



In the Community to Serve®

ANNUAL HEDGE PLAN

(UG-_____)

SEPTEMBER 15TH 2023

Table of Contents

I.	Program Goals	2
II.	Organizational Structure	3
III.	Hedge Program	5
IV.	Material Changes to Hedge Program	9
V.	2023 HEP Meeting and Final Recommendations	100
VI.	Data Driven Hedging.....	13
VII.	Procurement Strategies.....	14
VIII.	Retrospective Report of 2022.....	16
IX.	Market Summary	17
X.	Conclusion	178
XI.	Appendices	
	a. Resource Planning Monthly Guidance – August 2023	
	b. Mark To Market Calculator - 7-20-2022	
	c. Gelber - 2023 Forecast	
	d. 2022 Hedge Plan Process Flow Chart	
	e. Project Team Meeting Minutes - June 2022	
	f. CNGC Book Model	
	g. Var to Life	
	j. Hedge Schedule Chart	
	k. Retrospective Report	
	l. Compliance Matrix	

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 during that timeframe. 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 Commission requested Gettings White Paper¹ 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)² 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 ("Gelber" or "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.

¹ Gettings, Michael, "Natural Gas Utility Hedging Practices and Regulatory Oversight," (Washington Utilities and Transportation Commission Whitepaper, 2015)

² 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 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 the Company Hedge Program, while on June 26th, 2023, the newest Hedge Execution Plan (HEP) was approved. Components of both the Hedge Program and the current HEP are discussed in this document, the 2023 Annual Hedge Plan (“Hedge Plan “or “Plan”).

