PNW Resource Adequacy Forum

Description of Proposed Resource Adequacy Implementation Approach

INTRODUCTON

Steering Committee Principles

The Steering Committee set out four principles early in its deliberation. The last three of the four dealt with application of regional resource adequacy metrics and targets to individual utilities:

- We should develop mechanisms to assess whether regional resource adequacy metrics and targets are met.
    - One mechanism is a reporting process to get data from individual load serving entities for regional assessments.
    - This allows region-wide transparency and allows individual utilities to assess themselves with respect to their position in the Region.
- There should be some mechanism reasonably to assure that the regional metrics and targets will be met going forward.
- Don't trample on the jurisdiction of states or prerogatives of individual utilities in planning and acquiring resources to meet load.

Successful implementation of the proposed approach assumes that the PNW Resource Adequacy Forum (Forum) has reached agreement on both energy and capacity metrics and targets that are deemed to satisfy an acceptable loss-of-load probability target on a regional basis.

PROPOSED APPROACH

Regional Awareness of Resource Adequacy Framework: There are a number of national, west-wide, regional and state efforts currently underway, which have thrust resource adequacy into the limelight. The Energy Policy Act of 2005 mandates the Electric Reliability Organization (ERO), established by the act to implement mandatory reliability standards for the bulk-power system under the purview of the Federal Energy Regulatory Commission (FERC), "to conduct periodic assessments of the reliability and adequacy of the bulk-power system in North America." The North American Electric Reliability Council (NERC), the ERO heir apparent, is in the process of developing a standard for resource adequacy assessments. FERC said in its final rule on implementation of the ERO provisions of the legislation that it intends to require the ERO to make recommendations where entities are found to have inadequate resources following the assessments.

In the West, the Western Electricity Coordinating Council (WECC) is developing guidelines to recommend appropriate methodologies for assessing resource adequacy.

Although the NERC and WECC efforts act as drivers, momentum is also building within the region for a regional resource adequacy standard through the Forum and the resurgence of Integrated Resource Plans (IRPs). In fact, the state of Washington recently passed legislation requiring all large electric utilities, both public and private, to prepare IRPs. Utilities, state regulators and the elected boards of public utilities are all explicitly examining strategies for planning resources to meet load. The efforts described above, the active participation by the utility and state regulatory communities in the Forum and the adoption of an energy metric and target for the region by the Council all serve to elevate the electricity industry's awareness of the regional standard, which is the first step to achieving resource adequacy.

Reporting: Utilities, other than those that have chosen in advance to put their entire load on Bonneville, would report their load and resource forecasts annually to some regional entity. Bonneville would report for all the utilities that have chosen it as their ongoing resource supplier. Currently the utilities with responsibility for procuring resources to meet their load obligation report their forecasted loads and resources to PNUCC. This approach proposes to continue using PNUCC and the its Northwest Regional Forecast (NRF) as the vehicles for reporting. Aside from refinements in data definitions, this reporting process would involve little change from current practice, except for those utilities that are newly-assuming independent resource procurement responsibility. The NRF currently uses a five-year planning horizon, which would be maintained for this purpose. Reporting is central to the proposed implementation process and relies on full participation by the utilities, their regulators and local boards, and Bonneville.

Assessment: The results of this reporting would be used in an assessment, in which the regional totals would be checked against the regional energy and capacity metrics and targets. This assessment would be done in the first instance by PNUCC. The assessment for the planning year, tentatively three years out, would be of most consequence for the region. The results of this "bottoms-up" assessment could then be compared with the Council's "top-down" regional assessment in order to validate the assessments, or, in the case of discrepancies, either inform quality control checks of the data to further refine the assessments in the future or highlight differences in assumptions. Some differences in assumptions e.g., about capacity factors of wind generation, might provoke additional research, while others could be the result of policy or regulatory decisions.

Issue for Resolution: Currently, there is some standardization in the reporting to PNUCC, but parts of the data are left to the discretion of the reporting utility. Some examples of this mixture follow. Capacity factors for plants are at the discretion of the utility. The load forecasts are based on whatever underlying economic and demographic factors the utility thinks appropriate, but are requested to be expected values based on normal weather. The hydro system output is independently calculated for the NRF and thus consistent across the region, though the critical year for the system as a whole is not necessarily the value used by individual utilities for their own planning.

One approach to the question of consistency is, as suggested above, to have both the PNUCC assessment as currently done and the separate Council assessment. This would

recognize that these kinds of differences exist and ensure a consistent regional approach, while recognizing potentially different regulatory and other requirements, as well as different reasonable assumptions that might apply to individual utilities. Differences between individual utilities and the Council, for instance in expectations about wind capacity factors, could also be addressed by the Council looking at several scenarios.

