Northwest Power and Conservation Council

April 25, 2006

MEMORANDUM

TO: Council Members

FROM: Terry Morlan, Director, Power Planning Division
Wally Gibson, Manager, System Analysis and Generation
John Fazio, Senior System Analyst

SUBJECT: Adoption of a Resource Adequacy Standard for the Northwest

At its May meeting, the Council will vote whether to adopt the proposed resource adequacy standard for the Pacific Northwest. The standard was released in an issue paper (document number 2006-01) for public comment in February. The adequacy standard represents the partial completion of the 5th power plan's action items ADQ-1 and ADQ-2. The standard is the result of many months of effort by the Northwest Resource Adequacy Forum (Forum).

Based on comments received, the original issue paper will be modified (in red-line) by the Forum's steering committee on Friday, April 28th. Since the steering committee is meeting after the packet deadline, the amended issue paper will not be available for Council review until Monday, May 1st. The redlined version will also include a revised cover letter.

Most commenters expressed support for the adoption of this standard. The most substantive comments were to; 1) delay this process, 2) not call this a "standard" because that would imply regulatory oversight, 3) add an "economic" target and 4) avoid translating the regional standard into utility level standards.

It should be noted that the capacity component of this standard is still being developed and should be ready for release by August. At that time the Council will again vote whether to release an issue paper describing the standard and, after public comment, vote whether to adopt that portion of the standard.

Attachments to this memo include; 1) the original issue paper, 2) a draft summary of comments and response to those comments and 3) the Council decision memo for adoption of this standard.

q:\tm\council mtgs\may 06\51006 ra cover final.doc

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

Northwest Power and Conservation Council

February 22, 2006

A Resource Adequacy Standard For the Pacific Northwest

Issue Paper

Council Document 2006-01

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

A Resource Adequacy Standard for the Pacific Northwest

Developed by the
Pacific Northwest Resource Adequacy Forum
January 24, 2006

The Pacific Northwest Resource Adequacy Forum[1] (Forum) recommends the following standard be used for guidance in long-term regional resource planning efforts. Further, the Forum recommends that this standard be submitted to the Western Electricity Coordinating Council (WECC) for inclusion in its development of 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 defined 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 also be thought of as a threshold that indicates a need for resource-acquisition actions.

The 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. Generally, only one of these targets will provide the limiting constraint for a region or sub-region in the West. For the Northwest, the energy target is most likely the limiting factor.

There remain a number of important and still unresolved issues regarding this recommendation.[2] However, the Forum believes that the form of the energy and capacity metrics and targets presented in this paper is appropriate. As issues are resolved and as new information is made available, underlying assumptions for both the energy and capacity standards will be updated. In fact, the intent is for this process to be dynamic, and the Forum recommends that an assessment of the region's resource adequacy be made at least once per year. Details regarding the counting of resources and loads will be developed by the committee and presented in a future paper.

Energy

The **energy metric** for the Northwest[3] is defined to be the annual average load/resource balance in units of energy (average megawatts)[4], where:

- The load/resource balance is defined as the available average annual energy minus the average annual firm load.
- The resource available is the average annual energy and is defined as the sum of:

[1] The Pacific Northwest Resource Adequacy Forum arose from action items ADQ-1 and ADQ-2 in the Council's Fifth Power Plan (see www.nwcouncil.org).
[2] In particular, regarding the capacity metric and target.
[3] The 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.
[4] One average megawatt is equivalent to 8,760 megawatt-hours of energy.

    - the energy capability[5] from all[6] non-hydro resources[7] (accounting for maintenance and forced-outage rates and limited by fuel-supply constraints[8] and/or environmental constraints) plus
    - the hydroelectric-system energy based on critical water[9] conditions plus
    - 1,500 average megawatts of "planning-adjustment" energy,[10] which is derived from the currently used[11] 5 percent loss-of-load probability (LOLP) standard.
- The average annual firm load[12] is based on average temperature conditions and is adjusted for firm out-of-region energy contract sales and purchases.