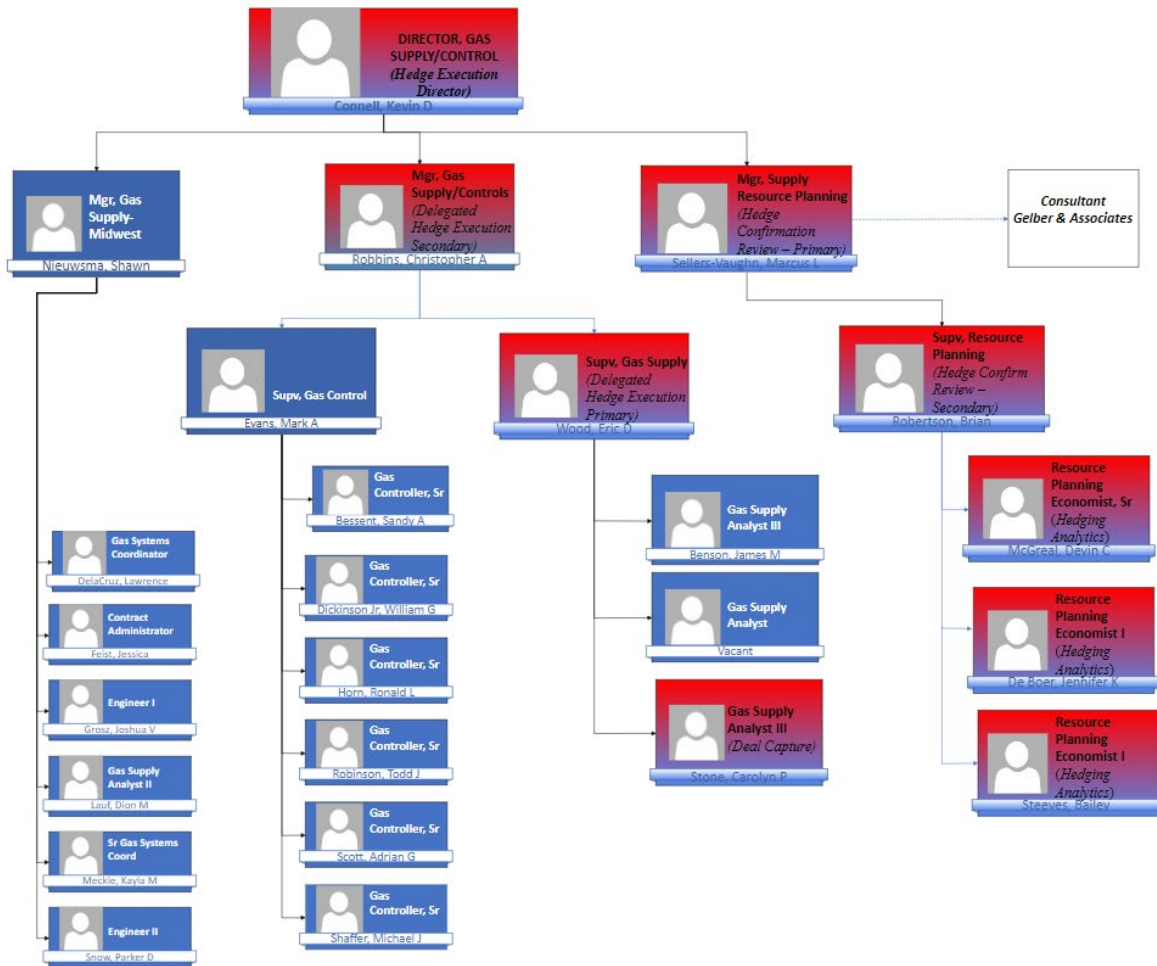
II. Organizational Structure

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 2023 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 (in red).

Figure 1 - Hedge Plan Roles

ROLE	ASSIGNED TO	TITLE(S)
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



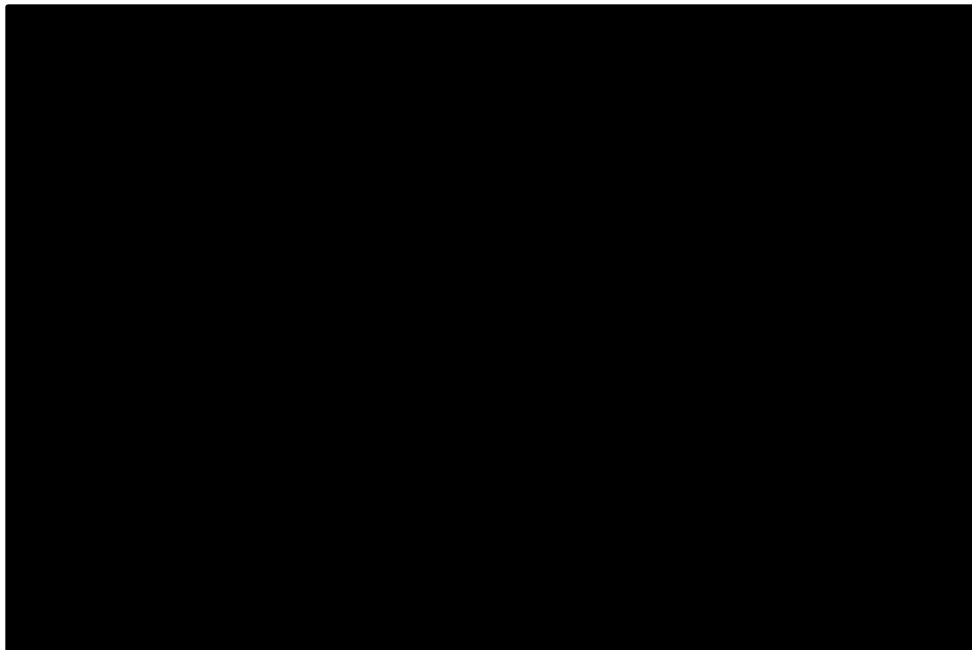
III. Hedge Program

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 2023 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 is 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.



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 approximately 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.

