



*In the Community to Serve®*

# ANNUAL HEDGE PLAN

(UG-\_\_\_\_\_)

JULY 23, 2021

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## I. Program Goals

On March 13, 2017, the Washington Utilities and Transportation Commission (WUTC) issued its Policy and Interpretative Statement on Local Distribution Companies' (LDCs) Natural Gas Hedging Practices in Docket UG-132019. This statement provided guidance on how LDCs should develop and implement more robust risk management strategies, analyses, and reporting related to hedging activities.

In Docket UG-132019, the WUTC reviewed hedging practices by utilities in the State of Washington and found that local LDCs experienced costs associated with price risk mitigation techniques upwards of \$1.1 billion over a ten-year period. The WUTC discovered that many of these costs were caused by adherence to programmatic "set-it-and-forget-it" price risk mitigation practices (herein called hedging or hedging strategies) that did not respond well to the downward trending market which prevailed in recent years. The WUTC concluded that, while hedging is necessary to limit upside price risk, an effective program should have the flexibility to mitigate downside hedge losses by adjusting to changing market conditions. To achieve this goal, the Commission identified a need for a risk-responsive hedge plan with a robust analytical framework. Cascade Natural Gas (CNGC or Company) has committed to developing, maintaining and adapting risk responsive hedging policies, processes and applications. Satisfying the Commission's natural gas risk management goal is the purpose of the work associated with this document.

In preparing the Company's hedging document, CNGC has relied on the following points when interpreting the WUTC hedging policy statement:

- WUTC affirmed its preference that natural gas LDCs utilize risk responsive hedging practices.
- Hedging practices should not be speculative in nature. Hedging is an activity designed to reduce price uncertainty and manage foreseen and unforeseen price risk. Hedging is not an attempt to realize profits based on predictions of anticipated market movements.
- The Commission believes that, while there is no right mix of methods that may be applied unilaterally due to utility specific operations, LDCs must reasonably plan for market volatility and appropriately react to balance the benefits of hedging against exposure to hedge losses. This includes recognizing dual protection from upside price risk and downside hedge losses, along with annual validation of acceptable hedging outcomes.
- Based on the WUTC hedging policy statement, the Company is aware that the WUTC views the Gettings White Paper as a resource in helping LDCs develop more robust risk management programs.

In response to Docket UG-132019, CNGC's Gas Supply Oversight Committee (GSOC)<sup>1</sup> took the following actions in order to achieve full compliance the WUTC's goals. First, it formed a project team that would completely redesign the existing Hedge Program. Second, GSOC approved the hiring of an outside consultant, Gelber and Associates (G&A), to assist the project team with the Hedge Program overhaul. Gelber has more than two decades of experience in helping utilities create and manage their hedge programs.

The CNGC Hedging Program was designed to satisfy the WUTC's objectives in a manner that is feasible and economical given CNGC's size, structure, expertise, and customer base. In January of 2019, GSOC approved

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<sup>1</sup> CNGC's Gas Supply Oversight Committee (GSOC) oversees the Company's gas supply purchasing and hedging strategy. Members of GSOC include Company senior management from Gas Supply, Regulatory, Finance and Operations.

the Company Hedge Program, while on April 27<sup>th</sup>, 2021 the newest Hedge Execution Plan (HEP) was approved. Components of both the Hedge Program and the current HEP are discussed in this document, the 2021 Annual Hedge Plan (“Hedge Plan “or “Plan”).

On February 4<sup>th</sup>, 2021, CNGC met with members of WUTC staff for an informal presentation of the 2020 Hedge Plan. The purpose of the presentation was to solicit constructive feedback regarding areas of the 2020 Plan that can be strengthened in the 2021 version. The Company appreciates this feedback and has included an appendix to the 2021 Hedge Plan a summary that clearly identifies how this plan incorporates the suggestions given by WUTC Staff.

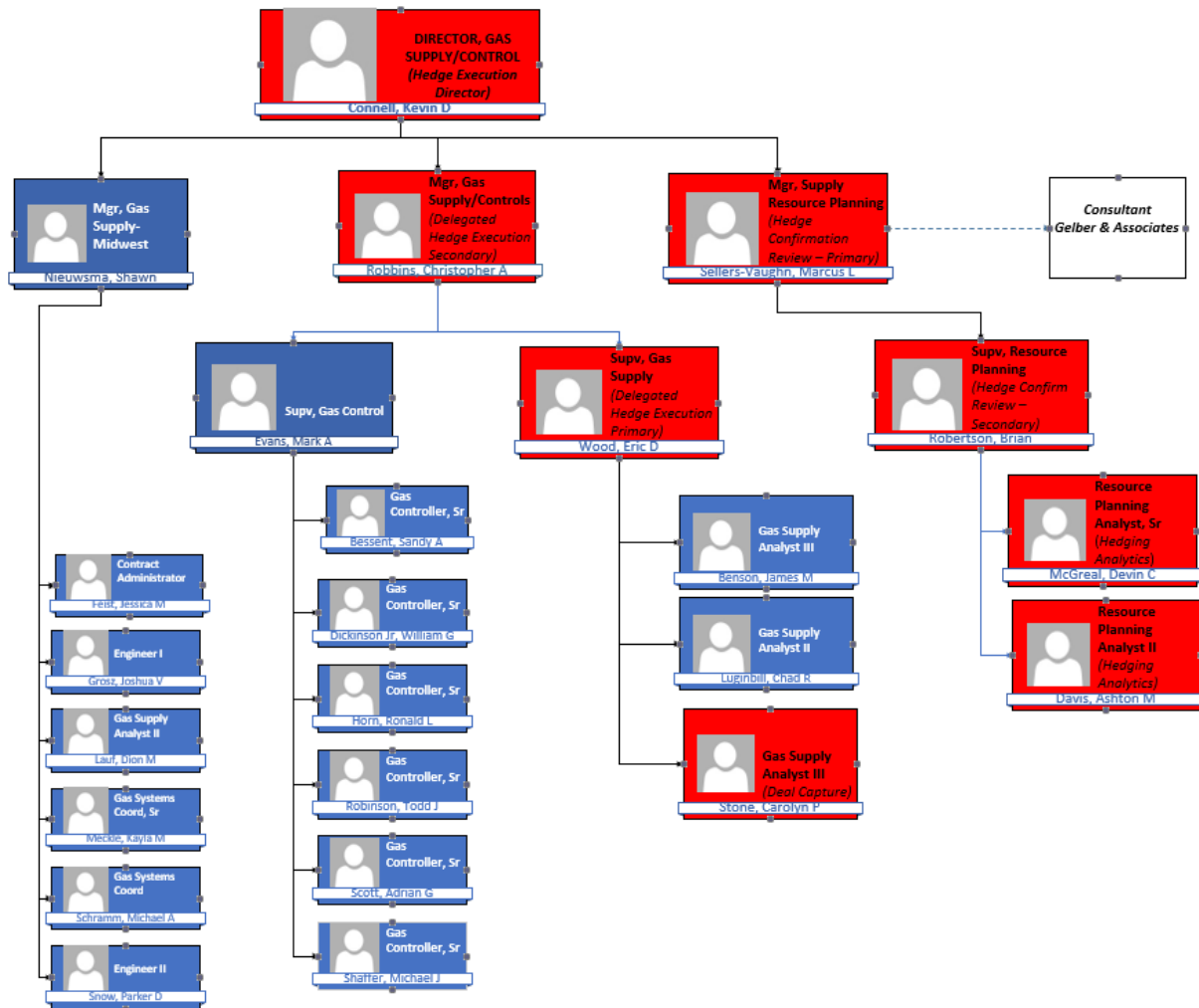
## II. Organizational Structure

CNGC’s GSOC has ultimate authority over the Company’s Hedge Plan. This power is granted by the Company’s Management Policy Committee. Key members of CNGC’s Gas Supply department are responsible for executing the strategy set by GSOC, while individuals in the Resource Planning group of the Gas Supply department serve in analytical support and audit roles. Figure 1 outlines the personnel that will be responsible for oversight, execution, and support for the 2021 Hedge Plan. Figure 2 provides a condensed organization chart for the Director of Gas Supply and individuals that report to him who are responsible for executing the Hedge Plan.