The **energy target** for the Northwest is zero[13], that is, on an annual basis; resources (as defined above) should at least match the expected annual load.

---

[5] For in-region resources, the energy capability should be the maximum dispatchable energy adjusted for maintenance and forced outage rates. For out-of-region resources, the contracted amount of energy should be counted.

[6] The net annual average energy capability (energy capability minus firm out-of-region contracts) of independent power producer (IPP) resources is included in the assessment as a separate line item. IPP resource status will be reviewed annually with Council's Natural Gas Advisory Committee, focusing particularly on gas supply and transportation capacity issues.

[7] This refers to resources that are committed to serve regional load, whether or not they are physically located in the region.

[8] For wind resources, the historical annual average energy production should be used. If insufficient historical data is available, then a percentage (yet to be determined) of the nameplate rating will be used to calculate annual energy production. A similar method will be used for other renewable resources.

[9] 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. The annual average generation from all hydroelectric facilities in the U.S. (including independent projects and Idaho Power Company's projects) based on these water conditions is to be used in the load/resource balance calculation. Of course, this assumes that Idaho Power Company's load will be included in the tabulation of the average annual load. This is not intended to prejudice any decisions about net requirements in the Regional Dialogue discussions.

[10] The value used for "planning adjustment" energy is derived from the Genesys model and should be reassessed at least once a year or whenever new resource information is available. This factor represents an adjustment to be made to the load/resource balance so that when the balance is zero, the associated loss-of-load-probability (LOLP) will be 5 percent. The amount of planning adjustment energy depends on assessments of the availability of out-of-region resources, the amount of hydro flexibility energy available to system operators and on other factors. In the simulation, hydro flexibility energy is used when all other available resources have already been dispatched, including imports from other regions, and loads still are not met. Hydro flexibility energy is defined as that generation derived from drafting reservoirs below their biological opinion refill elevations (winter period) and if necessary below their critical rule curves. Hydro flexibility energy is used to cover needs over a period of hours or days. This type of operation is normal and does not require an "emergency" declaration under the biological opinion from BPA or the region. Hydro flexibility water is replaced as soon as possible and in the majority of cases does not affect refill targets. Hydro flexibility drafts are not intended to be used in lieu of providing an adequate resource supply. The value for out-of-region energy currently assumes an hourly market of 3,000 MW available to the Northwest in the winter season (December through March) only. This was judged to be reasonable for current use, based on recent Bonneville assessments of the status of generation in California. The regional "planning-adjustment" energy should not prejudice any individual utility resource-planning decisions.

[11] The Resource Adequacy Forum is also reviewing the 5 percent LOLP standard. Any change to this standard would translate into a different "planning-adjustment" energy value.

[12] Load is based on a medium forecast and includes all existing and planned conservation measures.

[13] This will yield a 5 percent LOLP in the Council's regional analysis.

Capacity

The **capacity metric** for the Northwest is defined to be the excess sustained-peaking capability[14] of the power supply over the peak-load hours, in units of percent, where:

- The sustained-peak duration is X hours per weekday (or Y hours total per week),
- the sustained-peak capability is shaped to match load, and
- peak load is defined to be the average load (based on normal temperatures) during the highest load week of the highest load month and includes reserve requirements and export commitments.

The **capacity target** for the Northwest is Z percent, that is, as a minimum; the sustained-peaking capability of the power supply should be at least Z percent higher than the sustained-peak period load. The Forum continues to make progress in defining the peak-duration period and the appropriate target for the capacity metric.

[14] The method of assessing the sustained-peaking capability is yet to be determined but could be in the form of an Excel worksheet or an hourly hydro-simulation computer model.