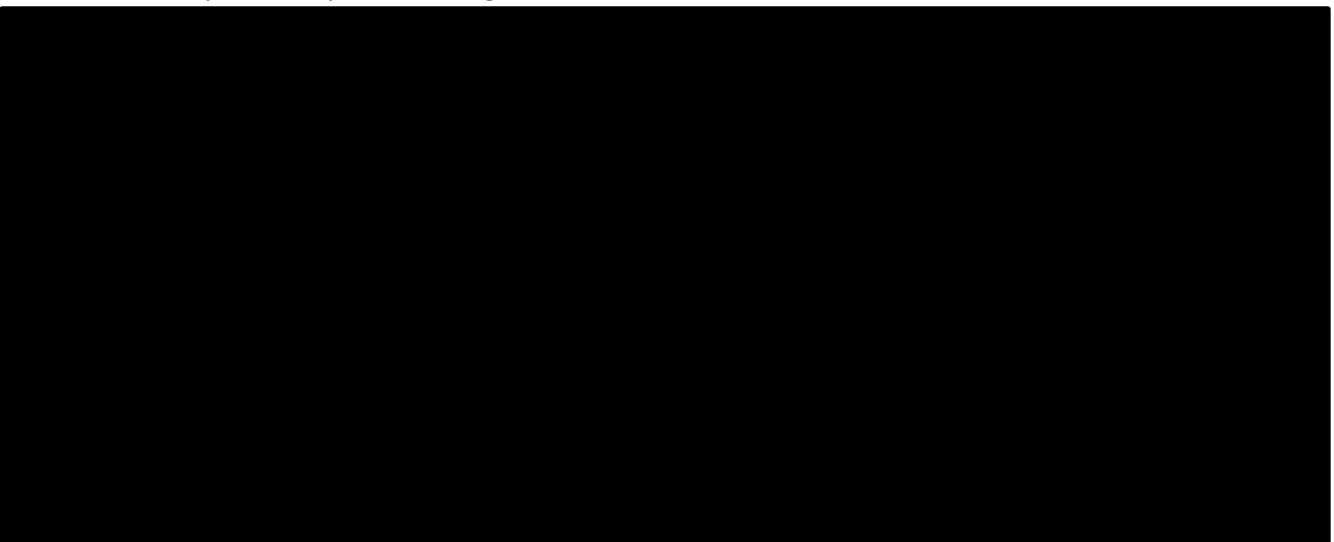
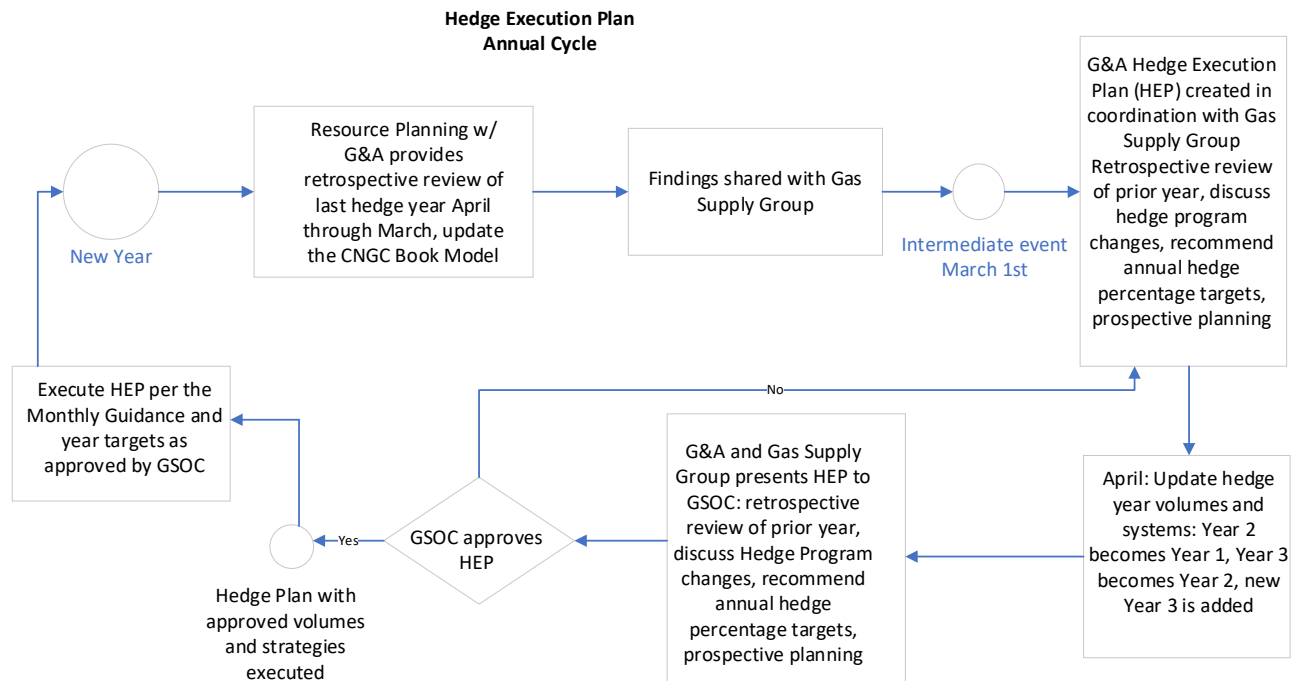


Figure 5 - HEP Annual Cycle Decision Tree



Monthly Guidance and Trade and Execution:

In order to implement the 2023 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 operations, Resource Planning, and G&A.

