Northwest Power and Conservation Council

December 12, 2006

MEMORANDUM

TO: Power Committee Members

FROM: Wally Gibson, Manager, System Analysis and Generation
John Fazio, Senior System Analyst

SUBJECT: Recommendation on Resource Adequacy Pilot Capacity Standard

At its December meeting, the Council will vote to adopt a pilot capacity standard developed and unanimously approved by the Resource Adequacy Forum. The associated decision memo for this action is provided in the Council packet.

The pilot capacity standard is the third phase in developing a resource adequacy standard for the Northwest. This past May, the Council adopted an *energy standard* and just last month it adopted an *adequacy warning implementation plan*. The pilot capacity standard will be used to assess the adequacy of the power supply to provide electricity over peak load hours throughout the year. Like the energy standard, the capacity standard is comprised of a metric and a target. The capacity metric is defined as the surplus sustained peaking capability (in units of percent) and the winter and summer targets are 25 percent and 19 percent, respectively. The targets are made up of three components, an operating reserve, a reserve to cover adverse temperature and a planning adjustment reserve. The planning adjustment reserve is linked to a loss of load probability (LOLP) assessment. The targets are designed to yield a five percent LOLP (the current Council standard) when they are met.

Only the Bonneville Power Administration (BPA) provided written comments on the draft document (number 2006-18). A summary of BPA's comments are attached but generally it supports the adoption of this pilot capacity standard, while recognizing that much work lies ahead in terms of testing and confirming the standard. BPA did not recommend any specific text changes to the draft document.

After the release of the draft document, the Forum committees had an opportunity to "fine tune" the Forum work plan for 2007. In addition, the committees suggested that the definitions for *peak load hours* and *expected peak load* be made clearer. To accommodate that recommendation, the draft document was slightly modified. The redlined version of the draft document (in the Council packet) includes the committee wording adjustment and the changes to the work plan.

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Attachment A

Summary of Comments from the Bonneville Power Administration

In general, the BPA supports the adoption of this pilot capacity standard for the Northwest. BPA did not recommend any changes to the text in the draft document. However, it emphasized the magnitude and critical nature of the work that is yet to be done to validate the pilot standard. Many of BPA's comments regarding the testing and confirmation of the standard were echoed by the Forum committees. Most if not all of this work is identified in the revised Forum work plan, which is provided as an attachment to the redlined version of the pilot capacity standard document. A summary of BPA's comments follows.

- A method to translate the regional capacity targets into utility specific targets must be developed.
- Common resource and demand reporting protocols must be adopted.
- The definitions for both *energy* and *capacity* curtailment events must be reexamined. This includes a reassessment of any thresholds used to count "bad" seasons. Also, a capacity event should be more in line with the definition for the capacity metric, that is, a curtailment over a sustained period instead of a single hour.
- An analysis to evaluate the tradeoffs between target levels and cost should be done.
- The GENESYS model must be benchmarked.
- Assumptions regarding available out-of-region market supply must be reexamined and confirmed.
- The LOLP assessment should be performed over all months of the year, not just winter and summer months.
- The use of hydro flexibility should be reexamined and clearly defined. It should be confirmed that using hydro flexibility would not unduly curtail fish and wildlife operations.
- Calibration of the model should include assurances for all future years that meeting the energy and capacity targets will yield the desired LOLP level.
- BPA questions whether an *annual* review of energy and capacity targets is an appropriate time period to provide for stable resource planning.
- BPA would prefer using a *non-critical water* approach to defining the energy and capacity metrics as opposed to adding a "planning adjustment." BPA believes that using an adverse hydro approach would make the translation of a regional target into a utility specific target much easier.
- The "building block" approach to developing the capacity targets may be inappropriate in the sense that the operating reserve margin is specifically set for single-hour durations while the other components cover a sustained period. This should be reassessed.
- A clear definition of how to assess sustained hydro capability is needed.
- The definition of the sustained peak period must be reexamined for both winter and summer period.

