CASCADE NATURAL GAS CORPORATION®
A Subsidiary of MDU Resources Group, Inc.

In the Community to Serve®

CASCADE NATURAL GAS

ANNUAL HEDGING PLAN

(UG-_____)

SEPTEMBER 11TH, 2019

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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. 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, Cascade 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 hedging's benefit to ratepayers 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.
- WUTC expects LDCs to make reasonable progress in developing a more sophisticated risk management framework, targeting the submission of the 2019 PGA filing to contain plans that exhibit the full hedging strategy to implement for 2020 and beyond.

In response to Docket UG-132019, Cascade's Gas Supply Oversight Committee (GSOC)[1] 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

[1] Cascade'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.

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.

After a year of work, with assistance from G&A as well as input and buy-in from management, WUTC staff, and other parts of the Cascade organization, the Cascade project team completed its development of a new hedging program. This new hedging program was designed to satisfy the WUTC's objectives in a manner that is feasible and economical given Cascade's size, structure, expertise, and customer base. In January of 2019, GSOC approved the new hedging program. Components of the new hedging plan are discussed in this document, the 2019 Annual Hedge Plan.

On April 29th, 2019, Cascade received Acknowledgement on its 2018 Annual Hedging plan. In the Acknowledgment Letter, the WUTC identified key areas that Cascade can improve its subsequent plans. The Company appreciates this feedback and has included in an appendix to the 2019 Hedge Plan a summary that clearly identifies how this plan incorporates the recommendations given by the Commission.

II. Organizational Structure

Cascade's GSOC has ultimate authority over the Company's Hedge Plan. This power is granted by the Company's Policy Management Committee. Key members of Cascade's Gas Supply department are responsible for executing the strategy set by GSOC, while individuals in Gas Supply and Resource Planning serve in control and audit roles. Figure 1 outlines the personnel that will be responsible for oversight, execution, and control for the 2019 Hedging Plan. Figure 2 provides a condensed organization chart for the Director of Gas Supply and individuals that report to him that are responsible for executing the Hedge Plan.

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 Cascade'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
Hedge Execution Director	Kevin Connell	Director, Gas Supply
Delegated Execution Primary	Eric Wood	Supervisor, Gas Supply
Delegated Execution Secondary	Chris Robbins	Manager, Gas Supply & Controls
Deal Capture	Carolyn Stone	Gas Supply Analyst III
Confirmation Review	Mark Sellers-Vaughn	Manager, Supply Resource Planning

Figure 2 - Hedge Team Organization Chart

III. Hedge Program

The Company's Hedging Program for 2019 was greatly modified in large part to satisfy the objectives laid out in UG-132019. The philosophy behind the recommended program is to accomplish the following goals:

1. Provide essential price protection against adverse price increases which have detrimental impacts for Cascade ratepayers.
2. Make the program more "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 Cascade personnel.

The 2019 Hedging Plan utilizes a three-year forward-looking ladder that is very different than the traditional set-it-and-forget it hedge ladders. The current hedge ladder gives a large amount of flexibility on the volume of gas hedged. The final hedge percentage can vary from 15% to 60%. It is structured such that GSOC provides buy-in on critical hedge decisions and is provided with risk and market analysis. At the same the Gas Supply team remains the executor of hedges and retains the ability to make cost effective decisions within set the limits. GSOC is notified when notable deviations[2] occur or are requested in the hedge program. Allowing for and creating a structure for large changes in the program allow the program to remain risk-responsive.

The Company believes that financials can offer potential cost savings for certain types of hedging and offer greater flexibility and choices with hedging strategies. Therefore, Cascade made a series of changes not just within Gas Supply but within corporate, finance, and accounting groups in order to reintroduce financial hedging after a long hiatus. Within the ladder structure, gas may be hedged using fixed-price physicals, financial swaps, financial call options, or a combination of the three. Both financial and physical hedges may be used together, but it is the summation of all hedge types that determines the hedge percentage of each year in the portfolio.

The 2019 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 V.). Management are made aware of the downside and upside risk of hedging and 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.