Figure 6 – Monthly Guidance Decision Tree

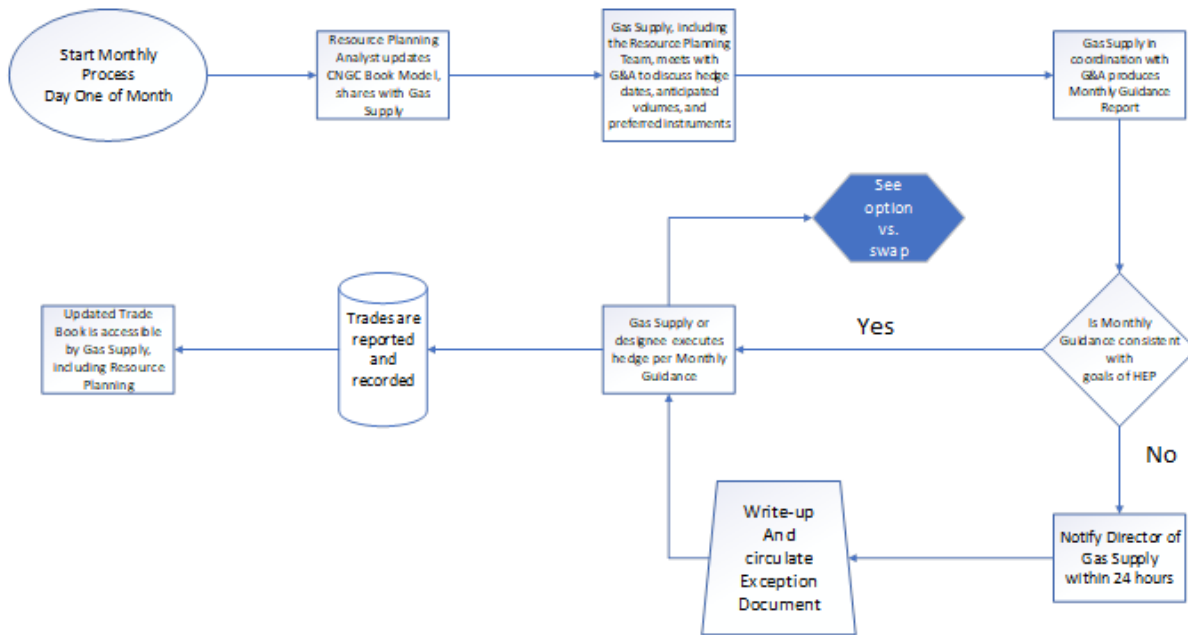
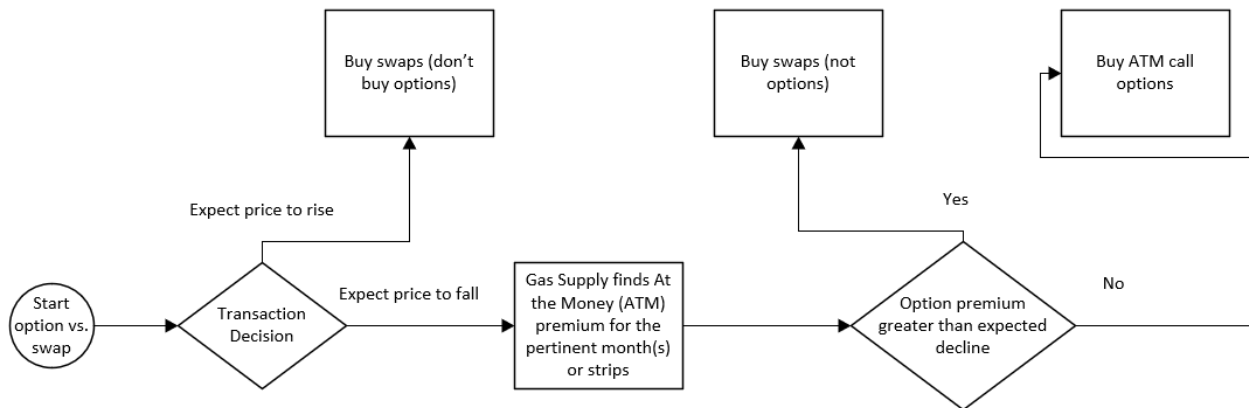