**Figure 1 - Hedge Plan Roles**

<b>ROLE</b>	<b>ASSIGNED TO</b>	<b>TITLE(S)</b>
Corporate Authority to Hedge	Management Policy Committee	President MDUR President MDUG VP, CFO & Treasurer MDUR
Oversight and authorization of CNGC’s Hedge Program	Gas Supply Oversight Committee	EVP, Bus Dev & Gas Supply (Chair) EVP, Reg Affrs, Cust Srv, Admn VP, Engineering & Operation Services Controller - Utility Group Dir, Gas Supply Dir, Regulatory Affairs
Final Transaction Approval (upon receipt of signed agreement from counterparty)	Scott Madison	EVP, Business Development & Gas Supply
Final Transaction Approval (upon receipt of signed agreement from counterparty) Backup	Tammy Nygard	Controller - Utility Group
Hedge Execution Director	Kevin Connell	Director, Gas Supply
Hedge Execution Director Backup	Chris Robbins	Manager, Gas Supply & Control
Delegated Execution Primary	Eric Wood	Supervisor, Gas Supply
Delegated Execution Secondary	Chris Robbins	Manager, Gas Supply & Gas Control
Deal Capture	Carolyn Stone	Gas Supply Analyst III
Confirmation Review Primary	Mark Sellers-Vaughn	Manager, Supply Resource Planning
Confirmation Review Secondary	Brian Robertson	Supervisor, Resource Planning

**Figure 2 - Hedge Team Organization Chart**



### III. Hedge Program

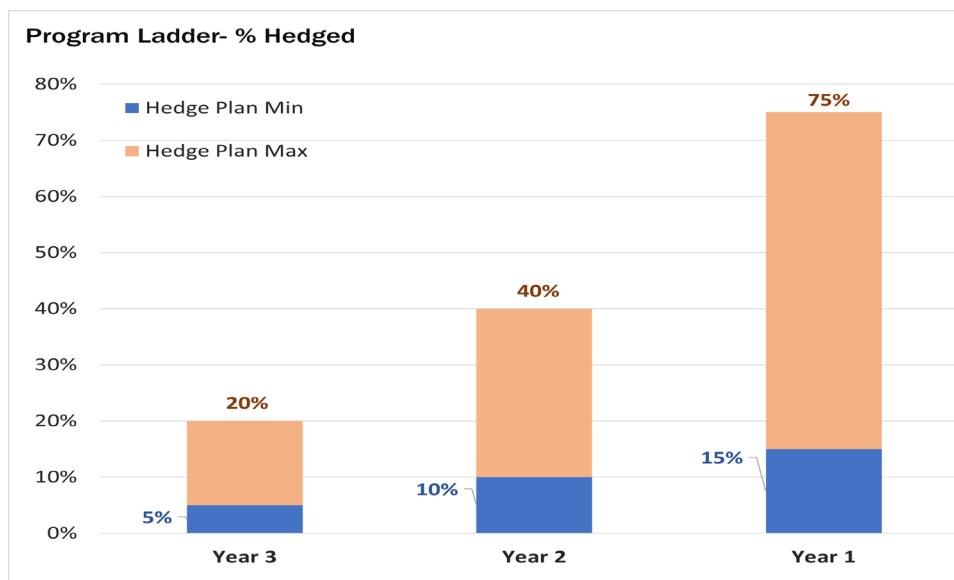
The philosophy behind the Company’s Hedging Program is to accomplish the following goals:

1. Provide essential price protection against adverse price increases which have detrimental impacts for CNGC customers.
2. Make the program “risk-responsive” and capable of adjusting to changing natural gas market conditions in compliance with the Washington Utility and Transportation Commission’s Policy Statement UG-132019.
3. Reduce hedge losses and more proactively respond to low risk or a falling market.
4. Further diversify portfolio by integrating financial hedging instruments.
5. Coordinate design features with appropriate CNGC personnel.

The 2021 Hedge Plan is structured such that all hedge decisions and rationale for those decisions are recorded and are easily retrievable. Hedges percentages are not “set”, and decisions are not “forgotten”. Decisions are supported by timely data and analysis (see Section VI). Management are made aware of the downside and upside risk of hedging, as well as the risk associated with not hedging. While the underlying analysis may be complex, the output is intentionally made simple. This facilitates the flow of information and increases transparency throughout the organization.

The Hedge Program utilizes a three-year forward-looking ladder with minimum and maximum purchase levels (see Figure 3). The hedge ranges offer flexibility to respond to market conditions and risks should they shift throughout the hedge season.

**Figure 3: CNGC Hedge Program Ladder**



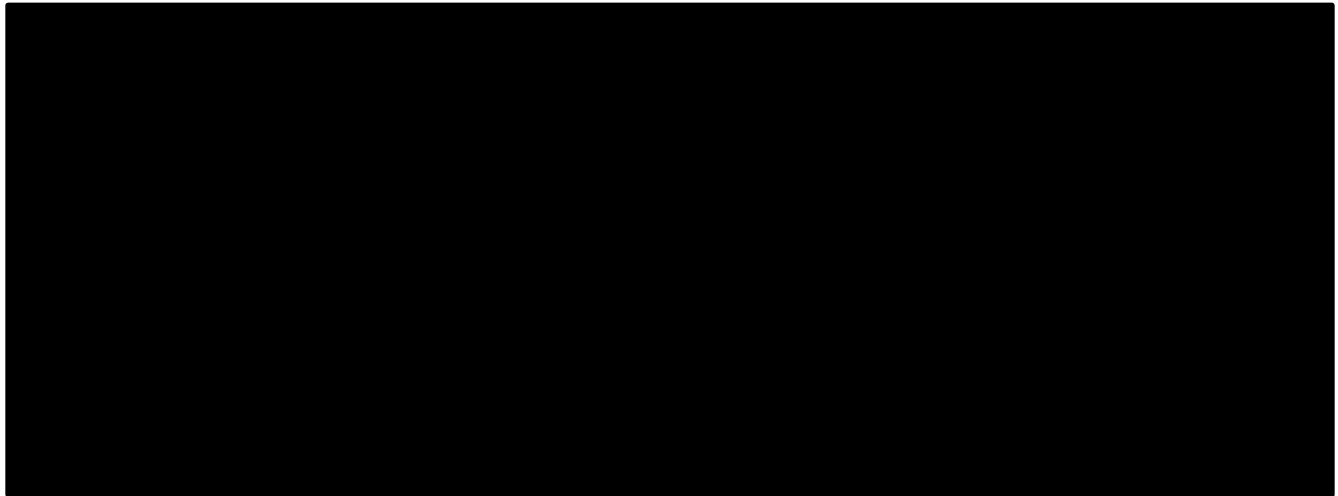
The start of a hedge year is November 1 and the end of the hedge year is October 31 of the next calendar year. However, the hedge ladder rolls over on April 1 to begin buying for the coming years. On this date the Year 2 becomes Year 1, Year 3 becomes Year 2, and a new Year 3 is added. The rolled off Year 1, now “Year 0”, will have several months (April through October) that have not settled and can still be hedged during this time. In terms of hedging the prompt (next) month, any fixed price purchases (hedges) will need to be performed prior to the month’s bid-week in order to be classified as a hedge. A hedge schedule is provided in the Appendix for more clarity.

