



In the Community to Serve®

CASCADE NATURAL GAS ANNUAL HEDGING PLAN

(UG-_____)

SEPTEMBER 28, 2018

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I. Overview/Purpose

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 opportunity 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 techniques (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 also give flexibility that can 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.

Cascade Natural Gas (Cascade, CNGC, or Company) is responsible for obtaining natural gas from suppliers and delivering it to customers. Natural gas is a volatile commodity by nature and unexpected price spikes can cause a drastic increase to the cost of gas, adversely impacting consumers. For this reason, utility companies are actively involved in using risk management techniques, like natural gas hedging, to mitigate price risk.

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. 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, 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 ratepayer exposure to hedging losses. This includes recognizing dual protection from upside price risk and downside hedging loss, 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. While Cascade has considered portions of the White Paper to inform the Company's enhanced risk management strategies, analysis and reporting, Cascade has hired a consultant, Gelber & Associates, to assist the Company in developing the proper risk responsive process and analyses.
- 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.

With the assistance of Gelber & Associates (G&A or Gelber), an energy consulting firm with 30 years of experience in utility hedging, CNGC has reexamined its hedging practices to develop a hedging plan that uses a data-driven approach, and provides the flexibility to manage both upside price risk and downside hedge loss risk.

The purpose of Cascade's 2018 Hedging Plan is to describe the Company's most recently completed hedging year strategy, provide an overview of comparison of executed prices vs the market at the time, describe the conditions affecting the Nov18-Oct19 portfolio and hedging design, ending with an update of the Company's hedging policy implementation plan to meet the objectives outlined in the WUTC hedging policy statement.

Gelber & Associates has been working in close coordination with the CNGC Utility Hedging Project Team to design and implement processes and analytics to comply with the Washington Utility and Transportation Commission UG-132019 policy statement while simultaneously complying with Oregon Public Utility Commission UM-1286 PGA integrated hedging guidelines. The goal of the Project Team is to receive Acknowledgement from the WUTC regarding the appropriateness of the proposed hedging plan structure.

WUTC's Docket UG-132019 requires that hedging programs steer away from inflexible, programmatic practices employed previously become more "risk responsive" and "data driven". WUTC requires an annual hedging plan submission that demonstrate risk responsive strategies in addition to retrospective hedge reporting. Gelber believes and Cascade concurs that the use of a diversified portfolio of hedging instruments including swaps, call options, and fixed-price physicals is the appropriate design criteria to satisfy Commission requirements.

The hedging plan will require annual corporate approval from the GSOC after reviewing the plan's prior year performance and establishing guidelines for purchases in the coming year. While the proposed plan seeks to institute a risk-responsive framework for future hedge purchases, exceptions

to the plan may occur based on changing market conditions. All exceptions will be concisely memorialized before they occur. All features, costs, and cash flows associated with the hedging program are expected to receive proper treatment by the PGA and the rate base.

Cascade believes this hedging policy implementation plan will lead to a more robust risk management analysis, execution, review and reporting, with an eye towards substantive overview of hedging methodologies and reviewing said strategy to identify opportunities for continuous improvement in meeting the Company's risk mitigation objectives.

II. Current Portfolio and Hedging Design

The most significant expense to ratepayers is the gas that the Company purchases to meet customer demand. Cascade recovers only the allowed gas costs from its ratepayers. Allowed gas costs are determined by the state utility commissions. In determining allowable gas costs, the Commissions expect Cascade to employ prudent business practices and have a balanced, diverse and flexible portfolio in place to ensure customers are paying a reasonable price for the gas. Failure to do this may cause the Commissions to disallow recovery of imprudent gas costs within Cascade's rates. Cascade constantly seeks methods to ensure price stability for customers.

Fixed Price Physicals and Risk Management

Because the price Cascade pays for gas is subject to market conditions, the Company participates in hedging techniques within designated parameters to minimize the risk of losses or assumption of liabilities from commodity prices.

