MEMORANDUM

TO: Council Members
FROM: Steven Simmons
SUBJECT: Natural Gas Price Update

BACKGROUND:

Presenter: Steven Simmons

Summary: Natural gas prices began a run-up from $2.75 per MMBtu in mid-June of this year all the way up to $6.00 in October before leveling off. Gas prices can rise or fall based on supply and demand fundamentals, or, even just the perception of fundamentals. In the near-term, these fundamentals include pre-winter storage levels, production outlooks, and demand and weather forecasts.

This presentation provides a review of historic and current fundamentals and prices, and a brief review of the regional natural gas system and the related analytic products that the Council delivers as part of the power plan.

Relevance: Natural gas prices can influence many factors in power planning such as gas consumption, power plant dispatch, energy cost, and emission levels.

Workplan: A.4. Forecasting and Economic Analyses

Background: A detailed review of the natural gas work for the 2021 Power Plan may be found in the supporting materials:
https://www.nwcouncil.org/2021powerplan_sitemap
Natural Gas Price Update

Steven Simmons
November 16, 2021

Average daily gas prices by Month – Henry Hub

- 2005 Hurricanes
- Market Run Up followed by economic crash
- Western Energy Crisis
- Polar vortex grips the US
- Texas energy crisis and on to today
- The era of shale, fracking, and horizontal drilling begins
- Long supply
**Todays Discussion**

1. Fuels work here at the Council
2. Gas fundamentals
3. Prices

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**Fuel Work Products**

1. Long term natural gas price forecast
   a) A long-term, base forecast with low, mid and high is developed using direct input from the NGAC
   b) WECC-Wide hub price forecast for planning models
   c) Power plant & city gate price points
   d) Stochastics for risk planning
   e) Fixed fuel costs
2. End-use natural gas demand forecast and RNG
3. Upstream Methane Emissions
4. Hydrogen production and demand
Natural Gas Price Update
11.16.2021

FUNDAMENTALS

PRODUCTION-IMPORT/EXPORT-STORAGE-CONSUMPTION
Storage

- Storage re-fill season for winter typically runs from April thru October each year
- Re-fill lagged this year during the summer months – Hurricane Ida hindered inventory buildup and continued strong LNG exports
- As recently as mid September national storage levels were 93% that of the 5 year average level for the same time frame (2016-2020)
- Strong injection rates recently have pulled storage levels up to 97% of average (Oct 29)
- Concern over a repeat of a deep freeze event like February
US Annual Gas Consumption

- Since 2005 consumption for power generation has doubled
- Growth in consumption for end uses (residential, commercial, industrial and transportation) has grown by 11%
- Most of the growth in end-use is in the industrial sector

NW Annual Gas Consumption

- Growth in consumption for Power Generation – but highly variable from year to year
- General growth in consumption for end uses (residential, commercial, industrial and transportation)
- Growth in end-use across all sectors
Wrap Up

- Run up in domestic natural gas prices since July 2021
  - Record high prices for gas in Asia and Europe – driving big growth for US LNG exports
  - Hurricane Ida slows storage inventory refill for winter. Though levels now near average
  - Producers careful with capital spending plans and concerns about long term demand prospects for the product
- Fundamentals seem to suggest prices to fall back in spring?
  - Winter 2021/2022 and LNG export market are factors