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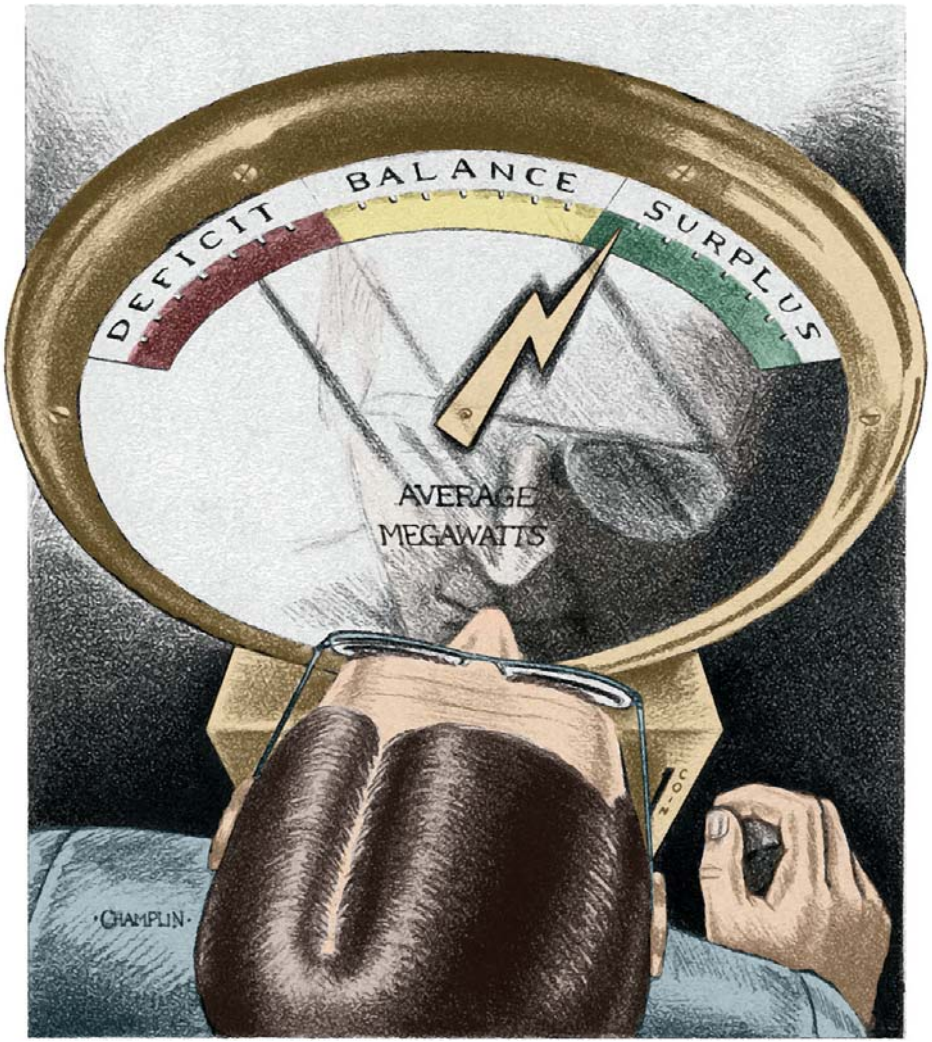

Pilot Capacity Standard

Power Committee

Portland, OR

December 12, 2006

Northwest Power and Conservation Council

Proposed Capacity Metric

- Surplus generating capacity
- over the expected peak load,
- over the peak load duration period,
- in units of percent, also referred to as the *Surplus Sustained Peaking Capability* or the *Planning Reserve Margin (PRM)*

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Capacity Target Components

- A portion to cover operating reserves
- A planning adjustment reserve
- A portion to cover adverse temperature

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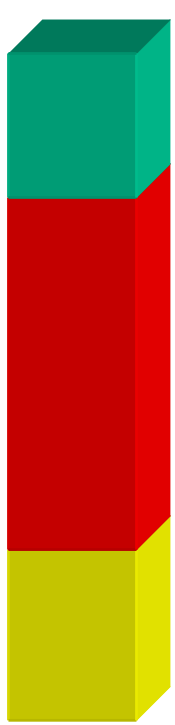
Proposed Winter Capacity Target

Target: 25%



4% for
Planning adjustment reserves

15% for
Adverse temperature reserves

6% for
Operating reserves

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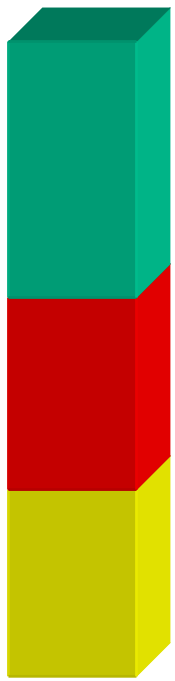
Proposed Summer Capacity Target

Target: 19%



7% for
Planning adjustment reserves

6% for
Adverse temperature reserves

6% for
Operating reserves

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Summary of Comments

- BPA supports the pilot capacity standard
- Develop data reporting standards
- Validate the analytical models and input assumptions
- Reassess the appropriateness of the targets
- Develop a more useful “translation” for individual utilities

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Assessment of the Capacity Reserve Margin

Op Year 2007	**Winter**	**Summer**
Current	41%	28%
@ Energy Limit	27%	**13%**
Target	25%	19%