Northwest Power and Conservation Council

April 25, 2006

Response to Comments

For the Issue Paper Entitled
"Resource Adequacy Standard for the Pacific Northwest"
Document Number 2006-01

Public comments received for the Council's issue paper on resource adequacy are summarized below. In some cases, comments have been paraphrased (comments in their entirety can be accessed at http://www.nwcouncil.org/library/2006/2006-1.htm). Comments are organized into two categories; 1) supporting comments that require no response and 2) more substantive comments that require response. Entities providing comments are identified in parentheses (key is provided below).

Although the Council is using some of the procedural tools it employs when adopting or amending the Power Plan, this proceeding is not a rulemaking and will not result in an amendment to the plan. The Council is deciding whether to adopt the proposed resource adequacy standard for its own planning needs and as a guide for future regional resource development. That decision will represent the Council's best technical judgment, based on the work of the Pacific Northwest Resource Adequacy Forum, including input from a technical panel as well as public comment. The adoption of the proposed standard is intended to provide guidance to regional load serving entities and does not imply any regulatory control. The Council's decision will focus only on the energy component of the standard. The capacity portion is still being developed and will be presented to the Council for a decision later this year.

Key:

TP	Tacoma Power
BPA	Bonneville Power Administration
PNGC	Pacific Northwest Generating Cooperative
PNUCC	Pacific Northwest Utility Conference Committee
AV	Avista
ICNU	Industrial Customers of Northwest Utilities

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

Supporting Comments

- *The Council and BPA should be commended for spearheading this effort. (PNUCC, TP, ICNU, AV)*

- *The annual load/resource balance is the appropriate metric to use. (TP, BPA, PNUCC, PNGC)*

- *Linking the load/resource balance metric to a more sophisticated method of assessing adequacy is appropriate. (BPA, TP)*

- *An independent body, such as the Council, should do regional resource assessment. (AV)*

- *The Resource Adequacy Forum is a valuable public forum for utilities and others to openly discuss long term planning options. Assessments and reviews of the process should continue to be done in a public forum. (TP, AV)*

- *Independent Power Producer resource generation should be included in the load/resource balance assessment. (TP)*

- *The load/resource balance assessment should include out-of-region resources in some way. (TP)*

Substantive Comments

General

1. The adequacy targets should be evaluated often to make sure they remain relevant. (TP)

The metric (annual energy load/resource balance) and the planning target (zero) should not change over time. However, the "planning adjustment" line item used in the assessment of the load/resource balance should be evaluated often to make sure that it properly reflects current assumptions regarding the availability of out-of-region capacity and the use of hydro flexibility. The issue paper recognizes (footnote 10) that this element of the standard "should be reassessed at least once a year or whenever new resource information is available."

2. Resource adequacy should be assessed periodically. (PNGC)

This is stated explicitly in the issue paper on the first page in paragraph four, "The Forum recommends that an assessment of the region's resource adequacy be made at least once per year." This assessment should be made more often if changes occur in available resources or in forecast demand.

3. The Resource Adequacy Forum should acknowledge other actions currently being taken to ensure an adequate power supply for the Northwest. (PNUCC)

It should be well understood in the region that efforts provided by entities such as the PNUCC and BPA provide valuable information to power planners. This effort builds on that work.

4. The overall objective should be to assess physical resource adequacy, which would provide an early warning system for the region. (TP)

The Council agrees with this but in its Fifth Power Plan went further to also define an "economic" target that would minimize the likelihood of high cost future years.

5. It should be noted that each Load Serving Entity (LSE) is ultimately responsible to plan for its own resources. (PNGC, TP)

The Council agrees with this comment but adds that a regional assessment of resource adequacy can provide valuable information for each LSE.

6. The focus of this effort should be long term (3 to 20 years out). (PNGC)

The Council agrees that resource adequacy should be assessed on a long-term basis, in part because of the lead-times required for new resource and conservation program development. In its Fifth Power Plan, the Council provides a resource strategy for a twenty-year period but focuses on the actions for the first five years. This is due in part to the increase in uncertainty beyond the five-year period but also because the Council is mandated to revise its power plan at least every five years.