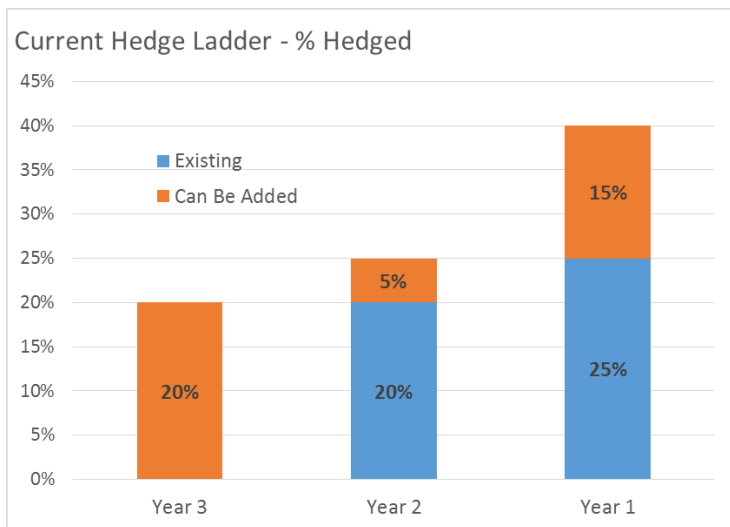
In Cascade's view, risk is associated with business objectives and the external environment. The number of possible strategies to deal with risk is almost infinite. Risk can be categorized as to whether the risk is one to be avoided, one to be accepted and controlled, or a risk left uncontrolled. When a risk is high impact with a high likelihood of occurrence, it is probably too high in relation to the reward and should be avoided. It is reasonable to accept business risks that can be managed and controlled. For some risk, the measurable impact is low and the risk may not be worth controlling at all. These are risks where Cascade can absorb a loss with little effect to ratepayers. Cascade's current policy is directed toward those risks that are considered manageable, controllable and worth the potential reward. The manageable risk requires acceptable analysis of the possible side effects on the financial position compared to the potential rewards.

The current hedging plan for CNGC, approved by GSOC in the spring of 2018, is comprised of 100% physical purchases in a ladder design in which hedges are added and accumulated every year prior to the final consumption of the gas. The natural gas is considered hedged when its price is locked-in and scheduled for delivery in the physical market using a fixed-price physical purchase. The program currently allows up to 20% of expected purchases to be hedged three years prior to delivery, up to 25% hedged two years prior, and up to 40% hedged the year prior to the final consumption of the gas. The portfolio percentage of fixed priced purchases is defined in the Cascade Natural Gas NOV17-OCT18 PGA Hedging Plan dated September 28, 2017.

The gas supply portfolio design is overseen by the GSOC. GSOC determines the framework for the portfolio design including the allowable percentage of fixed-priced purchases. The execution of the portfolio and the hedging plan is accomplished primarily by the Supervisor of Gas Supply, under the

leadership of the Manager of Gas Control & Supply for the Western Region. Either the Supervisor or Manager can execute purchases under the current plan (under the proposed plan they will retain this function), as well as the ability designate a backup within Gas Supply with the responsibility to execute trades in the event of their absence. The Manager of Supply Resource Planning functions as compliance manager regarding the WUTC’s UG-132019 policy statement. This team is overseen by the Director, Gas Supply—Utility Group.

As depicted in the chart below, the structure of the current plan is as follows: Year 1 is currently hedged at 25% (blue bars) which leaves 15% (orange bar) of additional hedges that can be added for Year 1. Year Two is currently hedged at 10% which leaves 15% that of additional hedges that can be added for Year 2. (For clarity, when Year 2 becomes Year 1, the hedge percentage will increase from a maximum of 25% to a maximum of 40% unless overridden by the GSOC portfolio design discussed previously). Year 3 is currently unhedged which leaves 20% of additional hedges that can be added for Year 3.



Additional characteristics of the current strategy are described below:

- Stay the course. Portfolio procurement for 2018 should continue with same guidance as 2017’s plan. This is the most reasonable action while the Company works with Gelber & Associates to identify modifications to future portfolio and hedging designs for GSOC to consider.
- Annual load expectation (Nov-Oct) is approximately 30,000,000 dekatherms, consistent with recent load history.
- Portfolio procurement design based on a declining percentage each year, accordingly: Year 1: approximately 80% of annual load expectation; Year 2: 40%, Year 3: 20%.
- Portfolio must contain a variety of parties, locations, contract volume and terms.
- Considerations of structured products, caps, floors, derivatives, etc. are not to exceed 5% of overall contract supply target. These items are principally used as a potential offset to fixed priced physicals being “out of the money”.

- GSOC can always modify the plan to include additional years if a significant discount price materializes.
- GSOC may make further modifications to this portfolio plan based on the results of the Company’s hedging initiative to be in compliance with WUTC docket UG-132019.

Figure 1 provides a summary of the elements of the supply portfolio design. Figure 2 provides an overview of the planned hedge targets. Please see Appendix B for the listing of hedges that were in effect during 2017, as well as a comparison of fixed price to the monthly settled price.