Figure 7 - Call Options vs Swaps Decision Tree

Call Options Purchase vs. Swaps Purchase
 Hedge Decision Flow



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 2023 Hedge Plan, we document two significant changes to the Hedge Program: An increase to the Year 2 and Year 3 maximum allowable hedge volumes from 50% to 55% and 30% to 35%, respectively, and the introduction of Renewable Natural Gas (RNG) purchases as an element of the Company's Hedge Program.

The justification for this change follows the quantitative and qualitative arguments presented in the 2022 Plan. The quantitative argument for increasing the hedge limits revolves around the success demonstrated in the 2022-2023 retrospective report. While the Company was able to provide significant savings to its customers, this value was constrained by the maximums in place during the 2022 Hedge Season. Increasing the caps do not guarantee that the Company will hedge more, as Cascade's Value at Risk models continue to recommend hedges only when market conditions indicate it is favorable to do so from a risk mitigation perspective. The qualitative argument for increasing the cap builds on the successes seen in the first three 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 and the Annual Hedge Plan, continuing to increase the Year 2 and Year 3 caps signals to internal and external 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. Finally, the 2023 Plan proposes changing the hedge targets from a single number to a range. Functionally speaking this is not a change from prior plans, as the bands in the 2023 plan have a width of 10%, which aligns with the 5% tolerance to finish above or below the target in previous programs. Optically, this affirms the Company's position to be risk-responsive by acknowledging that Cascade will want to adjust where the Company will want its hedge volumes to ultimately fall within the bands as market conditions manifest over time.

With RNG being an integral part of the Company's plan to comply with both the Climate Commitment Act in Washington and Climate Protection Program in Oregon, Cascade expects its RNG portfolio to significantly increase in the coming years. RNG should be thought of as the combination of two elements: The environmental attribute of the gas (Renewable Thermal Credit or RTC) and the brown gas molecules. Similar to conventional natural gas, the price of the brown gas can be tied to an index, a fixed price, or a combination of the two. Fixed price RNG purchases are a hedge against rising prices, but the value of this gas cannot be evaluated with the analytics discussed in this plan, as most of the value is in the environmental attributes associated with the gas versus the gas itself. That being said, by evaluating deals where Cascade is purchasing solely the environmental attributes (RTC only deals) as well as projects where the Company acquires both the RTC and brown gas, the Company is able to isolate and value the individual elements of these deals. Using Cascade's RNG Cost-Effectiveness Evaluation Model:

$$C_{RNG} = I_{RNG} - AC_U - AC_D + \sum_{T=1}^{365} (P_{RNG} + VC - P_{Conventional} * Q)$$

Where:

C_{RNG} = The all-inclusive annual cost of a proposed RNG project

I_{RNG} = The annual required investment to procure a proposed RNG resource. If Cascade is simply buying the gas and/or environmental attributes, this value is zero.

AC_U = Avoided upstream costs

AC_D = Avoided distribution system costs

P_{RNG} = Daily price of renewable natural gas being evaluated

Q = Daily quantity of gas being evaluated

VC = Variable cost to move one dekatherm of gas to Cascade's distribution system. This value can be zero if a project connects directly to the Company's system.

$P_{Conventional}$ = The price of conventional natural gas, can be bundled into the price of RNG or separate.

The Company is able to identify the $P_{Conventional}$ element of the RNG deal and use that to create the hedge value of the brown gas portion of the deal. Cascade does not currently have any deals structured in this manner, but anticipates that this may be an element of the 2024 Hedge Plan

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.