7. Definitions for counting existing and proposed resources should be absolutely clear. (PNGC)

This process is underway.

8. The economic benefits of resource adequacy should be assessed. (AV)

The Council agrees that the economic benefits of resource adequacy be assessed. The Council devoted a great part of its Fifth Power Plan to this issue, which does not need to be revisited in the development of this standard.

9. It should be acknowledged that utilities could meet their own adequacy targets in many different ways. In other words, this process should assess the adequacy status but not provide specific solutions. (AV)

The Council agrees with this statement, however, in its Fifth Power Plan the Council provides a regional resource strategy that should help guide utilities in the development of their own integrated resource plans.

Timing

10. It is important for the region to complete this effort in a timely manner. (BPA)

In a way, this effort is the result of the energy crisis of 2001. After that episode, it became clear that a more clearly defined adequacy standard was needed for the Northwest. Currently, by all

accounts, the Northwest is very surplus and has some time to address this issue. However, the WECC, under the jurisdiction of the recently passed energy bill, has the task of defining and assessing resource adequacy for the west-wide power system. That process has begun and it is critical that the metrics and targets used for the Northwest come from Northwest planners. Thus, it is important for this process to continue on schedule.

In addition, BPA intends to include this standard into its regional dialog and subsequent contracts with its customers. In order for this process to aid BPA it must be completed on schedule.

11. This process should be delayed until all metrics and targets are defined and until a meaningful translation for individual utilities is developed. (ICNU)

The Council disagrees with this suggestion. First of all, the energy metric and target is complete. No new information or policy decisions will alter the metric or the target. What may change is the "planning adjustment" line item, which is dependent on out-of-region spot market supplies and hydro flexibility. This line item will be reassessed periodically as conditions change. Other assumptions regarding non-firm resources, such as the IPP generators, can change over time. But should that happen, the "planning adjustment" line item would be appropriately altered so that the target could remain at zero.

There is no need to delay until all aspects of this effort are completed. The regional energy standard can be used immediately to assess the status of the region's power supply, which would provide important guidance to the Council and to the region. It should be passed on to the WECC for inclusion in their process. The Steering Committee is currently addressing an implementation mechanism to connect regional efforts with individual utility efforts that is based on the proposed regional standard. It doesn't seem wise to delay portions of this effort that could already provide insight.

12. Additional analysis and critique is necessary before the region should embrace this proposed energy standard. (PNUCC)

The Council agrees that benchmarking the analysis is important to achieving regional acceptance of the standard. However, the important aspects of this standard, namely that the metric will be an annual load/resource balance and that the target will be zero, have been generally accepted by the members of the Resource Adequacy Forum. As more analysis is done, factors such as the "planning adjustment" line item may be adjusted but the form and target should remain the same.

Also there is no reason to delay the adoption of the energy component of this standard until the capacity component is complete. The Northwest is and probably will continue to be an energy-limited region for some time. It is important for the region to also develop a capacity metric and target but it is unlikely that that component will soon be the critical factor with respect to resource expansion.

Non-firm Resources

13. IPP generation that is uncommitted could be "derated" by some level either in conjunction with or as an alternative to adding an economic target (see also Item 10) as a way to give

utilities an incentive to develop resources to a higher standard than just the proposed physical standard. (BPA)

IPP resources are not owned by load serving entities. Some of their output is contractually committed to serving either in-region or out-of-region load. The only portion of their generation that is not counted in the computation of the regional load/resource balance is generation contractually committed to serving out-of-region demand. Because IPP generation commitment could change over time, a suggestion was made to discount this generation. IPP generation can be considered market generation that resides within the region (although not all utilities may have transmission access to all IPP resources). The more IPP generation is contracted to out-of-region utilities, the less resource the Northwest region sees in its assessment of power supply. To this extent, it may be prudent to derate this generation over time. IPP status and fuel supply will be reassessed on a regular basis.

