

DRAFT – Version 5

July 28, 2006

A Proposed Pilot Capacity Standard for the Pacific Northwest

The Pacific Northwest Resource Adequacy Forum¹ (Forum) has developed a pilot regional capacity standard (to be used in conjunction with the previously adopted energy standard) for guidance in long-term resource planning. The Forum recommends that the Northwest Power and Conservation Council (Council) adopt this pilot standard as an interim guide for regional entities to use in their planning efforts with the understanding that the Forum will test and refine the standard and propose a final standard within a year. The Forum also recommends that this interim regional standard be submitted to the Western Electricity Coordinating Council (WECC) to order to inform WECC's ongoing process to develop West-wide adequacy standards.

The term “standard” in this context does not mean mandatory compliance nor does it imply an enforcement mechanism. Rather, it is meant to be a gauge used to assess whether the Northwest power supply is adequate in a physical sense, that is, in terms of “keeping the lights on.” It can be thought of as the minimum threshold for resource acquisition.

The regional resource adequacy standard consists of a metric (something that can be measured) and a target (an acceptable value for that metric) for both energy and capacity capabilities of the system. One of these targets will be the limiting constraint for a region or sub-region in the West. For the Northwest, the energy target is most likely the limiting factor. Therefore, the Forum is comfortable recommending an interim metric and target for the capacity capabilities of the region's power supply system.

The Forum believes that the form of the capacity metric and the value of the capacity targets presented in this paper are appropriate. As the pilot effort to test and refine the metric and target progresses, the underlying assumptions and capacity counting protocols for this regional capacity standard will be finalized. Within a year, the Forum will recommend the final regional capacity standard to the Council for adoption. However, even after the final standard is adopted, the intent is for this process to be dynamic. The Forum recommends that both the energy and capacity targets be re-evaluated on an annual basis to ensure that they continue to mark the threshold for an adequate Northwest power supply.

DRAFT – Version 5

The Pacific Northwest Regional Capacity Standard

The **capacity metric** for the Pacific Northwest² is defined to be the planning reserve margin (PRM), which is the surplus *generating capability over normal load* during the *peak load period* for each month³ (also referred to as the surplus sustained-peaking capability), in units of percent, where:

- *Generating capability* is defined as the sum of:
 - the peaking capability⁴ from all⁵ non-hydro resources⁶ (adjusting for fuel-supply limitations⁶ and/or environmental constraints and **not** counting resources on scheduled maintenance and **assuming that no resource is on forced-outage**) plus
 - the hydroelectric system peaking capability based on critical water⁸ conditions plus
 - a maximum of 3,000 megawatts per hour of available out-of-region spot market capacity over winter months and no spot market capacity over summer months.
- The *peak load period* is defined to be the 10 consecutive hours per day over 5 days that yield the highest average load under normal temperature conditions.
- *Normal load* is defined as the average load over the peak load period, based on average temperature conditions **and** is adjusted for firm out-of-region energy contract sales and purchases.

The **pilot capacity target** for the Pacific Northwest is 21 percent for January and 15 percent for July. The generating capability of the power supply in these months should be at least this much higher than the average normal load over the peak duration hours of the day. The capacity targets are comprised of:

- 6 percent⁹ to cover contingency and supplemental reserve requirements, and
- 15 percent in January to cover the load increase arising from a one-in-twenty year temperature deviation from normal and,
- 9 percent in July to cover the load increase arising from a one-in-twenty year temperature deviation from normal.

DRAFT – Version 5

Endnotes

1. The Pacific Northwest Resource Adequacy Forum was created in response to action items ADQ-1 and ADQ-2 in the Council's 5th Power Plan (see www.nwcouncil.org).
2. The Pacific Northwest is defined to be the geographical area referenced in the 1980 Northwest Power Act, which includes the states of Oregon, Washington, Idaho and the western part of Montana.
3. The pilot capacity standard is in the form of a planning reserve margin (PRM), which can be calculated for every month. However, only the most critical month in winter and in summer are needed for resource planning purposes.
4. Peaking capability is the maximum sustained peaking capacity associated with the peak load period adjusted for fuel limitations or other operating constraints. For out-of-region resources, the peaking capability should be that portion of the resource that is contracted to serve regional loads. The Council's Natural Gas Advisory Committee will evaluate whether sufficient gas supply and transportation capacity is available to allow for counting the full peaking capability of the region's gas-fired power plants to meeting monthly or seasonal PRMs.
5. The net peaking capability (capability minus firm out-of-region contracts) of independent power producer (IPP) resources is included in the assessment as a separate line item. The Council will review IPP resource status annually.
6. This refers to resources that are committed to serve regional load, whether or not they are physically located in the region.
7. Assumptions regarding the peaking capability of wind resources are yet to be defined. The Forum continues its work in this area.
8. For the region, under current operating constraints (including actions listed in NOAA Fisheries' biological opinion), the critical water year is defined by the hydrologic conditions from August 1936 through July 1937.
9. The 6 percent contingency and supplemental reserve requirement is an average for the region. The requirement calls for a 5 percent reserve for hydroelectric generation and a 7 percent reserve for thermal generation. The region's firm energy supply is almost equally divided between hydroelectric and thermal generation, thus the 6 percent average.