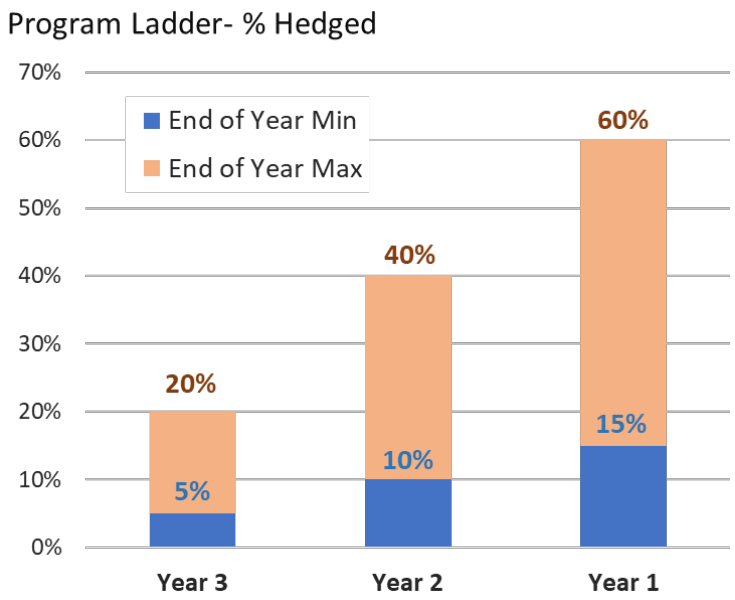
The minimum and maximum boundaries for this annual target are described below, and shown graphically in Figure 3:

- Year 3 – hedge volumes for three years forward to reach a cumulative hedge between 5% and 20% by the end of the year.
- Year 2 – hedge volumes for two years forward to reach a cumulative hedge between 10% and 40% by the end of the year.

[2] A notable deviation is defined is a change of more than 5% in the end of season hedge target.

- Year 1– hedge volumes for the coming year to reach a cumulative hedge between 15% and 60% by the end of the year.
- Hedge percentages includes the summation of physical fixed-price purchases, financial swaps, call options, or any instrument that fixes prices in advance before bid-week.
- The annual percentage target for hedge transactions is decided upon once a year according to the schedule described later.

Figure 3 - Program Hedge 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 Hedge Execution Plan (HEP) is created before April of each year by Cascade's Resource Planning group, in association with Gas Supply, 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 Gas Supply Oversight Committee is convened to seek approval to move forward with the plan and will cover 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 Cascade'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.

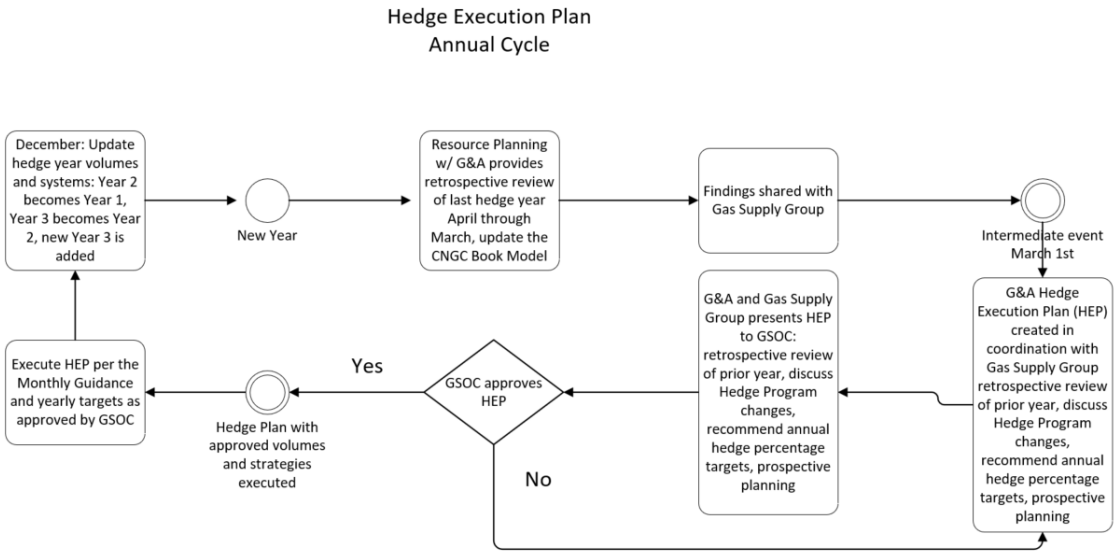
   c. The volume distribution of purchases through the hedge year to get to the end of season hedge goal.

