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April 30, 2019

MEMORANDUM

TO: Council Members

FROM: Steven Simmons

SUBJECT: Natural Gas and Other Fuels Price Forecast Process

BACKGROUND:

Presenter: Steven Simmons

Summary: In preparation for the 2021 Power Plan, staff will be providing the Power Committee a series of presentations on different aspects to developing the Plan. This presentation will be on the Natural Gas and Other Fuels Price Forecast.

Relevance: Natural gas prices (and other fuel prices) are a key, early input to many the models used to help develop the power plan. The price forecast has a strong influence on the forecast of electricity prices, and fuel related costs also impact generation expansions decisions.

Workplan: A.3.3 Produce Natural Gas Price Forecast for 2021 Plan

Background: Natural gas provides a key source of energy for the Northwest. Gas is used directly in homes and businesses as a fuel for space and water heating. In addition, natural gas-fired power generators provide baseload electricity, peaking capacity, and help to integrate renewable wind power into the grid.

Roughly every two years the Council publishes a long term, natural gas price forecast that includes a medium, low, and high price view for Henry

Hub, as well as for key regional gas hubs. The Council's price forecast is developed from a combination of quantitative and qualitative analysis and is directly influenced by input from the Natural Gas Advisory Committee (NGAC). This upcoming forecasting cycle will provide the input for the 2021 Power Plan.

More Info: Recent gas-related presentations
https://www.nwcouncil.org/sites/default/files/2018_1009_p3.pdf
https://www.nwcouncil.org/sites/default/files/2018_1113_5.pdf
https://www.nwcouncil.org/sites/default/files/2017_1010_p1.pdf

Natural Gas & Other Fuels Price Forecast

Process for the 2021 Power Plan

Power Committee - May 7, 2019 – Boise Idaho

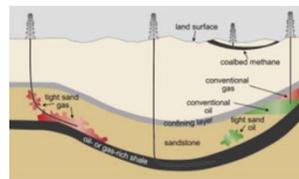
Steven Simmons

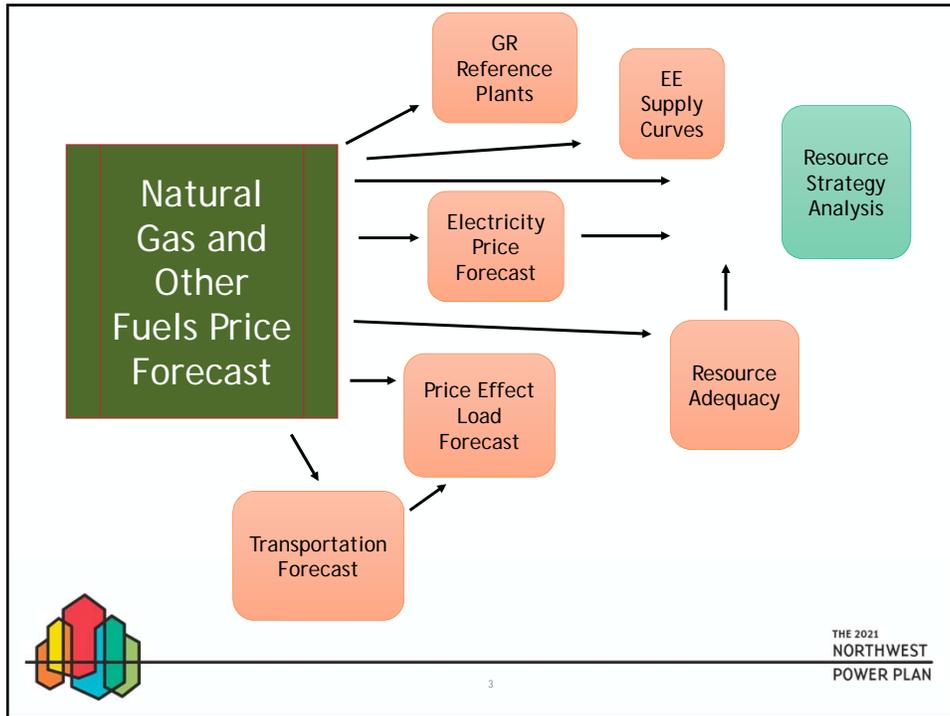


THE 2021
NORTHWEST
POWER PLAN
FOR A SECURE & AFFORDABLE
ENERGY FUTURE

Agenda

1. The Natural Gas & Other Fuels Price Forecast - where it fits in and why it's important
2. General Approach and Methodology
3. Wrap Up





Natural Gas & Other Fuels Price Forecast

1. Forecast of monthly natural gas prices at hubs in the Northwest and other select Western hubs across the 20 year planning horizon
2. The forecast includes a defined range of prices
High – Medium - Low
3. Other fuels include oil and gasoline, coal and... likely for this plan - Renewable Natural Gas
4. Price volatility is introduced downstream in the planning process in the Regional Portfolio Model RPM



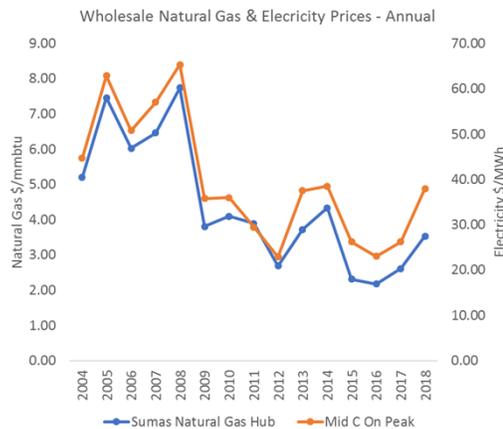
Natural Gas & Other Fuels Price Forecast

