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August 29, 2012

MEMORANDUM

TO: Power Committee

FROM: Steven Simmons

SUBJECT: Preliminary Results of the Electricity Price Forecast Update

As part of the Mid Term Assessment, staff is preparing a long term wholesale electricity market price forecast. A summary of the work to date will be presented, including a briefing of the most important factors which have changed since the 6th Plan price forecast was published. The preliminary modeling and forecasting results will be shown, along with a summary of remaining work to be completed in order to finalize the forecast.

Electricity Price Forecast Update

Preliminary Results

September 10, 2012

Steven Simmons



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Wholesale Electricity Price Forecast Update

- § The Power Council periodically develops a 20 year forecast of wholesale electric power prices.
- § The forecast establishes a base for capacity and energy costs for both conservation and generating resource assessments.
- § Included in the forecast are future price estimates for the spot market at the Mid Columbia trading hub.
- § Prices are produced using an electricity market model which quantifies the relationships between variables such as demand and conservation, generating resource mix, fuel prices, energy policies (such as Renewable Portfolio Standards and CO₂ emissions reduction).
- § The model may also be used to estimate future natural gas consumption, future CO₂ production, and future export/import markets.



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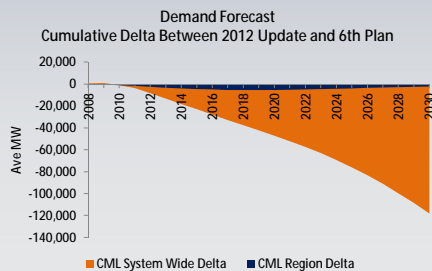
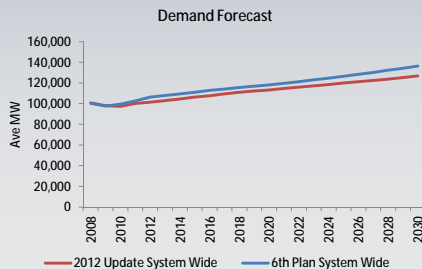
Electricity Price Forecast Update

- § The 6th Plan Price Forecast was published in early 2010
- § Updates to the model inputs include:
 - Demand Forecast
 - Natural Gas Price Forecast
 - A comprehensive update of the existing resources data base
 - Planned retirements such as Boardman (2020), Centralia (2025), Carbon (2014), CA Once Through Cooling plants, and Alberta Coal units
 - New RPS estimates
 - Deferred CO2 cost assumptions (moved out 5 years)
- § WECC wide market modeled using AURORA ^{xmp}® hourly dispatch model
- § Hourly prices based on variable cost of the most expensive generating plant needed to meet load



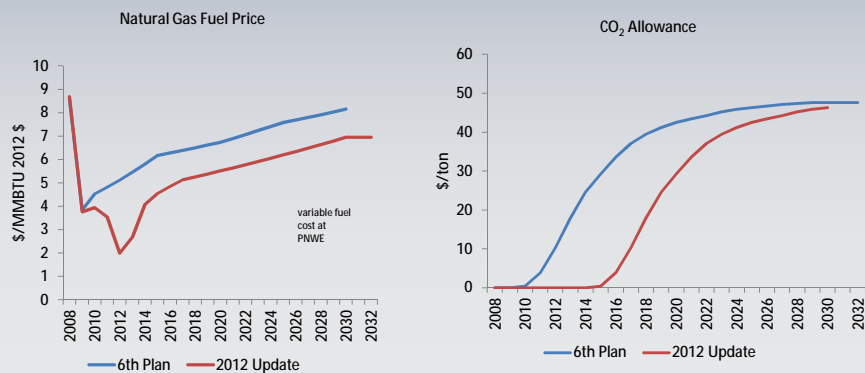
Demand

Since the 6th Plan, the demand forecast has dropped – both WECC wide and to a lesser extent, the Pacific NW.



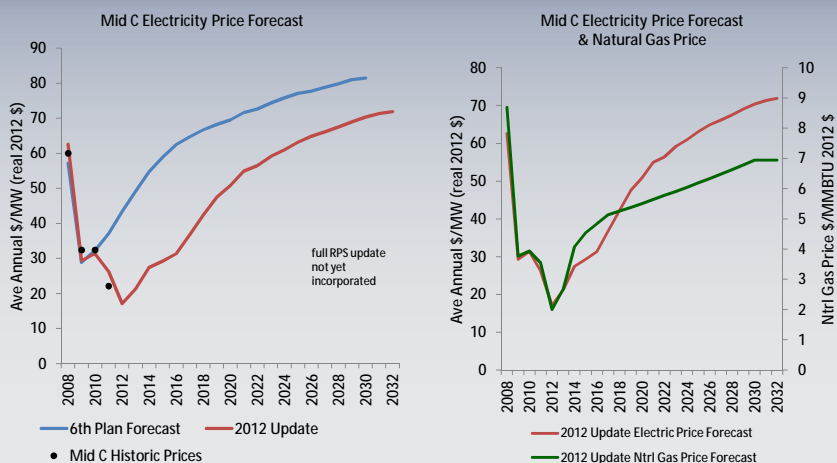
Natural Gas Price & CO₂ Allowance

- § Since the 6th Plan, the natural gas price forecast has dropped
- § CO₂ Allowance costs have been shifted out 5 years



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Preliminary Electricity Price Forecast & Gas Price Overlay



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Summary of Preliminary Results

- § The demand forecast dropped from the 6th Plan
- § Natural gas price forecast dropped from the 6th Plan
- § More RPS developed has occurred – front loaded, particularly in Oregon and Washington

The result is:

The forecast for Wholesale Electric Prices is lower, especially in the near to mid term.

Next up:

- § Full incorporation of RPS resource update
- § State Carbon Regulation modeling
- § Expect to look at natural gas consumption, CO₂ production, export/import results, runs with & without system wide CO₂ allowance cost