As part of the Hedging Program, a prospective HEP is created before May each year by CNGC’s Resource Planning group, in collaboration with Gas Supply operations, to lay out a roadmap for the coming year’s hedge season. In preparation for the HEP creation, hedges from the previous year are marked and analyzed, the VaR and Book Model are recalibrated to take into account the latest market inputs, and years one, two, and three rollover to the new buying years. When this is complete, a meeting with the GSOC is convened to seek approval to move forward with the plan and covers the following items:

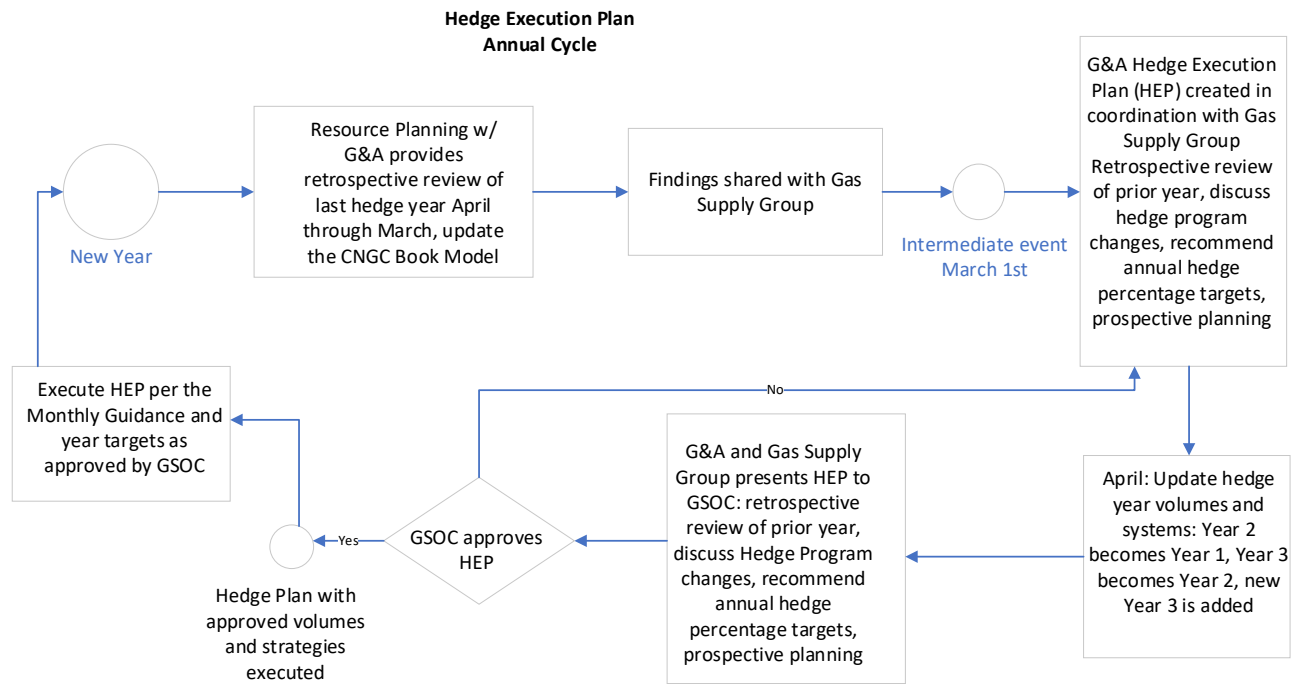
1. A review of the prior year’s hedging activities and results.
2. The CNGC Book Model as provided by Resource Planning that shows hedge positions, unhedged positions, and how these positions compare to the current market. The book model looks at the prices in CNGC’s fixed contracts and compares it to the forward prices for the months that a contract is active. The result is displayed as a Mark to Market Calculation, a snapshot of which can be found in Figure 4. The full Book Model is included with this Plan as an appendix.
3. Designation of who will be primary and who will be secondary in the performance of hedge execution and who is responsible for deal capture and confirmation.
4. A preliminary hedging outlook for the upcoming year.
  - a. Major market drivers affecting national and regional gas.
  - b. Potential market opportunities and risks for the coming buying season.
  - c. The volume distribution of purchases through the hedge year to get to the end of season hedge goal.
  - d. Recommended instruments to be used for hedging (fixed-price physicals, swaps, options etc.).
5. An end of year hedge percentage goal for Year 1, Year 2, and Year 3.

The annual HEP process is pictured in Figure 5.