An alternative approach would be to make a stronger effort to standardize and enforce data reporting protocols for the NRF submissions, which would allow the PNUCC and Council assessments to begin closer together than might otherwise be the case, or potentially be identical, depending on the degree of standardization.

The direction chosen by the Steering Committee will influence the further development of the reporting and assessment process.

At this stage, the results of the assessment(s) would be depicted on an aggregated basis, as is currently done in the NRF. Utilities would be able to compare their resource strategies for meeting load obligations to the regional resource adequacy situation and adjust their plans accordingly. The regional assessment(s) would include the "planning adjustment" (market purchases plus hydro flexibility) and the regional uncontracted IPP generation in the regional totals, as described in the energy metric and target adopted by the Council.

Highlighting how much the region is relying on the external spot market or on uncommitted regional IPP generation, compared to the amounts included in the currently proposed standard would provide a kind of warning signal to the region about potential upcoming adequacy problems.

If the assessment shows that the region appears to be meeting the targets for the planning year, nothing more would need to be done. If the assessment indicates that that region as a whole is falling below the targets, individual utilities that are disproportionately relying on the market would be highlighted. "Falling below the targets" would most likely show up in this assessment as more net reliance on the out-of-region market, by the aggregate of the utilities, than is contemplated in the regional target.

[A detailed example will described at the Steering Committee meeting and will be added to the final version of the paper.]

Indicators of Resource Adequacy Levels: The description above implies a single indicator for the region, either "adequate" or "not adequate" compared to the target adopted by the Council. There could be additional indicators that would provide more gradation as the region approaches potential problems. The section below describes a potential more-elaborate "green light, yellow light, red light" approach to regional adequacy assessment.

The red light would be triggered by a comparison such as that described above when the region falls below the target adopted by the Council.

A yellow light early warning could be triggered by comparison to a metric that provides more resources than simply enough to avoid loss of load. The Council's economic target developed in the Fifth Power Plan provides one such metric. Developed by analyzing the exposure of the Northwest power system to a large variety of risks, including the risk of high market prices, such as were experienced in 2000-01, this target would give the region approximately an additional 3,000 MW of resources, above the level that would be developed pursuant to the target adopted in the adequacy standard.

An alternative economic standard could be to trigger the yellow light when the region as a whole begins to show reliance on the extra-regional spot market and the uncontracted IPP generation within the region.

The green light would be for all other situations.

The yellow and red lights could be used to trigger different regional actions. This proposal recommends that, since the yellow light would indicate a kind of early warning, a simple regional report would be sufficient. For the red light, more detail, including the highlighting of individual utilities described above would be appropriate. Highlighting means identifying and reporting on individual utilities that show disproportionate reliance on market resources (both in-regional and extra-regional). Individual circumstances would need to be taken account of in this report, as well. Beyond the report, there may be additional actions triggered by the red light that could be taken to highlight the seriousness of the situation, for example, a regional conference.

While this would not necessarily lead to further resource acquisition action, it would make clear the utilities that are deliberately going short in a time frame when the region as a whole appears likely to be resource deficient according to the established metrics and targets.

What happens if a problem shows up in actual operations?: Because of the variation in water conditions the Northwest experiences, prospective (planning) inadequacy will not necessarily turn into inadequacy in actual operations. However, should the region be inadequate on a near-term planning basis (too short a timeline for construction of new resources), utilities that are short, for whatever reason, would face the market price and any environmental mitigation consequences of their actions.

Bonneville expects to negotiate contracts with its public agency customers that will provide that customers either make an election to (1) purchase load-following power products from BPA or (2) take fixed amounts of power that do not follow load. Once a customer's load is forecasted to exceed their entitlement to power at the Tier 1 rate on a three year out basis, the customer needs to decide whether to procure their own resources to meet their load growth, or to contract for power from Bonneville at the Tier 2 rate. Contracting for Tier 2 power would include a three-year notice requirement. The contracts would also include affirmation by the customers that they understand their resource adequacy obligations and that Bonneville would not provide short-term backup

service. In addition, the contracts would include a load and resource reporting requirement. The details of this relationship (amounts of power to be provided by Bonneville, etc.) will have to be worked out in the contract discussions between Bonneville and its power customers.

It is also important to remember that, just as conditions could turn out in an operating year to be better than expected, they could also turn out to be worse. The planning metrics and targets are established based on a five percent LOLP, which means that they are not intended to protect against all possible outcomes. There will be some circumstances in which, even if utilities meet the planning criteria, they could face high market prices or even potential load curtailments.
