between peak and off-peak periods
    - However, flexibility of the hydropower system is declining (fish management operations) and depends on the quality of the “water-year”
  - Less than half of the retail electricity load service in WA is regulated at the state level
  
- Implications for Demand Response Programs
  - Programs are utility specific – tailored to meet specific utility need.
  - Demand response is confined to the utility/customer relationship
    - Customers cannot sell “negawatts” in a “regional market” – only to their utility.
  - Value of demand response programs limited – moving load from peak to off-peak saves a little money, but not much.

- Puget Sound Energy time of use rate experiment in 2000-2002 did “shift load” (about 5 percent), but it produced little consumer or utility monetary benefit. (analysis and report is available)
- Main value is for long-term supply shortages (low water years, etc)
  - Effective in 2000/2001 drought years.
  - Programs/Tariffs “on the shelf” for use in next emergency. All of these except the PSE time-of-use program focused on energy savings, rather than load shifting.
  - Programs applied to industrial and commercial customers as well as residential customers.
    - PacifiCorp – 10% bill reduction for usage reduction of 10% from previous year. Effective July – September 2001. Savings = 29,037 MWH
    - PSE – 5 cents/kWh credit for usage reduction in excess of 10% over same month in previous year. May – November 2001. Savings = 350,945 MWH
    - Avista – 5 cents/kWh credit for each kWh saved beyond a 5% threshold of usage in same month previous year. Effective May 2001 – September 2001. Savings = 241,750 MWH (system)
    - PSE – Time-of-use rates. May 2001 – May 2002. Roughly 5% of load shifted to off-peak.
  - Recent experience: “Soft” programs including public calls for conservation work over short periods – July 24, 2006 episode example – Power Council estimates 130 MW of response in PNW region.

- Current WUTC policy on time of use rates and related meters
  - Time of use rates and related metering acceptable, but only if cost-effective.
  - Policy adopted in 1980 in response to PURPA.
  - Policy under review currently in response to PURPA standard 14 in 2005 Energy Policy Act.
  
- Given our circumstances, policy and experience with demand response programs our focus is on:
  - Smart-grid technologies – either automatic control of end-uses or utility ability to directly control end-uses.
    - Pacific Northwest Laboratory pilot programs with growing interest by utilities (the Grid Wise program)
    - More practical and reliable approach than reliance on consumer response to infrequent “price signals”
  
- At the level of the region our PNW Power Council has convened a regional working group to further examine Demand Response and its value for addressing the declining flexibility of the hydropower system.