**Figure 4- Mark to Market Snapshot**



**Figure 5 - HEP Annual Cycle Decision Tree**



**Monthly Guidance and Trade and Execution:**

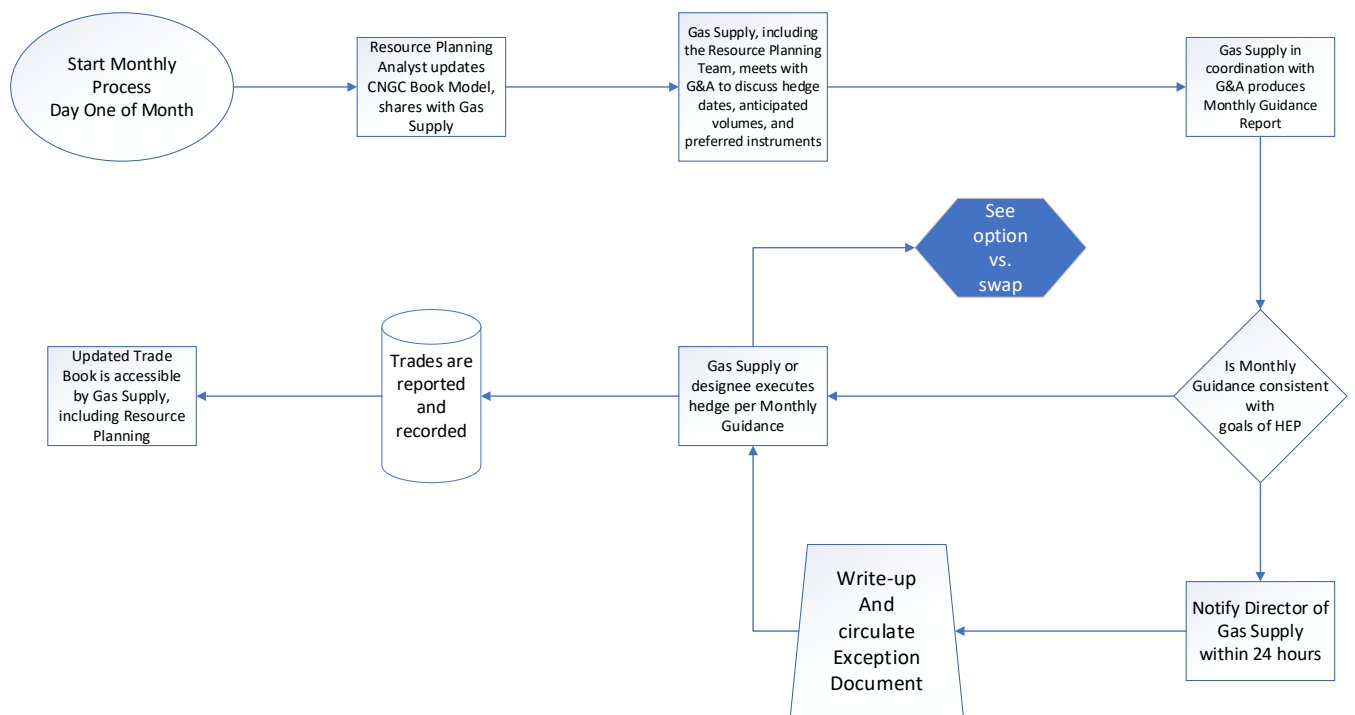
In order to implement the 2021 HEP as approved by GSOC, a Monthly Guidance document is created after updating the CNGC Book Model to include the most recent transactions and analyzing the various risk metrics. The purpose of the Monthly Guidance is to promote dialogue between CNGC’s Resource Planning team, who will be responsible for tracking and updating the CNGC book and various associated risk metrics,



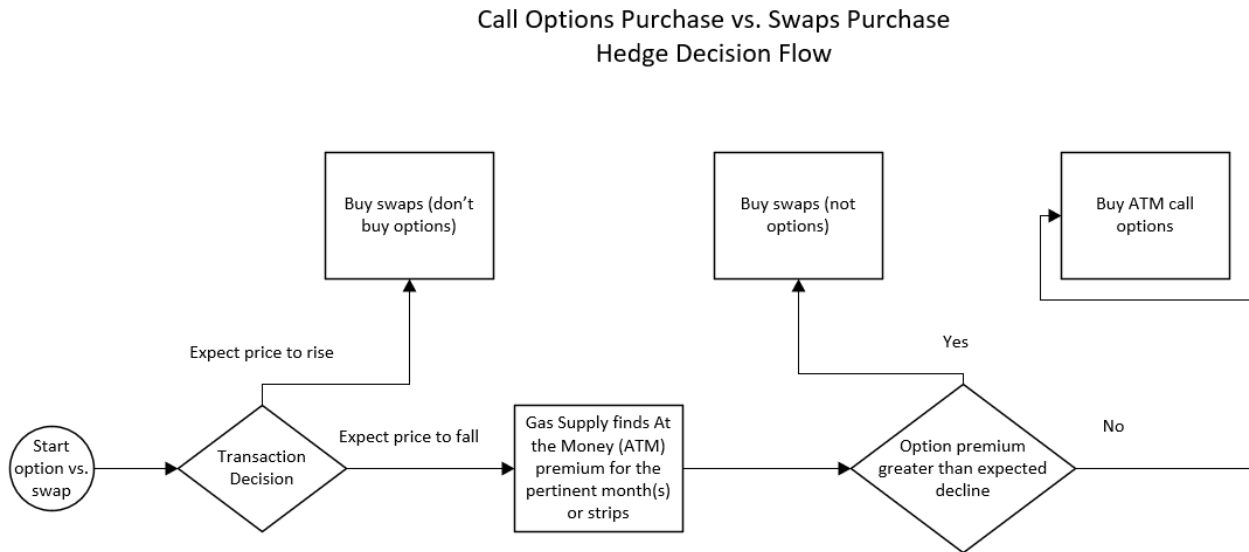
and the Gas Supply operations team, who will be negotiating and executing hedge transactions. In addition, Monthly Guidance provides documentation and transparency for future internal or external review.

Prior to the start of each month, the Resource Planning group within the Gas Supply department, with assistance from G&A, provides the Supervisor of Gas Supply with a Monthly Guidance. The Monthly Guidance gives recommendations on hedge timing, volume, and instrument type. A detailed visualization of the Monthly Guidance is shown as a decision tree in Figure 6, while a copy of a sample Monthly Guidance is included in the appendices of this Plan. Regarding instrument type, Figure 7 outlines the decision tree followed in deciding between swaps and call options. In deciding between financial and physical products, cost will be a major consideration. Typically, recommendations are written to give the gas buyer some flexibility to make cost effective decisions. For example, buy dates may be given but the exact time of day for purchasing are not provided. All guidance reports are delivered electronically and made available for review by the Gas Supply team, upper management, and regulatory bodies. Guidance reports are supported by the data-driven analysis by Gas Supply, Resource Planning, and G&A.

**Figure 6 – Monthly Guidance Decision Tree**



**Figure 7 - Call Options vs Swaps Decision Tree**



Hedging purchases are expected to occur at a minimum of once a quarter but will more typically occur once a month. Generally, once a quarter hedge purchases are reserved for locations that are less liquid, or in low volume summer months where splitting the hedge requirement into monthly increments is not cost effective. Otherwise, hedges will occur monthly per market guidance and a data-driven analytical framework as discussed earlier. However, as part of risk-responsive framework, Monthly Guidance may also recommend delaying or accelerating purchases from one month to another if the market is perceived as over or underpriced as indicated by quantitative metrics.

#### IV. Material Changes to Hedge Program

The primary purpose of the CNGC Hedge Program is to provide the structural objectives of the Company’s hedging activities. This includes the overall goals of the Hedge Plan, as well as the minimum and maximum allowed hedge percentages. In the 2021 Hedge Plan, we document one significant change to the Hedge Program: An increase in the Year 1 maximum allowed hedge percentage, from 60% to 75%. The justification for increasing the maximum can be broken down based on quantitative and qualitative rationales.

