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NW Natural®

Rates & Regulatory Affairs
UG-180781
2018 Hedging Plan
Data Request Response

Request No.: UG-180781 WUTC DR 1
1. Referring to NWN 2018 Hedging plan filed in Docket UG-180781, please provide, with calculations and formulas intact, the summary of total amount of hedges executed in the PGA year starting November 1st 2017 ending on October 31st 2018. Please include a summary of the associated risk metrics that triggered the decision to hedge.

Response:

See CONFIDENTIAL UG 180781 WUTC DR 1 Attachment 1 for the summary of total amount of hedges executed in the PGA year starting November 1, 2017 and ending on October 23, 2018 (the date of this document). This attachment is Confidential on the basis that it contains market based pricing information and is being submitted in accordance with 480-07-160(8).

Throughout 2018, two analytic strategies were employed in order to inform decisions around NW Natural's hedging program:

a. Prompt Year Cost Avoidance Strategy
Weather forecasts coupled with overall market conditions were considered in the assessment for hedging in the prompt year. SENDOUT modeling as well as assessments of recent historical volatility were both performed to assess asymmetric risk to customers. These assessments were applied differently between the heating and non-heating seasons due to the differences in how the markets operate and are detailed below.

i. Heating Season
For the prompt winter, the Company's strategy was to attempt to lock in prices when they have the highest probability of being lowest cost. Weather assumptions were incorporated in the forward prices for the prompt winter and account for the most significant aspect of volatility. Historical data has shown that the major drivers to forward price shifts occurs during the winter months after storage levels and other factors become certain.

ii. Non-Heating Season

1. Hedges placed for the non-heating season (April-October) were not subject to weather considerations. While the summer months may cause spikes in natural gas prices as cooling demand increases in the power industry, the magnitudes and swings are not as severe. As opposed to weather being a primary driver of shifts in winter months, market fundamentals have a much larger impact on both cost and volatility.
2. In the context of the non-heating season, recent volatility was assessed at each basin to determine whether or not the risk to customers associated with additional hedging was neutral or was asymmetrically skewed. Basins demonstrating neutral risk or price risk skewed to the downside did not justify additional hedges, while basins showing asymmetric price risk increasing were hedged.

b. <u>Year-to-Year Rate Stability</u>
Year-over-year rate stability was another factor considered. For the current year the Company reduced its overall multi-year hedging targets (2+ years) by eliminating internal policies regarding minimum hedge percentages set previously for programmatic hedging. After this elimination of the programmatic constraints, multi-year hedges have fallen from ~24% of expected demand hedged for 2018-2019 to ~19% of expected demand hedged for 2019-2020. Investigation continues into the use of multi-year hedges for winter price mitigation as well as long term rate stability and will be expanded in next year's plan.

The strategies developed during 2018 were then applied to the placement of hedges:

1. Prompt year hedging volumes – the factors and decision criteria illustrated above were applied with the following findings:

a. Warm weather has been consistently forecasted for the winter of 2018-2019, suggesting increased hedging during the heating season.

b. Recent Canadian market volatility was assessed and showed price risk asymmetry on the upside, therefore, AECO and Station 2 were hedged at higher volumes during the summer.

c. During the summer of 2018, the Rockies was determined to no longer have price risk asymmetry to the upside during the non-heating season, causing a strategy change to remove additional hedges from the hedging plan.

2. Hedge Timing – hedge timing remains spread across March to October based on recommendations from prior analysis. A lower amount of hedges were placed in the summer months as the prior assessment has indicated price spikes in the summer time may cause forward prices to rise as well.

3. Hedge Duration – hedges beyond the prompt year have reduced slightly in magnitude compared to the prior year, falling from 24% of hedged expected demand for 2018-2019 to 19% of expected demand for 2019-2020. We are continuing to examine longer-term durations and will continue to adjust the strategy going forward with additional analysis.