Power System Flexibility

Summary of Council Staff Activities

The addition of large amounts of wind power to the Northwest electricity system has raised issues regarding power system flexibility. This topic has been identified for attention in the Council's upcoming Seventh Northwest Power Plan. Council Staff have already been pursuing a number of activities to address this issue.

Key Activities:

- Developed a new method for assessing power system flexibility requirements and an approach that allows resources with varying ramp rates to be combined to meet the overall flexibility requirement
- Communicating and gathering input on the new flexibility methodology
    - Presentation to the Pacific Northwest Utilities Conference Committee (PNUCC)
    - Workshop and panel presentations at the EUCI Fast and Flexible Resources Conference
    - Two 3-hour meetings with PGE staff to review their implementation of the CRDC approach
- Attending the BPA Ancillary and Control Area Services forum meetings to monitor the changes BPA is proposing to accommodate the need for increasing flexibility.
- Met with Avista about a model they are developing in part to optimize the allocation of resources to meet reserve and energy needs.

Flexibility Metric Roundtable

On May 2, 2013 the Council staff hosted a technical roundtable on flexibility metrics. Led by Ben Kujala and Michael Schilmoeller, the event brought together leaders in this field to compare approaches and discuss proposed changes and challenges. 34 representatives of utilities, regulators and researchers participated.

Discussion at the event included:

- BPA discussed the need to understand timing issues for short term power operations including how and when flexibility needs to be assessed. Using FCRPS daily requirement as an example they analyzed how flexibility fits into the operational picture. (Figure 1)
- Avista Utilities presented their experience with the Palouse wind project and balancing its variability with flexible hydro resources. They walked through an example day where wind speeds were high enough that the plant had cutout events taking it from near full output to close to zero output.
- To bridge the divide between research and practice, EPRI talked about work that they have done to help assess utilities' flexibility needs.
- University of Washington talked about their efforts to integrate flexibility into models and the challenges associated with flexibility metrics.

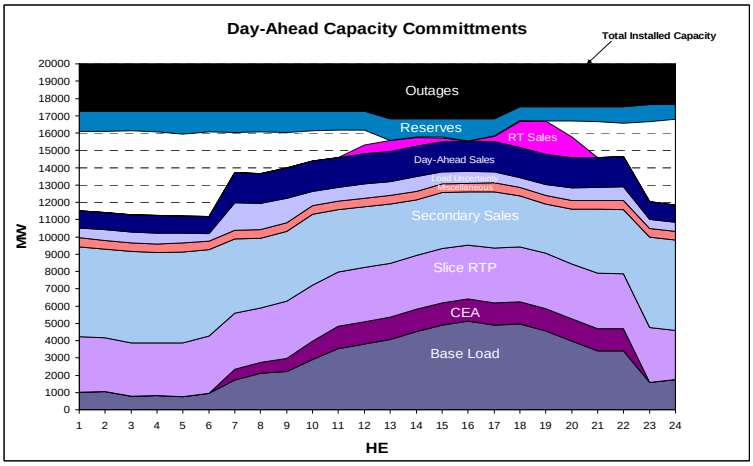

Figure 1 - Chart showing FCRPS daily requirement