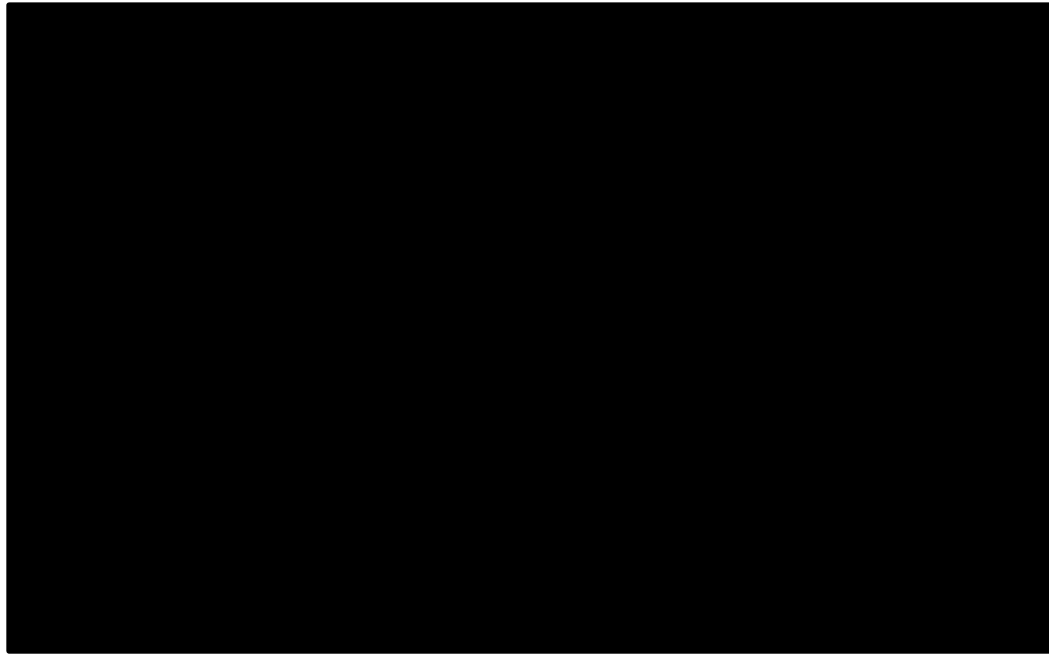
V. 2023 HEP Meeting and Final Recommendations

On June 20th 2023, Cascade presented its Gas Supply Oversight Committee (GSOC) with the recommendations detailed in this Plan via E-mail. The requested action was for GSOC to approve the Plan, specifically as follows:

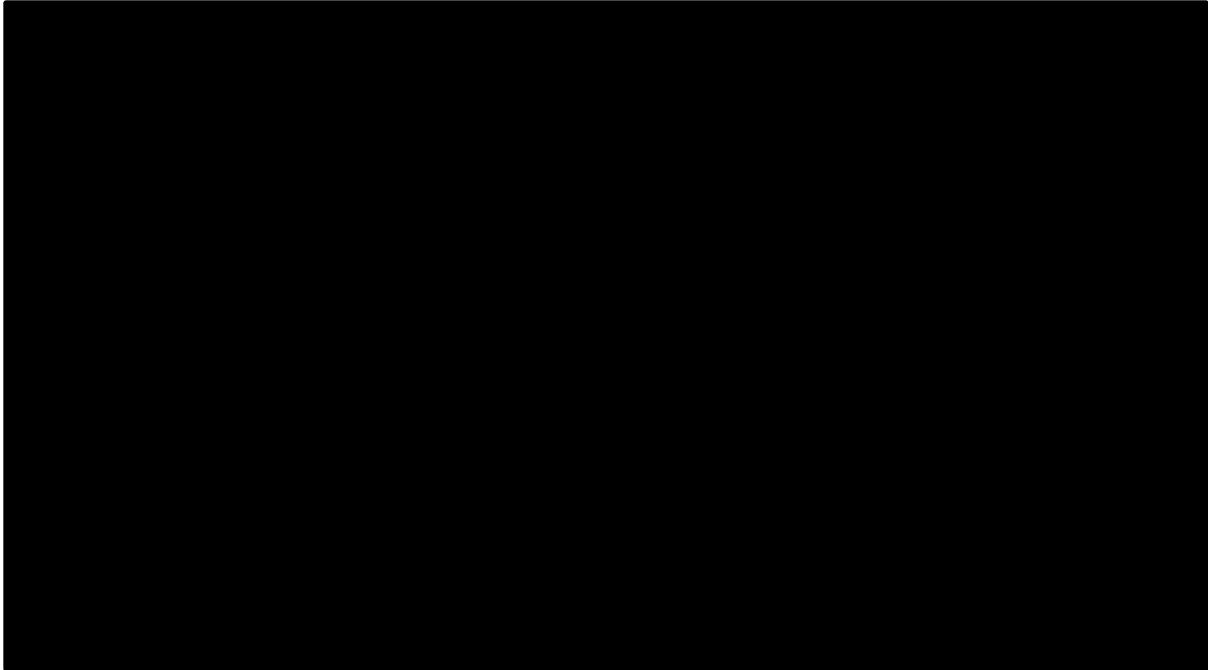
[REDACTED]

