

# Resource Adequacy Technical Committee Meeting

August 24, 2007 – 10:00 a.m. to 3:00 p.m.

## Notes

**PARTICIPANTS:** John Fazio and Wally Gibson (Council), Mary Johannis (BPA), Stefan Brown and Sylvia Melchiorri (PGE), Nicolas Garcia (WUTC), Greg Mendonca (PNGC), Villamer Gamponia (PSE), Chris Robinson (Tacoma), Rod Noteboom (Grant) and Shauna McReynolds (PNUCC)

**PHONE PARTICIPANTS:** Don Tinker (Seattle), Steve Weiss (NW Energy Coalition), Becky King (Chelan) and Howard Schwartz (CTED)

### I Resource Adequacy Forum Work Plan and Milestones

After introductions, John Fazio reviewed the work plan spreadsheet, which is broken down into weeks from August 2007 through June 2008. He noted that the decision items at today's meeting include:

- A recommendation to the Steering Committee regarding Economic Targets
- A decision on the duration of the sustained peaking period for the Final Capacity Adequacy Standard

John highlighted the coordination that needs to take place with WECC in the work plan. Wally Gibson mentioned the need for a meeting with the Northwest Power Pool (NWPP), the control area operators and NW utilities on the issue of how to derate hydro capacity in reporting loads and resources data to WECC.

### II Decide on Economic Target Options

John presented a PowerPoint on this topic. The committee discussion expanded the components of the economic adequacy definition to include planning:

- To "keep the lights on";
- To minimize the risk of high cost electricity futures;
- To minimize volatility; and
- To avoid impacting the average cost significantly.

Tail risk (a.k.a TVar90) is the parameter of most importance in assessing economic risk. The Council's model selects regional portfolios that minimize the TVar90 risk and plots them along the efficient frontier. In the Fifth Power Plan (Plan), the Council selected a portfolio intended to minimize both regional economic risk and cost, while "keeping the lights on." In contrast, the physical target associated with the adopted Energy Adequacy Standard is intended solely to "keep the lights on." Thus, the physical target is to the left of the Plan portfolio, which could constitute an economic target. When considering the adopted Energy Adequacy load/resource balance metric, the physical target is -1,500 aMW; in contrast, the Council's Fifth Power Plan economic target is +1,500 aMW--a difference of 3,000 aMW between

the physical and economic targets. Nicolas Garcia asked how the states' Renewable Portfolio Standards (RPS) would be reflected in the Council's Efficient Frontier portfolios. Could the intermittent nature of some of the RPS-mandated renewable resources adversely affect the goal to minimize economic risk? Mary Johannis suggested that a capacity analysis would need to be done to address that risk. Steve Weiss pointed out that the Council's Plan does include a significant amount of renewable resources.

John summarized options for economic targets including:

- The magnitude of resources associated with regional portfolios along the efficient frontier curve, as defined in the Council's Plan. One of these portfolios includes the Council-selected portfolio in the Plan. (Options 1a and 1b)
- The selection of a target based on an economic parameter other than TVar90. A suggestion to define such a target might be to base it on an evaluation of the impact of electricity prices associated with various economic targets on the Region's economy. Another suggestion for a parameter is to determine a value for lost load and select an economic target using a portfolio with a cost of electricity less than or equal to that value. **Action Item:** John will talk to Michael Schillmoeller to see how such a parameter could be incorporated into the risk equation. (Option 2)
- The use of the Region's current "firm" resource mix as the economic target, which means excluding uncontracted regional IPPs and the energy planning adjustment of 1,500 aMW from the target. (Option 3)

Wally noted that perhaps the economic target does need to factor in the type of generation added to the Region, given the impact of different types of resources on regional costs and risks.

Shauna McReynolds asked how the Region would fare next year under different options for economic targets. John stated that the Region would be "yellow" from an energy standpoint if the magnitude of resources associated with the Council's Plan was designated as the economic target. It would be in the "green" if the magnitude of the economic target was equivalent to the Region's firm resources.

The group suggested all the options be shown to Steering Committee. Chris Robinson suggested that Option 1b might be the recommended option because electricity landscape has changed in the Region with the institution of RPS and climate change mandates and policies. A number of the meeting participants echoed the thought that the Council has a tremendous body of work associated with Option 1, which should be used in choosing the Economic Targets. However, the group did not agree that Option 1a is the specific choice for the economic target because of the changed regional landscape and the lack of understanding by the Committee of the specific analytical foundation for the Council-selected Plan target. In particular, Rod Noteboom questioned the selection by the Council of the specific portfolio for the Plan because it does not appear to achieve more incremental benefits than incremental costs.

