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September 27, 2012

MEMORANDUM

TO: Power Committee

FROM: Steven Simmons

SUBJECT: Update on the Wholesale Electricity Price Forecast

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 look at seasonal price patterns, both historic and modeled. New preliminary modeling and forecasting results will be shown, along with a summary of the remaining work to be completed in order to finalize the forecast.

Update On The Wholesale Electricity Price Forecast

Preliminary Results

October 9, 2012
Steven Simmons



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Quick Review of Work to Date

August Power Committee Meeting

1. Review of methodology used to generate the forecast
2. Review of the Aurora[®] model
3. Update of existing resources – plus future coal plant retirements and CA Once Through Cooling retirements
4. CO₂ regulatory cost assumptions – federal costs deferred 5 years from 6th Plan, and state/province updates

September Power Committee Meeting

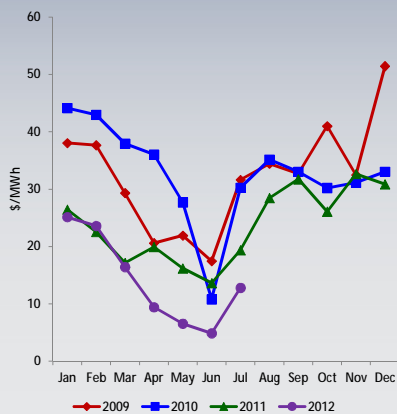
1. Reviewed updates to the demand and natural gas price forecasts
2. Updates to existing RPS resources
3. Discussed a preliminary wholesale electric price forecast – which was significantly lower than the 6th plan forecast
4. Reviewed an overlay of the electric price and natural gas price forecasts



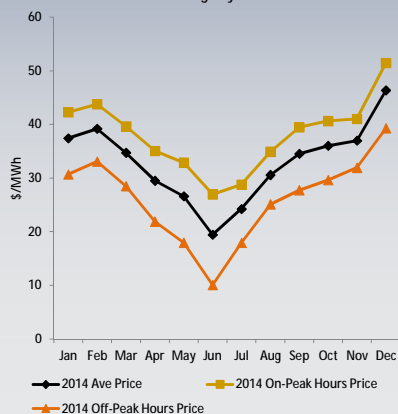
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Seasonal Patterns of Electricity Price at Mid-C

1) Historic Wholesale Electricity Price at Mid C Average by Month



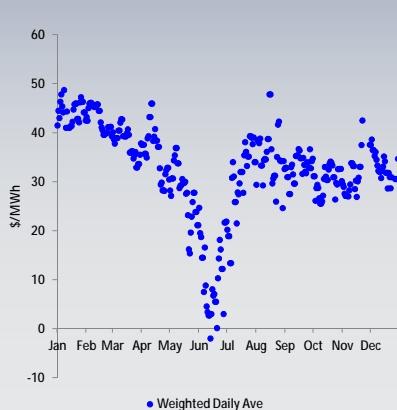
2) Forecast Wholesale Electricity Price at Mid C Average by Month for 2014



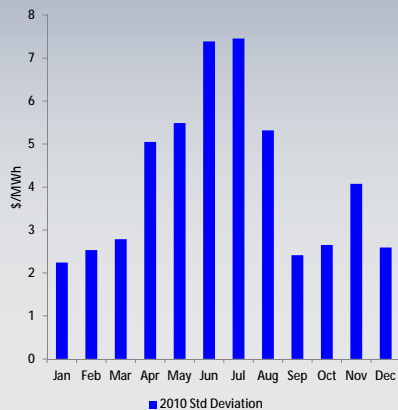
3

Daily Variation of Electricity Price at Mid-C

3) Historic Wholesale Electric Price at Mid C Daily Average for 2010



4) Historic Wholesale Electric Price at Mid C Standard Deviation of Daily Price for 2010



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Comparison of CO2 Assumptions (in \$/ton)

§ Council 2012 Update

- Case assuming no Federal regulatory cost
- Case with Federal regulatory cost beginning in 2015, reaching \$10 in 2017, \$29 in 2020 and \$47 by 2032 (6th Plan deferred 5 years)

§ PSE 2013 Draft IRP

- Base case with no Federal regulatory cost
- Low case based on societal costs, beginning immediately at \$5 and reaching \$15 by 2030
- Mid case based on 2011 IRP, over \$20 in 2017 and around \$65 by 2030
- High case based on societal costs, beginning immediately at over \$60 and reaching \$160 by 2030

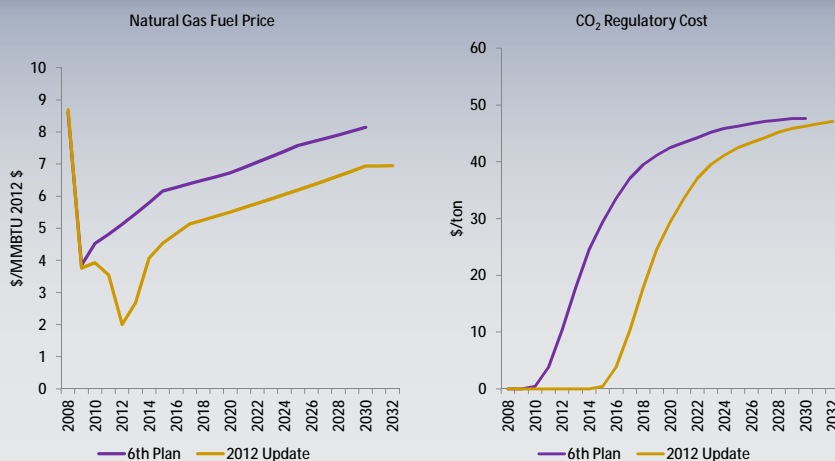
§ PacifiCorp 2013 Draft IRP

- Case assuming no Federal regulatory cost
- Base case starting at \$16 in 2022 and reaching \$26 by 2032
- High case starting at \$14 in 2020 and reaching \$75 by 2032



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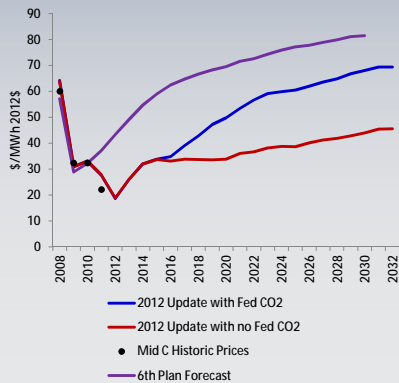
Natural Gas Price Forecast and CO2 Assumptions



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Preliminary Wholesale Electric Price Forecast

5) Preliminary Wholesale Electric Price Forecast at Mid C



Since the 6th Plan was published in 2010:

- § Reduction in the demand forecast
- § Drop in the natural gas price forecast
- § More RPS resources
- § CO2 price deferred until 2015



Next Up

- § Analyze CO2 emissions by zone as forecast by the model for cases with and without Federal CO2 regulatory cost assumptions
- § Cases with high and low demand as well as high and low natural gas prices
- § Finalize update to the Wholesale Electric Price Forecast