   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 2019 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 Cascade's Resource Planning team, who will be responsible for tracking and updating the Cascade book and various associated risk metrics, and the Gas Supply team, who will be executing the recommended hedge transactions. In addition, Monthly Guidance provides documentation and transparency for future internal or external review.

At the beginning, or just prior to the start of each month, the Resource Planning group within Gas Supply, with assistance from Gelber & Associates, will provide the Supervisor of Gas Supply with a Monthly Guidance. The Monthly Guidance gives recommendations on hedge time, volume, and instrument type. 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 emailed 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. 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.

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 such as AECO 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.

Figure 6 – Monthly Guidance Decision Tree

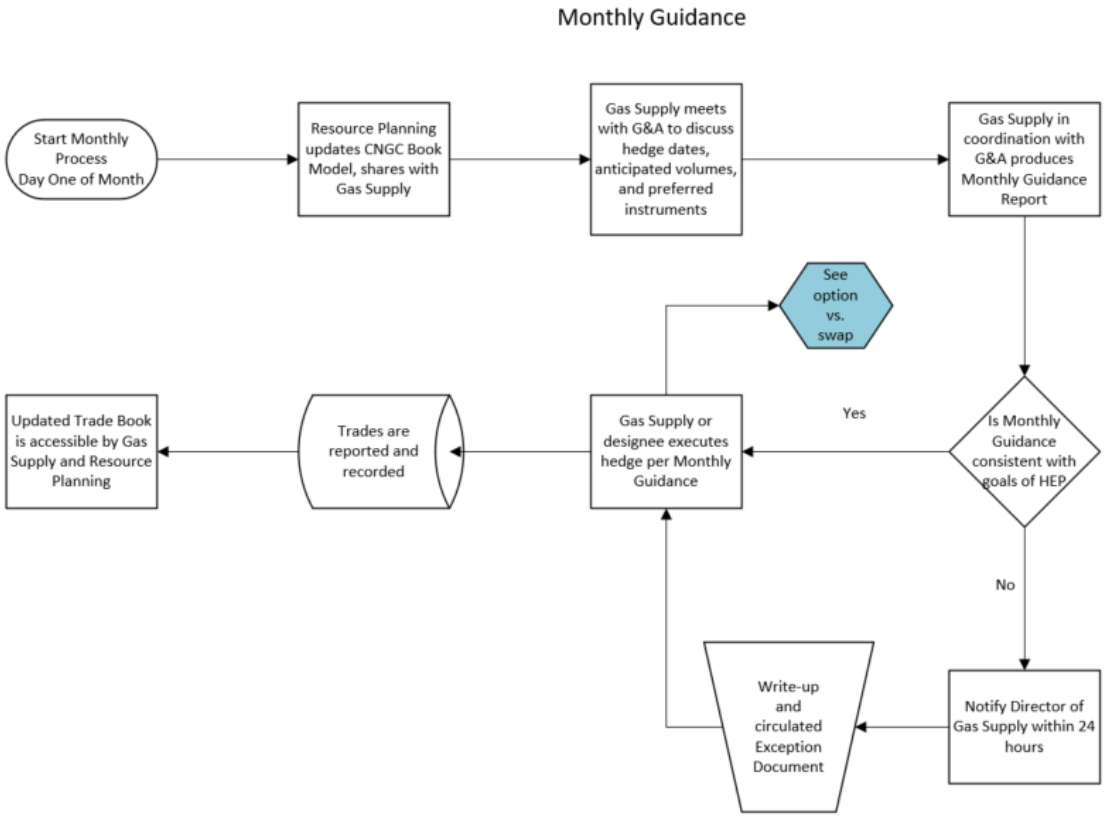
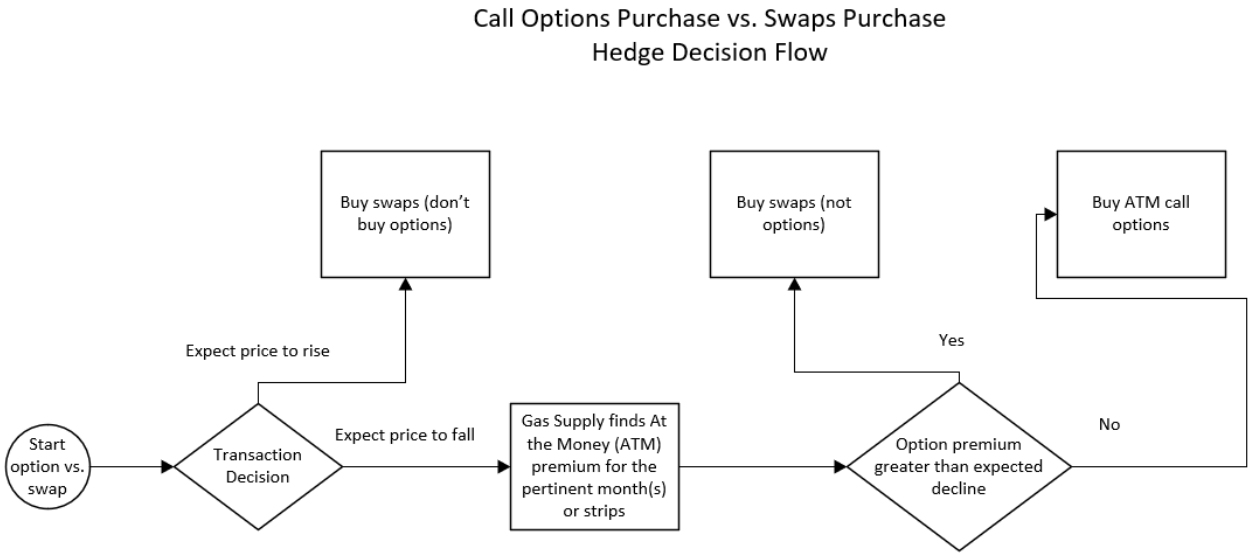