The quantitative argument for increasing the hedge maximum is from both a result based and risk mitigation perspective. The 2020 hedge program showed a benefit to customers of about \$4.6 million dollars versus not hedging. By increasing the hedged numbers shown the CNGC Hedge Plan Results (see Figure 12) by 15% of the total planned volume requirement, the potential savings could have increased to approximately \$5.9 million. These theoretical savings could have been higher or lower depending on the months that would be hedged, but assuming that the same hedging strategy would have been followed with the only variable being the quantities hedged, a delta of approximately \$1.3 million is significant. This argument is further supported by an analysis of the impact that a higher hedge target would have had on the Value at Risk (VaR) of Cascade’s portfolio for each month that the Company’s VaR Optimizer was operational, as shown in Figure 8:

**Figure 8: VaR Impact Analysis From a Theoretical Higher Hedge Maximum**

	<b>Current VaR Down</b>	<b>Current VaR Up</b>	<b>Proposed VaR Down</b>	<b>Proposed VaR Up</b>	<b>Net Change</b>
<b>Jul-20</b>	\$ (11,028,551)	\$ (10,368,646)	\$ (12,080,358)	\$ (8,882,855)	\$ 433,984
<b>Aug-20</b>	\$ (9,802,804)	\$ (37,984,891)	\$ (9,802,804)	\$ (37,984,891)	\$ -
<b>Sep-20</b>	\$ (19,252,669)	\$ (37,354,114)	\$ (19,252,669)	\$ (37,354,114)	\$ -
<b>Oct-20</b>	\$ (18,545,452)	\$ (37,038,818)	\$ (21,835,700)	\$ (29,748,808)	\$ 3,999,763
<b>Nov-20</b>	\$ (16,176,991)	\$ (42,249,602)	\$ (16,176,991)	\$ (42,249,602)	\$ -
<b>Dec-20</b>	\$ (21,150,102)	\$ (32,405,466)	\$ (26,128,763)	\$ (27,421,361)	\$ 5,444
<b>Jan-21</b>	\$ (12,507,337)	\$ (34,600,953)	\$ (14,408,061)	\$ (32,526,093)	\$ 174,137
<b>Feb-21</b>	\$ (12,679,862)	\$ (33,877,337)	\$ (13,536,206)	\$ (32,975,713)	\$ 45,280
<b>Mar-21</b>	\$ (8,618,076)	\$ (29,900,089)	\$ (8,618,076)	\$ (29,900,089)	\$ 0

In each month, the optimizer is able to look at current and stochastic futures pricing and evaluate the impact new additional hedges would have on the VaR Down, or risk related to falling prices, and VaR Up, or risk related to rising prices. The “Current VaR” columns represent the results when the Year 1 cap is set at 50%, while the “Proposed VaR” columns evaluate the impact of increasing that cap to 75%. When the model does not see a benefit to acquiring additional hedges, as was the case in August 2020 for instance, the retroactive recommendation would have been to not acquire any additional hedges. In months like October 2020, the model identifies what would have been an opportunity to significantly decrease the Company’s exposure to rising prices, while only moderately increasing Cascade’s exposure to falling prices by exceeding the 50% cap.

The qualitative argument for increasing the cap builds on the quantitative successes seen in the first two years of Cascade’s Hedge Program by emphasizing the increased expertise of the Hedge Execution Team. As the Company becomes more familiar with the various processes discussed in this document, increasing the year one cap signals to stakeholders that Cascade is confident in its ability to maximize savings to its customers, as it now has the resources and knowledge base to make prudent, data driven decisions, when deemed appropriate by market conditions. Another major driver behind this recommendation is the operational flexibility that increasing the cap provides to the Hedge Execution Team. The Company has already shown that it was able to successfully hedge at the 60% cap during the 2019-2020 hedging season. If prices continue to stagnate or even fall in the forward curve, there is potentially value to being able to capitalize on these market conditions by setting a higher hedge target. If prices start to rise, or market conditions indicate that is not beneficial to set the hedge target anywhere close to 75%, the Company still has the flexibility to set a hedge target of 50%, as it did in the 2020-2021 hedge season, or lower, even if the hedge maximum is 75%.

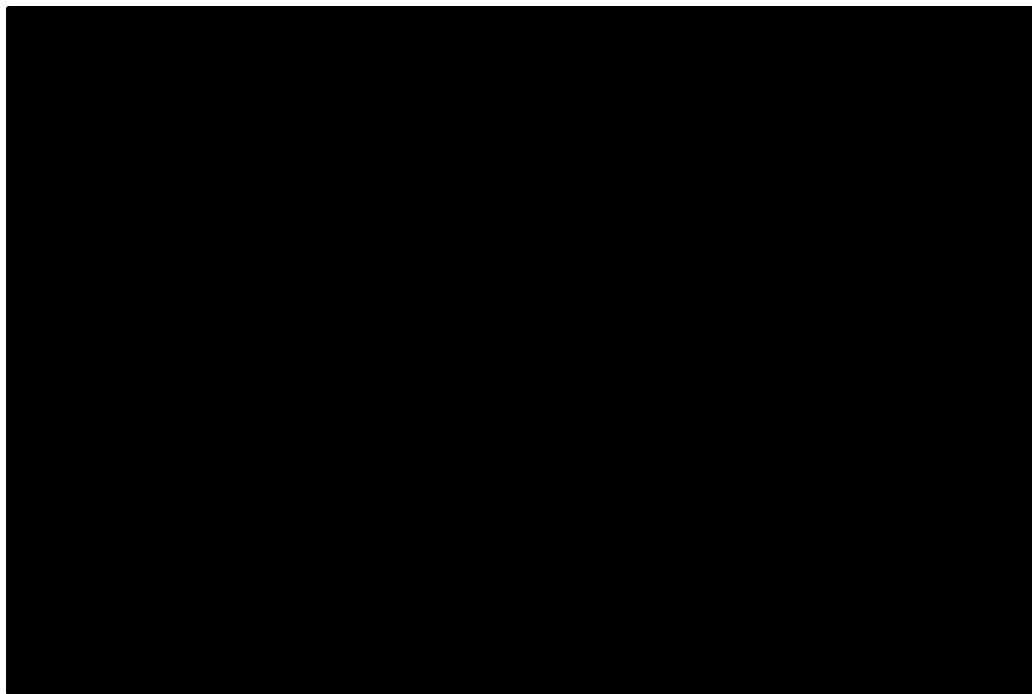
The dynamic portion of the Hedge Plan is the HEP, where hedge targets are reevaluated each year, and risk-responsive strategies are executed on an iterative basis. These changes, including the continued evolution of the Company’s quantitative metrics, are discussed in Sections V and VI.

## V. 2021 HEP Meeting and Final Recommendations

On April 27<sup>th</sup>, 2021, G&A and the CNGC Hedge Project Team provided an overview of the 2021 HEP for GSOC’s consideration. During the meeting, GSOC was informed of the administrative change presented in Section IV of this document [REDACTED]

[REDACTED] GSOC also engaged in a healthy discussion about the relationship between the hedges covered by the Hedge Program and Cascade’s existing leased storage. Ultimately, following ample discussion and clarification, GSOC authorized the CNGC Hedge Project Team to proceed with the Hedge Project Team recommendations for the 2021 HEP as presented. Figure 9 shows the final end-of-season hedge volumes (as a percentage of forecasted usage):