14. Footnotes 6 and 7 seem to contradict each other. Footnote 6 states that all non-hydro resources are to be included in the regional assessment. Footnote 7 states that IPP resources are included only to the extent they are committed to serve regional loads. (AV)

These two footnotes do not contradict each other but further explanation would make the intent clearer. Footnote 6 reads "The net annual average energy capability (energy capability minus firm out-of-region contracts) of independent power producer (IPP) resources is included in the assessment as a separate line item." Footnote 7 reads "This refers to resources that are committed to serve regional load, whether or not they are physically located in the region." Out-of-region resources that are owned by regional utilities or are contracted to provide regional energy are counted. IPP resources within the region are counted except for that portion of their output that is contracted to serve out-of-region loads.

15. The spot market should not be relied upon for resource adequacy assessment. (AV)

After contacting Avista staff for a clarification of this comment, it appears that Avista is not suggesting that we exclude the spot market when assessing the adequacy of the power supply. Some level of out-of-region supply should always be available for the region given that our peak season is winter and California's peak is in the summer. In the proposed metric, spot market energy is not listed as a line item in the load/resource balance calculation. Instead, the effects of the spot market appear in the "planning adjustment" line item, which is currently estimated to be 1,500 average megawatts. The magnitude of the planning adjustment comes from the more sophisticated loss of load probability assessment. Using a 1,500 average megawatt planning adjustment and planning to a zero load/resource balance yields a five percent loss of load probability, which is the Council's current standard for an adequate supply. The planning adjustment value accounts for the effects of the spot market and the effects of hydro flexibility (the ability to draft reservoirs below their rule curves for short periods of time during emergencies). Avista is concerned that individual utilities should not be overly dependant on spot market purchases in their integrated resource plans.

Impacts to Utilities

16. This process should not become a regulatory mechanism nor should it be construed as mandatory. (PNUCC, TP)

The term "standard" in this context does not mean mandatory compliance nor does it imply an enforcement mechanism. Rather, it is defined 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 also be thought of as a threshold that indicates a potential need for resource-acquisition actions. If the word "standard" is misleading, the Council could use the term "gauge" or similar term.

17. The regional metric should not be applied to individual utilities. (PNUCC)

The intent of this process is to produce a regional metric to assess whether the composite power supply is adequate. This is part of the mandate assigned to the Council. Should the composite system not be adequate, it becomes important to identify where the weaknesses are. Data provided by individual utilities within the region will be aggregated to produce a composite system assessment (a "bottom-up" approach). The composite assessment will be compared to a "top-down" assessment provided by taking a regional perspective. Differences between the two approaches should yield valuable information regarding planning assumptions, which should ultimately lead to more consistent resource planning across the region. In this sense, it is important for individual utilities to be able to "translate" the regional target into one that would be appropriate for their own planning efforts. This issue is still under consideration by the Forum but it does not detract from the value of a regional standard.

18. The process should only focus on reporting and not deal with consequences for utilities that do not "measure up." (PNGC)

The intent of this process is to develop a standard or gauge to assess the adequacy of the Northwest power supply. Individual utilities will develop their own integrated resource plans based on their own special needs and conditions. The function of the standard is to alert the region when the power supply becomes inadequate. The standard does not suggest what actions should be taken to improve the situation nor does it imply that "penalties" should be assigned to those utilities that don't measure up.

The Council's Fifth Power Plan provides a resource strategy for the region. That strategy was based on the Council's desire to develop a plan that minimizes the likelihood of high cost futures. This resource strategy is provided as a guideline for regional utilities.