Figure 7 - Call Options vs Swaps Decision Tree



IV. Procurement Strategies

Cascade's GSOC oversees the Company's gas supply purchasing strategy. The Company's current gas procurement strategy is to have physical gas supplies under contract for 80% of year one's warmer- than-normal core needs. Under this procurement strategy, roughly 10 to 20% of the annual 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.

Cascade'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 Cascade 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.

Company employs a variety of methods for securing the best possible deal under existing market conditions. Cascade employs a bidding process when procuring fixed-price physical, indexed spot physical, as well as financial swaps (used to hedge the price of underlying index based physical supplies). In the bidding process Cascade alerts a minimum of three suppliers and/or financial counterparties of the specific gas supply transactions Cascade plans to fill. 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, Cascade will award the specific packages to individual parties. Naturally, price is the principle factor; however, Cascade 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 Cascade to capture the transaction on the downward swing. In the end, timing is always a factor as the market cannot be perfectly predicted.

Cascade follows a similar process when sending a formal RFP to the various suppliers. The Company asks the parties to provide offers on specific packages, but also encourage them to propose other transactions or packages that they feel may be of interest in helping Cascade secure financially attractive and operationally flexible transactions to meet Cascade's needs. Naturally, this process requires additional analysis regarding operational reasonableness, timing, hedging strategy, and volumes. Price comparisons 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. Cascade utilizes TruMarx's COMET transaction bulletin board system to assist in communicating, tracking and sorting RFP activities. In addition to analysis using Excel, Cascade also uses the SENDOUT® resource optimization model which is a beneficial tool in helping to determine the most logical, operationally and financially feasible packages utilizing Cascade's various transportation, storage and operational capabilities. Furthermore, Gelber & Associates uses Marketview and Cascade use ICE's Futuresource application. Both deliver real-time market pricing information for hedging transactions.

V. Data Driven Hedging

Programmatic:

The programmatic portion of Cascade's Hedge Program consists of two main components. First, the minimum hedge percentage requires that Cascade cover at least a portion of its expected purchases in years three to one (5% after year three, 10% after year two, and 15% after final year one). The hedge percentage selected above the minimum is not programmatic. However, the accumulation of hedges are programmatic by purchasing hedges on a calendar schedule in accordance with each Monthly Guidance.[3]

VaR and Risk Driven Hedge Levels:

In order to effectively manage and respond to price risk, Cascade 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 all of Cascade's hedges, which include fixed-price physical purchases and financial instruments that may include 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 usage models. The hedged and unhedged portfolio is calculated for the next three hedge years for each of Cascade'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 performed. 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 CNG's portfolio presents a downward loss risk to CNGC hedge book as losses expand as prices decline. To better quantify these risk measures, VaR (Value at Risk) calculations are made. The VaR calculations are made using a proprietary Monte Carlo calculation with formulas and factors derived from historical pricing behaviors. Cascade and G&A, the primary developer of the VaR model, have had to give special consideration to the independent trading behavior Cascade's basins. Risk calculations based upon NYMEX Henry Hub pricing have been deemed inadequate based on weak correlations in recent years.