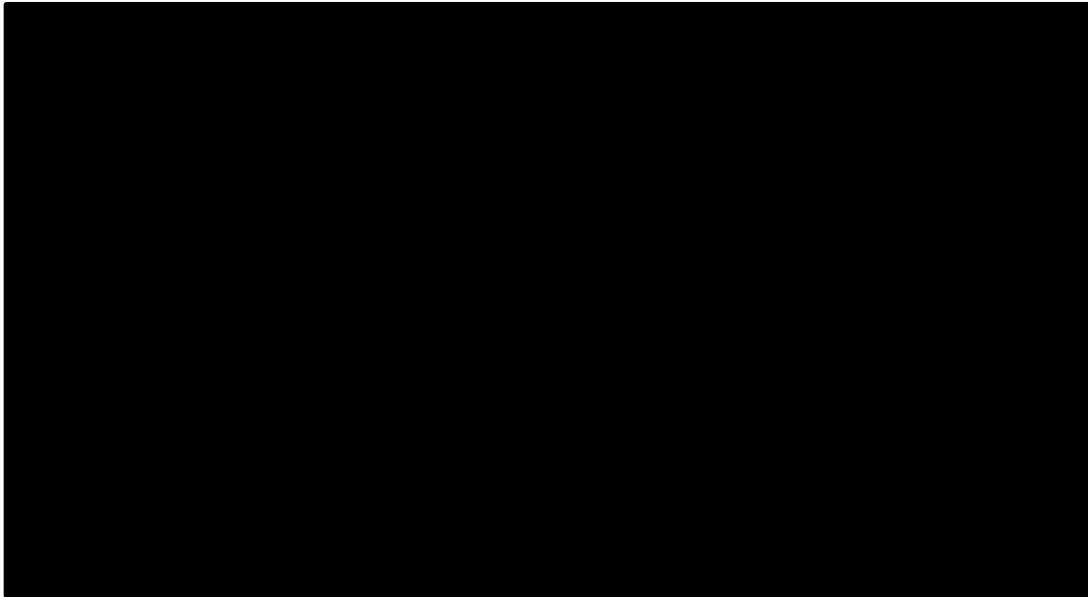
*Figure 9: CNGC Hedge Program Ladder and 2021 Targets*



[REDACTED]

For clarification, the hedge minimum, maximum, and targets are calculated as percentages of forecasted annual usage provided by the Resource Planning team. Hedge percentages are treated as a portion of the larger percentage of base supply (80% in Year 1, 60% in Year 2, and 20% in Year 3) that CNGC contracts based on Portfolio Design targets (see Figure 10).

**Figure 10: CNGC 2021 Portfolio and Hedge Targets as a Percentage of Annual Usage Forecast in Dekatherms**



CNGC successively implemented its first financial transaction in Q3 2019 and again in Q3 2020. Going forward, G&A recommends further increasing the percentage of hedges covered by financial swaps to offer additional flexibility and reduce the costs of hedging, eventually covering 15-20% of the portfolio with financials. After requesting quotes for call options in late 2020, it was determined that a transaction was not practical at the time. However, this instrument would have proven valuable at times in the recent 2020-21 winter. In the coming year, G&A recommends working with counterparties once again to create a viable market for call options in the Pacific Northwest.

All volume added above the minimum hedging percentage is recognized as a discretionary hedge. However, hedging below the maximum volume percentages is a recognition of the lack of an overriding bullish signal that would cause price spikes in the coming year. Thus, splitting the minimum and maximum hedge percentages mitigates upward price risk while minimizing risk of hedge losses. This approach also acknowledges the high level of uncertainty currently in the market and will offer additional flexibility should market conditions shift quickly.

## VI. Data Driven Hedging

### Programmatic Hedges:

The programmatic portion of CNGC's Hedge Program consists of two main components. The minimum hedge percentage requires that CNGC cover at least a portion of its expected purchases in Years 3 to 1 (5% after Year 3, 10% after Year 2, and 15% prior to Year 1). Additionally, the accumulation of hedges on a calendar schedule, in accordance with each Monthly Guidance, is also considered programmatic.<sup>2</sup>

### Discretionary Hedges:

Non-programmatic (discretionary) hedges are data-driven decisions that CNGC makes above the minimum purchase boundary each hedge year. Data-driven, discretionary hedges now fall under two categories within the CNGC program: market-based and risk-based recommendations.

Naturally, if prices are expected to increase in the medium-term, analysis and forecasting will recommend a higher hedge percentage in a certain month, and vice versa if prices are expected to fall. Key market metrics for forecasting such fluctuations include, but are not limited to, US storage levels, weather forecasts, production outlooks, LNG exports, fuel switching for power generators, and a host of other fundamental factors. G&A plays an active role in providing and shaping market intelligence when hedge decisions are made in this way. On the risk side, a Value-at-Risk (VaR) model developed by G&A and operated and expanded by CNGC contributes to hedge decisions that are forecasted to reduce the overall exposure of CNGC's portfolio to both upward and downward price fluctuations.

### VaR and Risk Calculations:

To effectively manage and respond to price risk, CNGC must understand and measure the risks in its hedge book. The first step was the creation of the CNGC Book Model. The CNGC Book Model contains CNGC's hedges, which includes fixed-price physical purchases and financial instruments (swaps and call options). The Book Model calculates the volume of gas that is hedged and the volume of gas that is unhedged using forecast data from the most recent IRP load demand models. The hedged and unhedged portfolio is calculated for the next three hedge years for each of CNGC's three supply basins. These figures, along with a hedge schedule, create volume recommendations for the HEP and the Monthly Guidance. Comparing the portfolio to the current market allows for mark-to-market calculation of the hedges already completed.

Over the past several seasons, CNGC has worked diligently to develop and expand its ability to quantify various risk metrics. The premier result of these efforts has been the integration of robust VaR calculations into each month's recommendations. The underlying principles of CNGC's VaR modeling are straightforward. The volume of gas that will need to be purchased and is not hedged presents an upward price risk for CNGC's customers, as they will need to pay more if natural gas prices rise. Conversely, the hedged portion of CNGC's portfolio presents a downward loss risk to CNGC hedge book if prices decline. G&A and CNGC have developed two different but interrelated but methods for calculating VaR. The "VaR to Life" segment of the models looks at each futures contract in CNGC's portfolio and calculated the potential risk through the life of the contract, and the "VaR Monthly" model looks at a shorter-time period, calculating

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<sup>2</sup> This is consistent with the definition of a programmatic hedge from Gettings White Paper page 19 as referenced on page 10 of Docket UG-132019.

the potential exposure of CNGC's entire portfolio over a one-month time frame. Both VaR calculations are made using a proprietary Monte Carlo method with formulas and factors derived from historical pricing behaviors. CNGC and G&A, the primary developer of the VaR model, have given special consideration to the independent trading behavior of CNGC's procurement basins.

The CNGC Book model and the VaR modeling are updated prior to HEP and Monthly Guidance discussions. This allows for dynamic analysis of current market information. In summary, the VaR results provide GSOC and Gas Supply with potential losses, of a set probability, for both the hedged and unhedged portfolio. The Monthly Guidance also indicates favorable months to hedge based on which months provide the greatest net risk reduction. These calculations influence decisions. A goal of the VaR calculation is to balance VaR-down of CNGC's hedged portfolio with the VaR-up of floating volumes and to ensure that the Company is aware of the potential exposure of CNGC's portfolio to extreme price events in either direction. A proper balance provides a safeguard against a hedge position which would be opposed to the natural market position of CNGCs customers. In other words, lower price should be a benefit for gas consumers.