Miscellaneous

19. An "economic" target could also be established either in conjunction with or as an alternative to derating uncommitted regional IPP generation as a way to give utilities an incentive to develop resources to a higher standard than just the proposed physical standard. (BPA)

The Resource Adequacy Forum discussed this issue at some length. It was decided to develop a "physical" target to represent the minimum acceptable level of resource development. This metric and target would be passed on to WECC for inclusion in their process. However, some Forum members thought it would be instructive to also estimate an "economic" target. The economic target, as defined by the Council's Fifth Power Plan, would minimize the likelihood of

high cost years (or the avoidance of price spikes). The economic target translates into a system with more resources than a system just meeting the physical limit. In general, the physical target is equivalent to a system with a five percent loss of load probability. A system meeting the economic target has a near zero loss of load probability. In terms of the load/resource balance, a system meeting the physical standard has a balance of zero (counting the 1,500 average megawatt planning adjustment) and a system meeting the economic standard will have a balance closer to 3,000 average megawatts. Using a tiered approach to resource adequacy may have some benefits. For example, a system with a balance greater that the economic limit should not require any reliance on external markets. A system with a balance less than the physical limit will require resource additions (which should include conservation and demand side management) in order to provide reliable service. A system whose balance lies in-between the two targets may or may not require additions depending on how important it is to avoid price spikes.

20. The "planning adjustment" line item for the load/resource balance does not make any sense. (PNGC)

The "planning adjustment" line item for the calculation of the load/resource balance can be difficult to understand. However, it is critical to include this value for a regional assessment of power supply. Leaving this value out of the assessment would lead to an extremely conservative and potentially costly power system. The planning adjustment includes not only the effects of an out-of-region spot market supply but also the benefits of hydro flexibility (the ability to draft reservoirs below their rule curves for short periods of time during emergencies). Leaving these effects out of the calculation would lead the region to overbuild its resources at significant cost.

21. More analysis regarding fuel supply should be done. (AV)

The Council agrees and work is underway to better assess the availability and price of fuel supplies.

Northwest Power and Conservation Council

May 10, 2006

DECISION MEMORANDUM

TO: Council Members

FROM: Terry Morlan, Director, Power Planning Division
Wally Gibson, Manager, System Analysis and Generation
John Fazio, Senior System Analyst

SUBJECT: Resource Adequacy Standard for the Northwest

PROPOSED ACTION: Accept the proposed changes to the Council's issue paper (document number 2006-01) and adopt the resource adequacy standard for the Pacific Northwest as described in the amended paper.

SIGNIFICANCE:

- Recent adoption of the energy bill gives the Federal Energy Regulatory Commission (FERC) authority to assess the adequacy of the nation's power supplies. We expect that the Western Electricity Coordinating Council (WECC) will be designated to assess the adequacy of the western power supply. We intend this proposed standard for the Pacific Northwest to be integrated into WECC's efforts.
- The Bonneville Power Administration (BPA) has been a joint sponsor of the Resource Adequacy Forum and intends to incorporate the standard in its Regional Dialogue and the ensuing contracts.
- The establishment of a regional resource adequacy standard will provide a consistent context to utilities, regulatory commissions and public utility boards in their assessment of individual utility resource plans.

BUDGETARY/ECONOMIC IMPACTS:

- There are minimal effects on the Council's budget. At this time, there is no indication that additional funds would be needed for contracting work or for advisory committee member travel expenses.
- The regional economic benefits of establishing a resource adequacy standard could be significant. Historically, the region has experienced periods of surplus and deficit energy supplies. Neither situation is desirable from an economic point of view. The

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

establishment of an adequacy standard will help minimize the number of times the region finds itself in a costly situation of too little or too much energy supply.

BACKGROUND:

Recent events such as the Western energy crisis of 2001, which led to both curtailments in California and to West-wide price spikes, have forced utilities and regulators to rethink their approach to planning and operating the power system. In that year, the Northwest experienced its second-lowest water year (based on historical records since 1929). Also, few new resources were developed during the late 1990s, leading to areas of resource deficiency throughout the West. Combined with a flawed electricity market design in California and apparent market manipulation, these factors led to the undesirable events of 2001. The Northwest is still recovering from the economic recession following that crisis.

The crisis demonstrated that the public has little tolerance for high and volatile market prices over a prolonged period. It also became clear that the financial community will not lend money for power-plant construction unless developers have power contracts in hand and/or utilities have included the costs of those contracts in their rates.