The CNGC Book model and the VaR modeling are updated prior to HEP and Monthly Guidance discussions. In summary, the VaR results provide GSOC and Gas Supply with potential losses, of a set probability, for both the hedged and unhedged portfolio. These calculations influence decisions. A goal of the VaR calculation is to balance VaR-down of Cascade's hedged portfolio with the VaR-up of floating volumes and to ensure that the Company is aware of the potential exposure of Cascade'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 Cascades customers. In other words, lower price should be a benefit for gas consumers.

Forecast-Driven Hedge Levels:

Non-programmatic decisions are data driven. Data driven analysis is essential in developing market views and recommendations. This is an important input into the HEP and the Monthly Guidance when percent hedge levels are chosen. Naturally, if the analysis and forecasting suggest that prices will rise, a higher hedge percentage will be recommended and vice versa if the analysis and forecasting suggest that prices will fall.

[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.

Key market metrics for forecasting include, but are not limited, US storage levels, weather forecasts, production outlooks, LNG exports, fuel switching for power generators, and a host of fundamental factors. Some of the data will come from outside sources while other data and analysis will be internal, often from proprietary models. In the early years of the Hedge Program, G&A will play an active role in providing and shaping market intelligence. As the hedging program matures, the Resource Planning Group and others within the Gas Supply Department will take over more of these duties. Development of the specific metrics for data driven market analysis is an ongoing process. Market analysis and forecasting is purposely allowed to evolve to stay connected with the ever-changing natural gas market.

Quantitative Benchmarks:

Tools that utilities use to hedge price risk include swaps, call options, physical fixed-price purchases, and storage. The purchase of call options allows a utility to cap price increases at a specified "strike price". However, utilities must pay the call option premium (price of the call option). Call options premiums are market driven and are a function of the price of the gas to be purchased, volatility, and time until expiration. In today's market, the cost of an "At The Money" (ATM)[4] call option purchased by utilities for the coming winter is typically under 50 cents per MMBtu. This call option premium, with a cost of 50 cents for each MMBtu of gas, covers the cost of hedging the utility's exposure to upward price movements. In this way, the cost of a hedging program would be capped at the cost of the call option premiums regardless of if the market rises or falls. Thus, a hypothetical program purchasing only ATM call options for a specified volume is an example of the cost of "insurance" against rising prices and will serve as a benchmark for CNGC's future hedge program costs.

[4] At The Money (ATM) is a call option in which the strike price equals the underlying the price of the asset, in this case natural gas, at the time of the call option purchase.

VI. Retrospective Report of 2018

A requirement of WUTC is a retrospective review of the last year's hedging results. The hedges made in 2018 where performed using the prior Hedge Plan that GSOC approved in March of 2018. All of the hedges were fix priced physicals and 40% of the season was hedged, which was the maximum hedge amount allowed at that time. Consultant G&A observed and recorded hedges executed in the summer of 2018. Figure 8 displays monthly hedge volumes that were recorded as part of 2018-2019 plan, compared to estimated volumes.

Figure 8 - Hedged vs Plan

Figure 9 - Hedge Plan Results

Last winter's dramatic price increase was an example of a low probability event that directly impacted natural gas prices at Cascade's supply basins and has cemented into the Company's mind the need for metrics to quantify these risks. Updates to Cascade's VaR model for the 2019 Hedge Year consider last year's price fluctuations and the resulting volatility and standard deviation measures when assessing what is possible going forward. Thus, the VaR model's current appraisal of a 2% probability event takes into account past circumstances with a similarly low probability. In addition to these updates, Cascade has improved internal communication regarding the prevailing quantitative metrics and the current position of Cascade's Book Model each month.