1. Generally the forecast is done every one to two years – the most recent is the Mid-Term Forecast
2. The Natural Gas Advisory Committee (NGAC) will be meeting in late spring/early summer to discuss the Power Plan Forecast
3. New to the 2021 Power Plan will be a consideration of including a blend of Renewable Natural Gas (RNG) into the pipeline system
4. Also – there may be more emphasis on price volatility in light of the late 2018 pipeline rupture in British Columbia and late winter 2019 polar vortex that caused price spikes for gas and electricity in the region



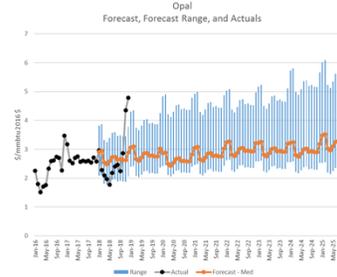
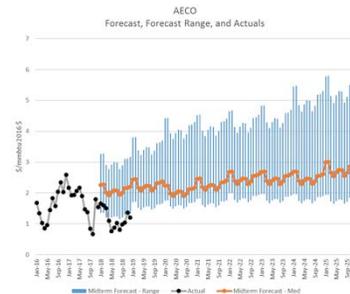
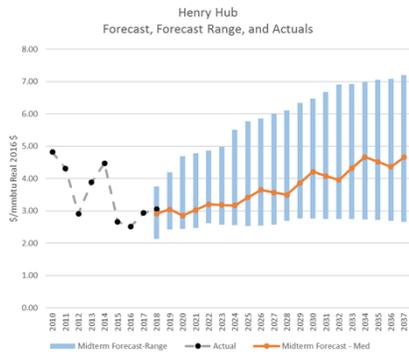
Why the Natural Gas Price is Important

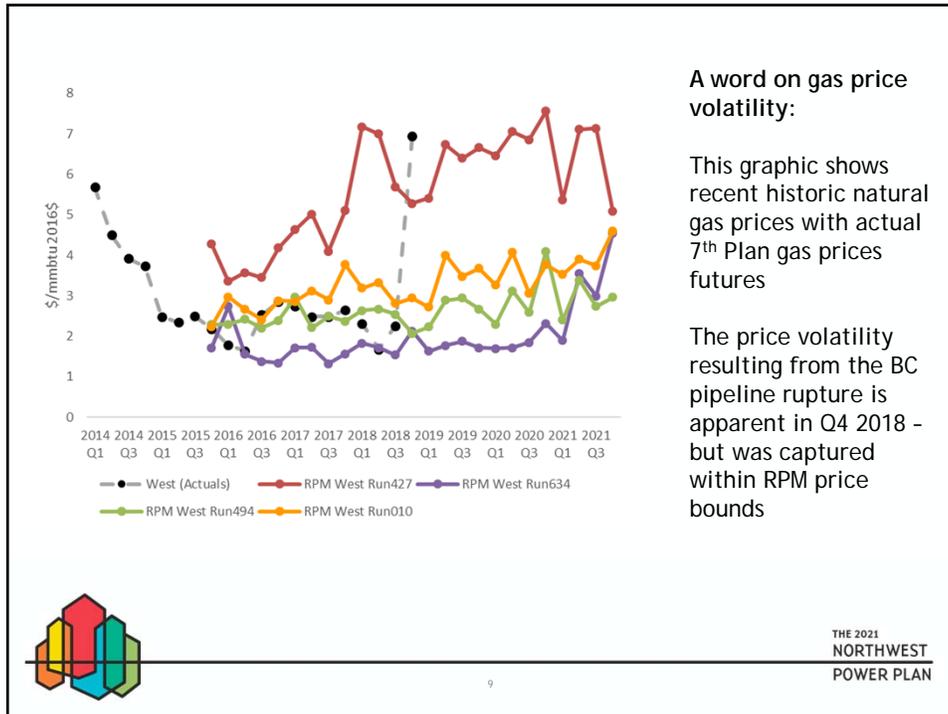
1. There are 36 gas-fired power plants in the region – 9,200 MW of capacity – fairly evenly split between the East and West sides – though more annual generation on the East side
2. The regional power sector consumes around 30% of the overall gas that flows into the region and typically provides around 12% of the electricity that is generated
3. Gas-fired power plants provide baseload power, peaking power and wind-power integration
4. Natural gas prices in the region can strongly influence the price of electricity
5. The prices from the forecast are direct inputs to the Aurora and RPM models – which model the expansion of power plants and forecast electric prices



Methodology

1. Prior to NGAC meeting, the members are surveyed for their views on future gas prices - the results are compiled anonymously
2. Other price data sets are rolled in, like the EIA and CEC forecasts
3. A proposed forecast for Henry Hub is develop and provided as a starting point for discussion
4. A more finely tuned, monthly forecast for regional hubs and other western hubs is developed – both quantitatively and forecast “art”
5. What begins as a consensus driven, single hub annual forecast is expanded into an encompassing quantitative price forecast for the region





Wrap Up

1. Natural Gas & Other Fuels Price Forecast provides key input – very early in the planning process
2. The NGAC will be meeting soon to discuss the next price forecast
3. The next forecast may include some impacts from RNG being blended into the system over time and price volatility impact from the BC pipeline rupture