GSOC members voted over the course of a week, and on June 26th 2023 the authorization was confirmed via a unanimous 6-0 vote.

Figure 8 shows the final end-of-season hedge target volumes (as a percentage of forecasted usage):



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 [REDACTED]



GSOC will be informed (via email and return receipt) prior to notable deviations from recommendations in the preceding HEP. Notable deviations include changing end of year hedge percentage targets by greater than 5%.

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 [REDACTED]. Additionally, the accumulation of hedges on a calendar schedule, in accordance with each Monthly Guidance, is also considered programmatic.³

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 is 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 methods for calculating VaR. The "VaR to Life" segment of the models looks at each futures contract in CNGC's portfolio and calculates the potential risk through the life of the contract, and the "VaR Monthly" model looks at a shorter-time period, calculating

³ 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, has given specific 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 principal 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 a 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 principal factor 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 Plexos® 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 to assist with price discovery. 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 2022

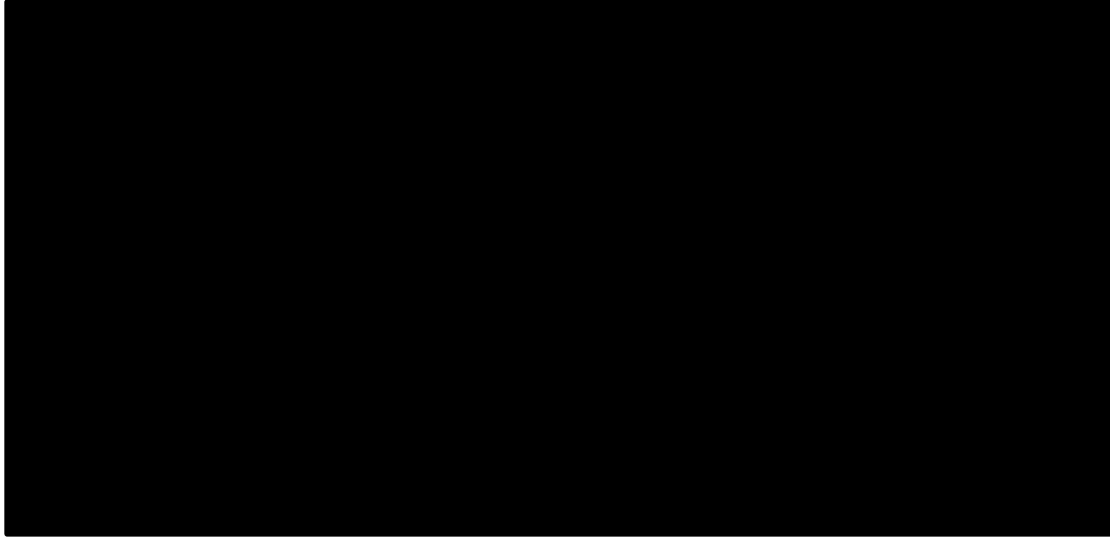
As per WUTC guidelines, all LDC Hedge Plans must include a retrospective review of the last year’s hedging results. During CNGC’s last HEP cycle, GSOC authorized Cascade to hedge [REDACTED]

[REDACTED]



Figure 11 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.

⁴ Savings estimates based on hedge costs compared to monthly index prices at each supply basin. See table in the appendix (page 10) for a monthly breakdown.