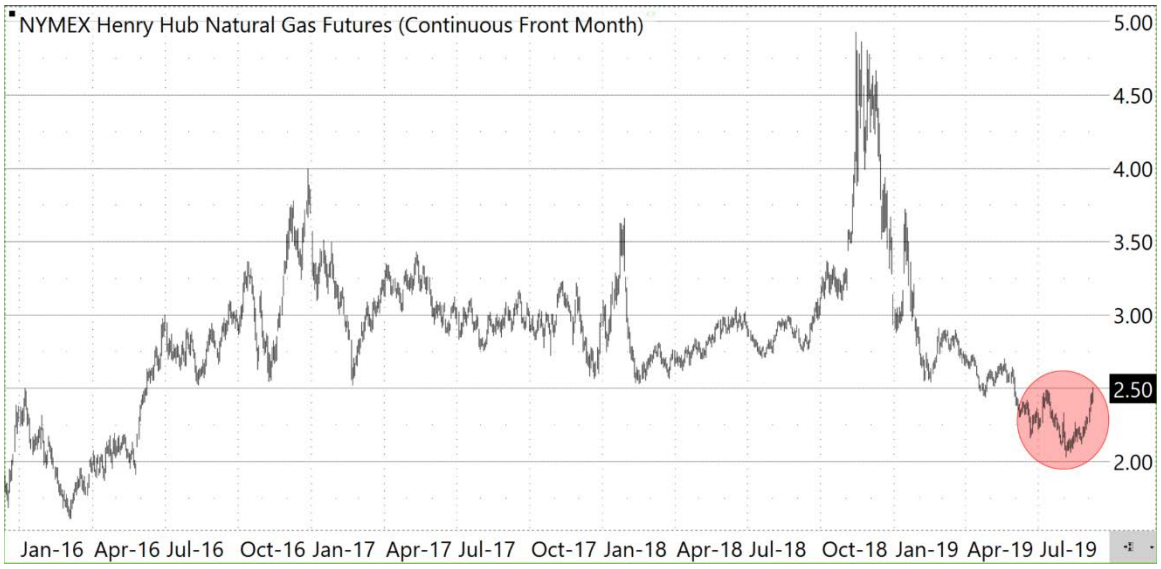
As discussed previously, Cascade was able to mitigate some of the impact of the winter 2018-19 price escalation through the purchase of fixed-price physicals. Nevertheless, Cascade recognizes that the extreme pricing at Sumas due to the Enbridge incident resulted in a significant increase in overall gas costs to be recovered from customers. This issue was a factor considered during GSOC's deliberations regarding the design of the 2019 Hedge Execution Plan. After reviewing last year's results, GSOC was very upfront in its concern that continued uncertainty surrounding the Enbridge pipeline, or a similar low-probability event, could impact pricing in the upcoming winter. With these risks in mind, GSOC recommended to modify next year's strategy to include a higher volume of hedges in Year One, as allowed in the new Hedging Program design (see Section VIII).

VII. Market Summary

A proper understanding of the challenges facing the natural gas markets, specifically in the basins from which Cascade purchases its gas, is crucial to making informed decisions about the timing and quantity of hedging activities. This section provides a snapshot of the most current market intelligence that informs Cascade's Hedging Program. As part of this effort G&A provides daily and monthly reports and a semi-annual Natural Gas Price Forecast to Cascade that identify and monitor short- and long-term price drivers and market fundamentals.

NYMEX Henry Hub benchmark prices have tumbled to three-year lows during the summer of 2019 due to record production and quickly rising storage inventories, as shown in Figure 10.

Figure 10 - Historical NYMEX Henry Hub Pricing



G&A identifies several primary drivers for the coming year's price movements. These include record production, structural demand growth, storage, and fuel switching. Natural gas production is at record levels this year and is expected to be a source of price weakness throughout the coming hedge season. However, there are several significant sources of demand growth that will begin to provide balance to the market. LNG exports, pipeline exports to Mexico, and the power and industrial sectors are key areas of demand growth. Additionally, coal-to-gas fuel switching for power generation is price-responsive and has provided a floor to the market as it has dipped to new lows. U.S. natural gas storage inventories are projected to return to average going into the 2019/2020 winter, but deliverability of gas supplies on peak days remains a concern that can cause price spikes. Overall, the price for natural gas for the winter of 2019/2020 is low by historical standards and the forward curve remains discounted through the next three to four years. This provides abundant buying opportunities for ratepayers, although it does not suggest prices cannot go lower.

