

W. Bill Booth  
Chair  
Idaho

James A. Yost  
Idaho

Tom Karier  
Washington

Dick Wallace  
Washington



Bruce A. Measure  
Vice-Chair  
Montana

Rhonda Whiting  
Montana

Melinda S. Eden  
Oregon

Joan M. Duker  
Oregon

April 2, 2009

## MEMORANDUM

**TO:** Power Committee

**FROM:** Michael Schilmoeller, Power Systems Analyst

**SUBJECT:** Current Regional Portfolio Model Results

This presentation will describe preliminary findings on resource strategies for the Draft Plan. Staff, however, will seek the guidance of Committee Members regarding the direction of study efforts.

The major finding, which seems likely to persist, is that energy efficiency continues to dominate alternatives from both cost and risk perspectives. Analysis indicates that the region should develop conservation at twice the rate envisioned under the Fifth Power Plan. Over 5,000 MWa, more than half the region's load growth, should be met with conservation if the region is to minimize the cost, risk, and carbon emissions of the power system.

Wind generation also retains the role it acquired in the Fifth Plan as a leading source of cost-risk mitigation. Wind and other renewables are present, however, implicitly in these results as Renewable Portfolio Standard resources.

Finally, analysis of cost and cost-risk suggest that early development of sites for combined-cycle combustion turbines is warranted. Carbon control policies may give rise to a sudden requirement for resources to replace coal-fired generation. Conservation would not be available in sufficient quantity to accommodate a sudden requirement. Consequently, the siting of gas-fired turbines is a prudent precaution. These turbines are insurance against the possibility of control policies that would render coal-fired generation uneconomic.

In the interest of maintaining the Council's schedule for the Plan, new results, not available at the time this document is being written, may be introduced at the committee meeting. Staff will endeavor to make such results available prior to the meeting on our web site.

# Current Regional Portfolio Model Results

Michael Schilmoeller  
Power Committee  
Tuesday, April 14, 2009



## Overview

- Best assessment of near term resources
- Does not reflect longer term options
  - Imported wind from Montana
  - Advanced nuclear
- Does not reflect least-cost carbon control planning
- Assumes no new conventional coal



## Resources Selection by the Model

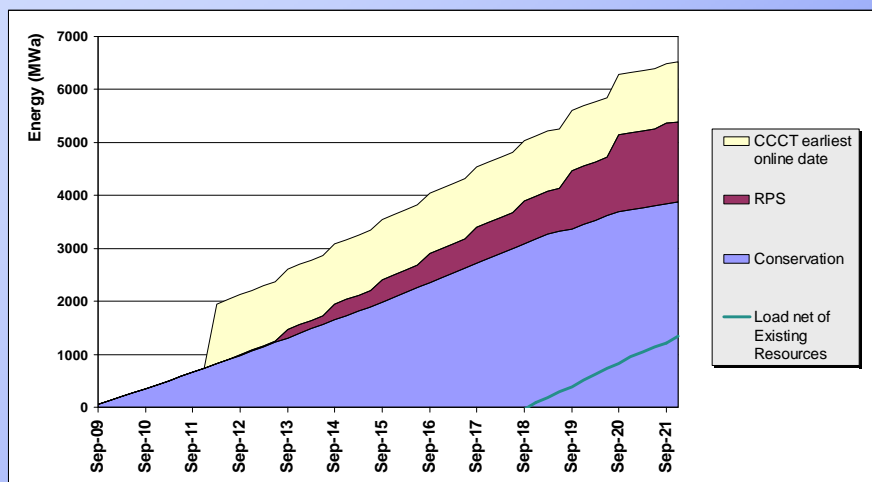
- Conservation
  - discretionary and lost opportunity
  - amount determined by wholesale electricity price and the cost-effectiveness premium
- Full RPS requirement takes regional wind potential, unless additional transmission is forthcoming
- CCCT (415 MW Nominal)
  - siting and licensing option illustrated by full capability at earliest on-line date



3



## Resource additions



4



## Observations

- The region starts out with a 3,390 MWa surplus under a critical water hydro generation assumption. This plan would maintain that surplus over the years represented.
- Regional RPS requirements will likely exceed 1,700 MWa by 2030, the full energy output of the 5,300 MW of wind potential in the region. About 800 MW of geothermal and 830MW of biomass, however, are also available to meet RPS requirements.
- Cost-effective conservation acquisition exceeds 5,400 MWa by 2030.



5



## Observations

- The regional carbon footprint is roughly 55 million tons of CO<sub>2</sub>
- Regional coal plants contribute about 58 million tons of CO<sub>2</sub> annually. Replacing these with gas fired generation would result in net reduction of about 29 million tons.
- Going beyond this requires carbon neutral or carbon-free resources (nuclear, wind, biomass, solar, more energy efficiency)



6



End

