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April 2, 2008

## MEMORANDUM

**TO:** Power Committee

**FROM:** Michael Schilmoeller, Senior Power Systems Analyst,  
Power Planning Division

**SUBJECT:** Preliminary Resource Analysis for the Sixth Power Plan

The Power Planning Division recently completed the exercise of assembling data required by the Regional Portfolio Model. Preparing and running the Model permitted staff to identify data coordination and consistency issues. This presentation summarizes our findings. No Committee decision or action is necessary.

This Preliminary Resource Analysis relies on preliminary assumptions about future energy loads in the Region, electricity and fuel prices, firm regional contracts, conservation potential, and resource development to meet requirements, including Renewable Portfolio Standards. These assumptions were discussed at the last Power Committee meeting in Boise.

The Regional Portfolio Model employed for this analysis is that developed for the Fifth Power Plan. The model produced a plan that is largely consistent with that which the Council adopted in 2004. Conservation and wind generation predominate over the study time period. The presentation will elaborate.

Staff wants to emphasize that this preliminary exercise should not be viewed as an indication of the results of the Sixth Power Plan. As the presentation will show, there is a lot of work to do before we get to that stage of the process. This was an exercise to develop model interfaces and test the effects preliminary assumptions might have had on the Fifth Power Plan results.

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# Preliminary Resource Assessment

Michael Schilmoeller  
Power Committee Presentation  
April 16, 2008

## Overview

- Background and purpose
- Preliminary model results
- Lessons learned
- Coming changes
- Next steps



## Background And Purpose

- You probably won't understand much of this. (We don't.)
- It's OK-it's all going to change
- Our purpose was to practice assembling input data and running the models
- The Council selects the preferred Resource Plan



3

## We Have Discussed

- Natural gas prices
- Electricity requirements and wholesale prices
- Possible CO<sub>2</sub> penalties
- Conservation program potential
- New generation added since release of the Fifth Power Plan and the current IPP-adjusted adequacy surplus
- Anticipated utility addition of 2000MWa after 2009 to meet renewable portfolio standards (RPS) over the next twenty years



4

## Items We Have Not Discussed

- The meaning of a “resource plan”
- Uncertainties about commodity prices, resource availability, requirements, changing technologies, legislation, and regulation.
- Objectives and risk measures
- The Regional Portfolio Model

5



## Preliminary Model Results

- Consistent with the recommended plan that came out of the Fifth Power Plan process
  - About the same amount of wind capacity additions, although most is forced in
  - Wind, other RPS resources, and conservation account for nearly all the capacity addition until 2023 (True for Fifth Power Plan until 2020)
- Some expected differences
  - Larger base of forced-in RPS resources
  - Approximately 600MWa more conservation, primarily discretionary, by the end of the 20-year study period
  - No Integrated, coal-Gasification Combined Cycle (IGCC) or coal units

6



## Lessons Learned

- Multiple, relatively uncoordinated power resource databases
- Load and conservation consistency issues
- Lack of familiarity with the data requirements of the Regional Portfolio Model

7



## Data Changes Are Coming

- Consideration of more resource expansion technologies
- More complete representations for demand response and conservation
- Development of uncertainties
- More realistic modeling of Renewable Energy Credits (RECs), production tax credits, CO2 penalties

8



## Model Changes Are Coming

- Construction cost uncertainty
- Dynamic retirement of plants
- Climate change modeling
- Better representation of wind integration costs and peaking requirements
- Adequacy and RPS standard constraints
- More representative modeling of CO2 penalties on power resource economics

9



## Next Steps

- Modeling enhancements are underway
- Staff is developing a database of existing and planned resources, with interfaces for Genesys, Aurora, the Regional Portfolio Model, and the public
- Staff is working on remaining data coordination issues
- The May Council meeting will begin the process of talking about resource planning under uncertainty and how risk modeling works.

10