Historically, the Pacific Northwest basins of Northwest Rockies, Sumas, and AECO have had a strong correlation with prices in the rest of the country, namely NYMEX Henry Hub. However, this correlation has weakened in recent years due to falling Northwest prices, particularly at the AECO hub. The Enbridge pipeline incident further severed the pricing relationship with the rest of the country as Sumas prices skyrocketed this past winter and also put pressure on other Northwest basins. [redacted]

In another recent market development, on August 20, 2019, Natural Gas World issued a press release discussing TC Energy's recent filing with the Canadian National Energy Board (NEB) seeking approval of a temporary protocol to better enable producers to move gas into storage during maintenance events or planned outages. According to Natural Gas World, TC Energy's existing "…tariff restricts access to storage to only those shippers with firm service on the NGTL system, a constraint that has played havoc with gas prices at the AECO trading hub in southeastern Alberta, at times sending them into negative territory…" TC Energy's application indicates that should the NEB approve the temporary measure, only the 2019 and 2020 maintenance seasons (April-October) would be impacted. TC Energy has asked for the NEB to expedite the application so that it can be implemented by September 2, 2019, or as soon as possible after that date. As implementation of the protocol may directly impact pricing at AECO, the Company and G&A are monitoring the progress of this application and its potential impact to Cascade's supply and hedging portfolios.

This, and other market intelligence, has informed Cascade's 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 Cascade's hedge targets, and how to adjust to these developments accordingly throughout the year.

VIII. 2019 HEP Meeting and Final Recommendations

The 2019 Hedge Execution Plan was submitted to GSOC in early summer of 2019. On July 9, 2019, Gas Supply subsequently convened a HEP review meeting with GSOC and other internal stakeholders. In the ensuing discussion, a plan for the coming year was finalized. [redacted]

As the transition to the new Hedge Plan Program continues, mechanisms for financial transactions are being tested this fall. In the meantime, Cascade has continued to hedge primarily with fixed-price physicals but will implement a financial component during the second half of 2019 as prescribed by GSOC.

GSOC's end of season hedge volume targets are as follows:

- Year 1 (November 2019 through October 2020) - **60%** (from 25% start)
- Year 2 (November 2020 through October 2021) - **40%** (from 5% start)
- Year 3 (November 2021 through October 2022) - **20%** (from 0% start)

For years one, two, and three, the Company will be buying, based on the recommendation from Gelber & Associates and approved by GSOC, at the maximum volume allowed in the new Hedge Program in order to take advantage of favorable pricing on the forward curve and to protect ratepayers against unexpected prices increases, while continuously monitoring hedge loss risk.

IX. Conclusion

The 2019 Hedge Plan was designed by the Utility 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 new Hedging Program design establishes a framework that provides flexibility to respond to price risk and market changes. Additionally, the new Hedging Program establishes analytics and quantitative metrics that will be frequently updated to maintain a risk-responsive view of current market conditions.

The new CNGC Hedging Program will continue to hedge using a three-year forward-looking ladder but establishes maximum and minimum percentage boundaries that allow hedge volumes to adjust to market conditions more flexibly. In addition, the 2019 Hedge Plan introduces necessary mechanisms to use financial transactions such as swaps and call options to improve diversity of hedges and reduce the cost of hedging. The Hedging Program requires an annual Hedge Execution Plan (HEP) each spring which determines a strategy for the coming buying season after reviewing the prior year's performance. Accordingly, in July 2019, GSOC reviewed the proposed HEP and approved the aforementioned changes. Furthermore, GSOC recommended hedging at maximum volumes to reduce the VaR-Up risk that was experienced during last year's hedge season. Simultaneously, GSOC charged the Utility Hedging Project team with continuing to monitor and balance the increased VaR-Down risk that would be invoked at a higher volume of hedging. To manage hedge purchasing for the 2019 HEP, another new process introduced has been the generation of a Monthly Guidance document. 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 that will be included in future retrospective reports.

The actions set in motion by GSOC following the WUTC's release of Docket UG-132019 were accelerated in 2018 and are prepared for full implementation in the 2019-2020 hedge season. Going forward, Cascade will look to continually improve its hedge program in a risk-responsive manner, thereby fulfilling the objectives of UG-132019 and providing essential protection to ratepayers.