In an environment where an increasing number of parties will be taking on the responsibility for acquiring resources to serve regional load, a resource adequacy standard is key to ensuring overall regional sufficiency of resources to meet load at reasonable costs. The Pacific Northwest is unique, not only in the predominately hydroelectric nature of its resources, but also in the ratio of public utilities to investor-owned utilities (IOUs). Resource adequacy is more difficult to achieve in the Northwest for the following reasons:

- The ability to rely on wholesale electricity markets and surplus hydroelectric generation (in most years) can mask a condition of resource deficiency.
- The capital risk of constructing new resources in a market with substantially varying supply levels from year to year may be deemed too great for many developers.
- There is a continuing lack of clarity about the responsibility for resource acquisition among public utilities, BPA and independent power producers.

One way to alleviate the problem is to develop a regional resource adequacy standard and implementation framework. Such a standard would help utilities and their regulators gauge whether they have enough resources to meet their loads under a regionally accepted measure of generation sufficiency. A framework for implementing the standard would lay the foundation for those entities to plan for and acquire sufficient resources to meet load.

In its Fifth Power Plan, the Council recognized the importance of developing a resource adequacy standard and implementation framework. Action items ADQ-1 and ADQ-2 in the plan call for the establishment of resource information-gathering protocols and for the development of a resource adequacy standard for the Pacific Northwest. To achieve these goals, the Council and BPA instigated the Pacific Northwest Resource Adequacy Forum (Forum), with the intention that this group would develop a resource adequacy standard for the northwest.

ANALYSIS:

The Resource Adequacy Forum has been working on this task for the better part of a year. Analysis and documents, including meeting notes, are posted on the Council's web site at http://www.nwcouncil.org/energy/resource/Default.asp. The Forum is comprised of a technical work group and a policy steering committee.

The proposed 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. The standard is designed to be transparent and simple to understand. For the energy standard, an annual load/resource balance is proposed. The target for the load/resource balance is based on a more detailed and sophisticated analysis of the power system, which includes hourly as well as seasonal analysis. The standard is also expected to be flexible, in that the target will be adjusted as conditions in the energy markets change and as the region's ability to measure and analyze its capability improves.

For the capacity standard, a sustained-peaking capability is proposed. Work on establishing a target for this metric is ongoing but should not hinder the process of regional review for this recommendation. The relevant constraint for the region has been and still is annual energy, which gives us more time to develop a capacity target.

ALTERNATIVES:

- One alternative is to not adopt a Northwest resource adequacy standard. This means that the region would continue to develop resources without the benefit of an overarching strategy. The likely outcome of this alternative is a greater possibility of periods of over- or under-building for the needs of Northwest consumers. Quantifying the potential regional cost of this alternative is difficult but based on past experiences could be significant.
- A second alternative is to allow the WECC to establish a West-wide adequacy standard, which would also apply to the Northwest. The drawback to this alternative is that WECC has little or no expertise in planning for systems that are energy-limited (as opposed to capacity-limited regions such as California). The WECC standard would not likely address Northwest needs in an appropriate way.
- A third alternative is to delay the adoption of a Northwest resource adequacy standard until further review and analysis is complete. It may appear to be prudent to delay this process (because the region currently has a large resource surplus), however, delaying this decision could affect the WECC process of developing west-wide standards and it clearly will affect BPA's efforts in its regional dialog. It is acknowledged that more work is required to complete the capacity metric and target but the energy standard can be used immediately and should be passed on to the WECC for inclusion in their process. It doesn't seem wise to delay portions of this effort that already provides valuable insight.

ATTACHMENTS:

The recommended regional resource adequacy standard is presented in the attached paper. This recommendation was developed by the Pacific Northwest Resource Adequacy Forum and was unanimously agreed to by its steering committee. Modifications were made (in-red line) based on public comment received. Response to comments is also attached.