IX. Market Summary

The following sections contain forward-looking statements based on the current market opinions of its authors. However, these views are subject to change and are used for informational purposes only. Gelber & Associates has identified several primary drivers of the natural gas market in its annual Natural Gas Price Forecast. For 2023, there are four key identified pricing factors at play:

- Steady and robust production very near 100 Bcf/d.
- Demand growth from a) record LNG exports and b) increased reliance on natural gas power generation over coal.
- Above-average storage levels throughout the 2023 injection season.
- International risks associated with the Russia-Ukraine conflict and potential disruptions to global energy supplies.

In the early months of 2022, US dry natural gas production experienced some fluctuations, hovering around 96 Bcf/d before steadily climbing during the summer and autumn. By the end of the year, production reached record levels above 102 Bcf/d. However, in light of recent declines in NYMEX gas futures prices below break-even levels of approximately \$3.00/MMBtu, the future of gas production in 2023 is anticipated to be stable around 100 Bcf/d. Production growth is expected to be limited depending on producers' willingness to operate in a nominally unprofitable environment. However, crude oil prices remain high, which provides incentives for exploration and production efforts in associated gas areas like the Permian Basin. Furthermore, wellhead liquids have traded at a premium throughout 2023, supporting production further. The possibility of additional production volumes in gas-focused basins will become clearer in the coming months as natural gas producers position themselves for several large LNG capacity additions, slated to come online in mid-2024.

G&A forecasts a decline in NYMEX Henry Hub futures prices in the short term, reaching a low of around \$2.25/MMBtu in early October, followed by a bullish trend pushing gas futures back up to the \$3.50/MMBtu

range. It is expected that prices could average approximately \$2.85/MMBtu for the year. In 2024, prices are expected to further recover to the \$3.50-4.00/MMBtu range with the emergence of additional LNG demand centers and natural gas-fired generation capacity additions.

Regarding LNG exports, the US has experienced a period of capacity underutilization during the 2023 Summer period. This was caused largely by routine maintenance, seasonal slowdowns, and corporate positioning. Despite the pullback in export volumes, sitting at nearly 3 Bcf below the highs as of August 2023, a strong recovery is expected throughout the remainder of 2023. In Q2 and Q3 of 2024, Plaquemines LNG and Golden Pass LNG facilities are slated to come online, adding nearly 3.5 Bcf/d, or 25% more capacity, to the US export fleet.

Over the beginning of this year, demand for natural gas was largely driven by weather-related factors and economic slowdown, as evidenced by low levels of residential/commercial and industrial demand relative to prior years. As for electricity generation, there may be a small decline power generation demand due to a slowdown in the US economy, but the relatively low cost of natural gas is also keeping generators hooked to natural gas and not switching over to high-priced coal.

The current gas storage surplus is expected to continue throughout the remainder of the injection season as forecasted mild winter weather results in larger-than-normal builds through October and November. This year marks the highest surplus since November 2020, which coincided with similarly low-price levels for NYMEX gas futures. As of mid-August, the gas storage surplus sits at nearly +550 Bcf relative to the same week in 2022. Looking toward the end of the injection season, G&A anticipates a peak total of 3.89 Tcf in storages during the final weeks of November, which can be accompanied by downside price risks. The National Weather Service has reported that in the early months of 2023, climate patterns switched into an El Nino year. This climate pattern generally leads to wet summer weather in the southern US, a very mild Atlantic hurricane season, and warm winter weather in the northern tier. While the Atlantic has exhibited above-average hurricane activity during the month of August, temperatures during this winter are still anticipated to be warm, following a typical El Nino fashion.

Despite G&A's view that fundamental supply and demand balances are at a comfortable equilibrium this year, external risks to market prices have been increasingly prevalent and are expected to continue as the war in Ukraine continues, inflationary stresses affect consumers and the COVID virus poses public safety concerns. Furthermore, hurricane risks are elevated this year which poses the risk of a significant bearish black-swan event. These things and other as-yet-unknown wildcards can present significant uncertainty to current market pricing expectations. G&A and CNGC will remain responsive to these risks while executing the anticipated 2023 hedge strategy.

X. Conclusion

The 2023 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 2023 Hedge Plan recommends the continued 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 June 26th, 2023, GSOC reviewed the proposed HEP and approved the aforementioned changes. To manage hedge purchasing for the 2023 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 an additional level of transparency for decision-making, as can be seen in the included appendix.

While the Company was pleased with its 2022 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.