## **VII. Procurement Strategies**

CNGC's GSOC oversees the Company's gas supply purchasing and hedging strategy. The Company's current gas procurement strategy is to have physical gas supplies under contract for 80% of year one's estimated core needs. Under this procurement strategy, roughly 10% of the winter load would come from storage utilization while the remaining amount of the portfolio will be met with spot purchases. Spot purchases consist of either First of the Month deals, executed during bid week for the upcoming month, or day purchases which are utilized to meet incremental daily needs.

CNGC's goal is to have a gas procurement strategy which achieves diversity and flexibility in its gas supply portfolio through a combination of index based physical, fixed price physical structures and financial derivatives such as swaps and options. This goal encompasses not only supply basin origination and capacity limitations, but also includes a combination of pricing options that will assist CNGC in minimizing exposure to price volatility. The buying approach to locking in a significant portion of gas prices maintains a balanced supply portfolio that continues to represent stable pricing as well as secure physical supplies for the Company's core customers.

CNGC employs a number of processes when procuring fixed-price physical and indexed-priced spot physical. There is a separate process for financial derivatives as discussed throughout this Hedge Plan.

### **Physical Supply**

CNGC utilizes TruMarx's COMET transaction bulletin board system to assist in communicating, tracking and awarding most activities involving the Company's physical supply portfolio. In the procurement process for physical natural gas the Company posts an RFP to its 25+ physical supply parties to solicit offers on needed supply. The Company then collect bids from these parties over a period, depending on the number or time requirements of the packages sought, comparing the indicative pricing to each party as well as comparing the information to market intelligence available at the time. Ideally, after monitoring these indicatives and

the market, CNGC awards the posted packages. Note that posting on COMET does not obligate CNGC to execute any proposal made by physical suppliers.

Naturally, price is the principle factor; however, CNGC also considers reliability, financial health, past performance, and the party's share of the overall portfolio as to ensure party diversity. It should be noted that there is always the possibility the lowest market price may be during period when the Company is initially gathering the price indicatives; in that situation there is a risk that a sudden price run-up may lead to filling the transaction at the higher end of the bids over time or delay the acquisition to another time. However, the reverse is also true—the initial price indicatives may start high and drop over time, allowing CNGC to capture the transaction on the downward swing. In the end, timing is always a factor as the market cannot be perfectly predicted.

Occasionally, an operational situation may occur where time is of essence, such as a need to acquire spot gas to meet sudden swings in load demand or in response to an upstream pipeline operational event. In such situations, CNGC may make a short procurement purchase within a narrow time window to procure and schedule the supply. The Company contacts one to three reliable physical parties to meet these short-term supply needs. Again, price is the principle but not the only driver for the awarding of these supply needs. Also, the Company always encourages physical suppliers to propose other transactions or packages that they feel may be of interest in helping CNGC secure cost effective and operationally flexible transactions to meet CNGC's needs. In addition to analysis using Excel, CNGC also uses the SENDOUT® resource optimization model, which is a useful tool for examining logical, operationally and financially feasible physical packages that best utilizes CNGC's various transportation, storage and operational capabilities.

### **Financial Derivatives**

For financial derivatives, CNGC contacts Company-approved financial counterparties ("counterparties") to request bids consistent with the GSOC approved HEP. Naturally, this process requires additional analysis regarding financial reasonableness, timing, hedging strategy, and volumes. The Monthly Guidance and CNGC Book Model are the primary tools used to identify and analyze potential financial derivatives possibilities. Price comparisons may also become more complicated since pricing could be tiered; part of a structure deal may be tied to an index or contains floors, caps, etc. Bids are received from the counterparties and, similar to the physical portfolio, the Company then collect bids from these parties over a period, depending on the number or time requirements of the packages sought, comparing the indicative pricing to each party as well as applying the information from market intelligence available at the time. Furthermore, G&A uses Marketview, and CNGC has access to ICE. Both deliver real-time market pricing information for hedging transactions. Ideally, after monitoring these indicatives and the market, CNGC will award the specific packages to individual parties. Again, CNGC is not obligated to execute any offer received.



### VIII. Retrospective Report of 2020

As per WUTC guidelines, all LDC Hedge Plans must include a retrospective review of the last year’s hedging results. During CNGC’s last HEP cycle, GSOC authorized Cascade to hedge below the maximum percentage volume allowed by the Program (50% in Year 1, 30% in Year 2, 10% in Year 3). This decision was made based on uncertainty and disruptions caused by the COVID-19 pandemic and surplus storage inventories across the country. Over the period since the approval of the 2020 HEP (April 2020-March 2021), the Cascade Hedging Plan saved customers about \$4.6 million of gas costs compared to the market. Most of the hedging gains occurred in the 2020 heating season.

Figure 11 displays monthly hedge volumes that were recorded as part of 2020-2021 plan, compared to estimated volumes.

**Figure 11 - Hedged vs Plan**

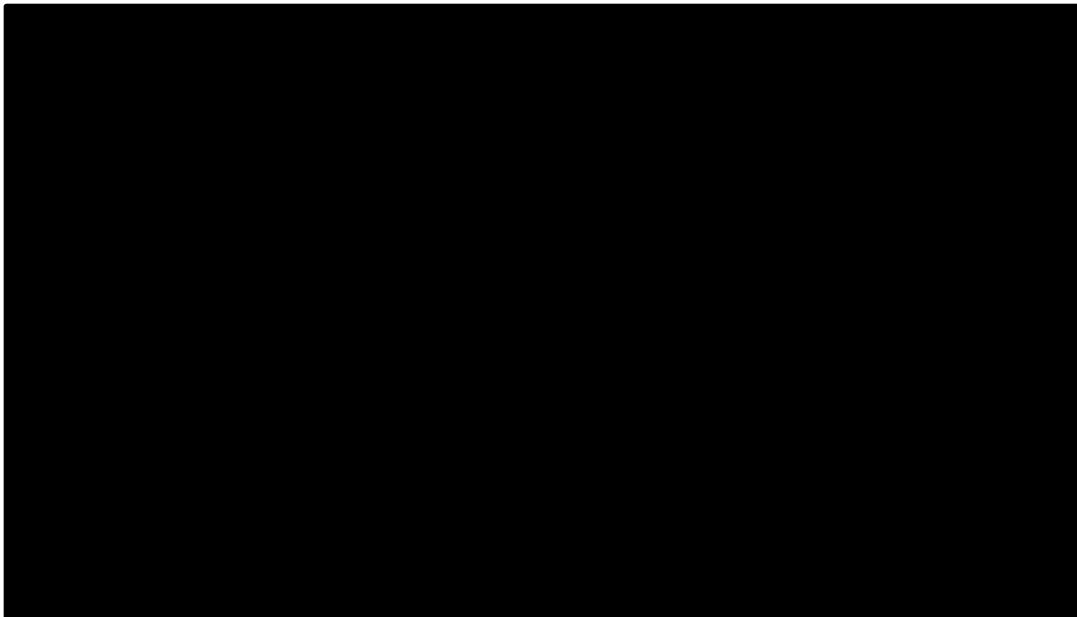


Figure 12 provides tabular results of the volume and weighted-average cost of hedges and their gain or loss compared to market prices. Detailed results of the retrospective performance of each hedge can be found in the retrospective analysis appendix.