Mary Johannis suggested a capacity analysis be done to allow for an understanding of the planning reserve margin economic targets associated with options 1 and 3. Howard Schwartz suggested that it would not be easy to translate the economic targets to individual utility guidance. Don Tinker provided an example of Seattle's Integrated Resource Planning (IRP) methodology, which focuses on the economic risk associated with a TVar95 parameter. Therefore, it is clear that individual utility planning will deviate from regional resource adequacy assessments. The key is that the regional assessments are just indicators of potential generation deficiency problems. Mary stated that a "yellow" indicator may support individual utilities' IRP-related acquisition proposals in front of their regulators.

**Action Item:** John Fazio will provide information on the types of resources that comprise a number of portfolios along the efficient frontier to allow the Technical Committee to understand incremental costs and benefits and the capacity implications. With this type of quantitative information and analysis, the Technical Committee hopes to be able to recommend economic targets to the Steering Committee at its next meeting.

### **III PNW Hydro Sustained Peaking Capability**

#### **A Examples of the FCRPS sustained hydro capability**

Mary made a presentation to illustrate how BPA might assess its hydro sustained peaking capability. Mary emphasized that the methodology presented is tentative and is only meant for illustration. For the winter months, a six-hour-peak duration over three days is more meaningful for BPA than the 10-hour duration over five days because it can better assess the actual peak capacity needs of the Federal Columbia River Power System (FCRPS). In this example, the six hours are not consecutive with 5 hours in the morning and 1 in the afternoon.

A question came up about the Canadian entitlement. Mary said that the expected (i.e. temperature neutral) load line associated with winter 2010 level of development on slide 3 includes the Canadian entitlement but the historical hourly control area data used to simulate the hourly shaping did not include the entitlement load shape.

The argument Mary makes regarding the 10-hour duration is that planning resources to meet that does not necessarily mean that we could meet every hour's demand, that is, that the hydro system may not have the flexibility to meet the morning and afternoon peak hour loads. The hydro dispatch on slide 4 is not realistic, nor does it reflect how Genesys dispatches hydro. So, unfortunately, it is not a good illustration or test as to whether using a 10-hour duration would allow the system to meet single hour loads.

Mary suggested that Genesys could be used to determine what events (combined temperature and hydro conditions) should be used to define the 1-in-20 condition to use in BPA's illustrative example.

Wally asked what the constraints on hydro are for peaking purposes. Mary said that purchases could be made in the off peak hours to help. If the idea is to assess surplus capacity, then limiting purchases to just the off-peak hours may not be the best assumption since Genesys assumes up to 3,000 MW available in winter in ANY hour.

Mary suggested that using a 6-hour duration for winter has the added benefit in that the PRM calculated for the 6-hour duration is very close to the PRM calculated for a single hour duration, which would greatly facilitate reporting to WECC on hydro capacity.

Mary suggested that the 6-hour duration could be used year round. She also showed a summer example, when the load is not double-humped, but still the 6-hour duration covers the highest peak duration.

This method could be used to assess what BPA's PRM should be. Each utility's PRM will depend on its own resource mix, with hydro utilities probably needing a higher PRM.

Wally noted that to do this properly, we would have to add hydro maintenance. Mary state that the FCRPS capacity in these illustrative examples has already been decremented to reflect non-deferrable hydro maintenance.

Rod said they do their capacity assessment in a different way primarily because they have smaller ponds. So they have to be more careful as to how they meet peak loads. Sometimes non-power constraints drive the hydro operations and so would also drive the peaking capability.

Stefan asked how BPA decided on a three day period. Mary said that it is based on the usual duration of a cold snap or heat wave.

**Decision:** The Technical Committee decided to recommend to the Steering Committee the 6 hour over 3 day, i.e. an 18 hour duration for use in the Capacity Adequacy metric. The amount of peaking capability depends heavily on what actions you can take to increase generation, like more releases, etc. Genesys will be used to test this option. And, the decision can be changed in the future if need be.

**IV**     **Next meeting is on September 24<sup>th</sup>.**

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