*Figure 12 - Hedge Plan Results*

## IX. Market Summary

The following sections contain forward-looking statements based on the current market opinions of its authors. These views are subject to change and are used for informational purposes only. In G&A's annual Natural Gas Price Forecast, several drivers of the natural gas market were identified. There are many pricing factors at play for the remainder of 2021:

- Recovering domestic US gas production.
- Demand growth, particularly in exports of LNG and pipeline gas to Mexico, balanced by reduced power generation due to higher prices.
- Below-average storage levels expected throughout the injection season.
- Continued global economic rebound from the effects of the COVID-19 pandemic.

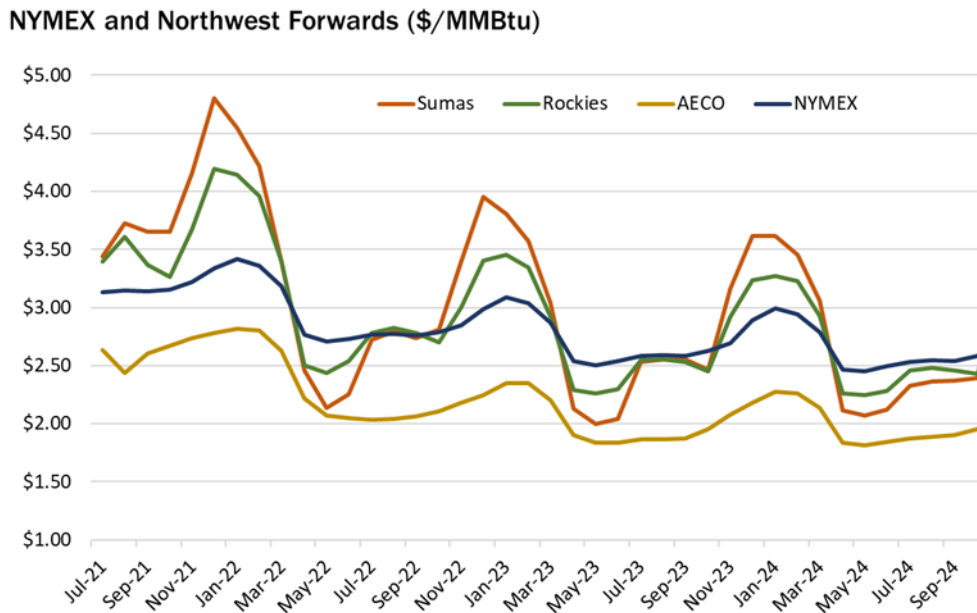
In 2020, the market reeled from the effects of COVID – US LNG export demand, for the first time in its short history, faced cargo cancellations as international demand for the fuel evaporated. Nearly 200 were canceled over the entirety of the summer. At its height, LNG demand fell by an unprecedented 60%. Industrial demand would also crater. Lower demand on top of a bountiful storage inventory from 2019 forced prices downward, erasing profitability for many producers. Meanwhile, a simultaneous oil price collapse severely cut drilling and associated gas volumes. By June of 2020, US natural gas production had fallen to around 85 Bcf/D from a record of 96 Bcf/D in November 2019..

In mid-2021, U.S. natural gas production has largely recovered from last year's collapse but remains suppressed, in line with volumes from June of 2019 near 91 Bcf/D. While pure dry-gas producing regions have somewhat offset declining gas production from oil-centric supply basins, natural gas is still in what can be considered a recovery stage from its lows in mid-2020. Nonetheless, supportive prices, particularly for

crude oil which recently surpassed \$70 per barrel, suggest that increased drilling activity and associated gas production will materialize in the second half of 2021. On the demand side, there are several important growth sectors as the market continues to recover from COVID-related symptoms. LNG exports, industrial demand and Mexican exports are all key areas of demand growth. LNG exports reached record highs this winter thanks to expanding US export capacity and impressive international demand. Currently, lower than average European storage inventories and robust margins to international markets are expected to prevent a recurrence of cargo cancellations in 2021 and will allow US export volumes to continue to run at near-record levels. Likewise, Mexican exports have steadily increased year-over-year as a result of new pipeline infrastructure and additional end-user demand coming online within Mexico. Industrial demand has done well to steadily recover since mid-2020, and manufacturing sectors are expected to see increased activity as the global economy continues to recover in 2021. Power generators, on the other hand, are expected to limit gas generation relative to coal in the coming summer due to this year’s higher prices.

After beginning the 2020 winter at a substantial surplus, natural gas storage inventories were drawn down below average by fundamental under-supply and a much colder than average weather in February of 2021. Going into summer, total storage remains slightly below five-year average levels and much lower than the same time last year. Given current demand growth and still-stagnant supply, it is likely that inventories will continue to lag behind previous years. The forward curve has recovered notably since 2020. However, G&A currently believes that until stronger production growth and relative higher storage levels return, the market will be at risk of fundamental under-supply and rising prices in 2021. Backwardation on the forward curve suggests additional opportunity for favorable purchases in outer hedging years.

**Figure 13 – NYMEX and Northwest Basin Forwards as of June 9, 2021**



This, and other market intelligence, has informed CNGC deliberations with GSOC and its hedging goals for the coming year. However, a risk-responsive hedging plan must be dynamic enough to continuously react to new developments and inputs. Through its use of the Book Model and Monthly Guidance, discussed earlier, the Company is able to analyze how market developments impact the risk of its hedge targets, and how to adjust to these developments accordingly throughout the year.

## **X. Conclusion**

The 2021 Hedge Plan was designed by the Cascade Hedging Project team under the advisory of Gelber & Associates. The Hedging Program implements processes and analytics that comply with the Washington Utility and Transportation Commission UG-132019 policy statement while simultaneously complying with Oregon Public Utility Commission PGA UM-1286 integrated hedging guidelines. The Hedging Program design establishes a framework that provides flexibility to respond to price risk and market changes. Additionally, the Hedging Program establishes analytical and quantitative metrics through use of the Var to Life and Monthly VaR models. These tools are frequently updated to maintain a risk-responsive view of current market conditions.

The CNGC Hedging Program uses a three-year forward-looking ladder while establishing maximum and minimum percentage boundaries that allow hedge volumes to adjust to market conditions. In addition, the 2021 Hedge Plan recommends the inclusion of financial transactions such as swaps and call options to improve diversity of hedges and reduce the cost of hedging. The Hedging Program requires a HEP each spring which determines a strategy for the coming buying season after reviewing the prior year's performance. Accordingly, on April 27<sup>th</sup>, 2021, GSOC reviewed the proposed HEP and approved the aforementioned changes. To manage hedge purchasing for the 2021 HEP, CNGC will continue referencing the Monthly Guidance document produced by G&A in collaboration with the Resource Planning group. This monthly process includes an update of CNGC's Book Model and the associated mark-to-market and VaR calculations. The report then facilitates information circulation within the Company regarding these metrics and resulting recommendations for the coming month. Furthermore, Guidance documents provide a new level of transparency for decision-making, as can be seen in the included appendix.

While the Company was pleased with its 2020 Hedge Plan, CNGC will look to continually improve its hedge program in a risk-responsive manner, thereby fulfilling the objectives of UG-132019 and providing essential price protection to customers.