	Nov18-Oct19	Nov19-Oct20	Nov20-Oct21	TOTALS
Current Notional Supplies Under Contract				
RFP Notional Supplies Planned				
Total Notional Base Supplies (Current + RFP)				
Base Load (5 yr Avg Core Sendcom)				
Percentage of Base Load vs expected Base Supplies				
GSOC Guideline Target (up to 80 yr 1, 40 yr 2, 30 yr 3 of 5 yr Avg Sendcom)				

	Nov18-Oct19	Nov19-Oct20	Nov20-Oct21
Total Base (Current + RFP) Fixed			
Base Load Fixed or Hedged			
GSOC Guideline of 5 yr Avg Sendcom			

III. Reviewing Risk and Benchmarking Hedge Cost

The cost of hedging can vary greatly. The cost of hedging has been a focus of the Commission concern about hedge losses. The purpose of this section is to address the cost of hedging and the concerns of Commissions, and to discuss performance for hedging review.

The primary tools that utilities use for hedging include swaps, call options, physical fixed-price purchases, and storage. For this discussion the use of call options will be discussed. Through the purchase of call options, utilities can hedge their entire natural gas portfolio. For utilities, call options cap price increases, and at the same time allows utilities to benefit from falling prices. However, utilities must pay the call option premium (price of the call option). The premium of call options is dynamic. The premium cost is market driven and the mathematics around the theoretical premium value is complex, generally discussed in terms of the Black-Scholes formula. Nonetheless, the cost of at the money (ATM) natural gas call options in today’s market is mostly a function of the price of the gas to be purchased, volatility, and time until expiration. In today’s market, the cost of an ATM call option purchased by utilities for the coming winter is under 50 cents per dekatherm. This price may of course vary depending on variety of factors including time to expiration. As mentioned, the premium is market driven. This call option premium with a cost of 50 cents can cover the cost of hedging the utility’s exposure to upward price movements. In this way, the cost of the hedging program is capped at the cost of the call option premiums regardless if the market rises or falls. In terms of creating a metric, this identifiable hedge cost of for using call options can be applied to other hedging products. The cost of purchasing ATM options serves as a benchmark for the cost of a hedge program.

As indicated earlier, for purposes of risk responsiveness and risk measurement, the daily gas and the storage gas is excluded from the risk report. Under the current portfolio design, daily gas is 20% of the utility procurement design. The daily gas is for system swing, system balancing, and dependent on weather vagaries and other operating conditions. For this reason, counting daily gas in market exposure and hedging is not relevant. For storage, the supply is only used for peaking loads when customers require and must have gas supplies when delivery systems are otherwise overloaded. These volumes should also be exempt from risk measurement and hedging.

IV. Proposed CNGC Hedging Program

The proposed CNGC Hedging Program will utilize a three-year forward ladder structure covering 12 months per year. The ladder is a declining percentage for the future hedge years with maximum and minimum percentage volume purchases in each year. Hedge purchases are currently anticipated to occur at regular intervals (e.g. once per month) with the flexibility to delay or accelerate purchases in accordance with current market conditions. Data driven analysis done primarily in Microsoft Excel will demonstrate the financial impacts of both higher and lower prices at different CNGC supply basins and pertinent market hubs.

The philosophy behind the recommended CNGC Hedging Plan is to accomplish several simultaneous goals:

- Provide essential price protection against adverse price increases which have detrimental impacts for CNGC customers.
- Modify the existing program to be more “risk-responsive”: adjusting to changing market conditions for natural gas and in compliance with the Washington Utility and Transportation Commission’s Policy Statement UG-132019.
- Reduce hedge losses and more proactively respond to a falling market.
- Coordinate hedge design features with appropriate Cascade personnel.

In addition to fixed-price physical purchases, Gelber has recommended that Cascade use a level of financial instruments to offset and hedge physical gas purchases that are not fixed. The primary financial instruments to use would be the swap and the call option.

At this time, CNGC does not use financials hedging products such as swaps or call options. The use of financials will likely necessitate various corporate approvals, the creation of new credit facilities, and modifying procedures and other requisite back office controls. Gelber believes that financials can offer potential cost savings for certain types of hedging, further demonstrating Cascade’s commitment to the advancement of a risk responsive program that is in compliance with the WUTC’s expectations. In addition, financials give Cascade more choices on how to hedge and run the program by offering the ability to use physical and financial purchases concurrently. Gas may be hedged using fixed-price physicals, financial swaps, or financial call options and every type of hedge is combined to determine the hedge percentage. In deciding between the financial and physical products, cost will be a major consideration. While Gelber recommends the use of financial instruments, it is possible to implement the proposed hedging program with only the use of physical purchases.

At the beginning of the PGA season the Gas Supply group will provide GSOC with a hedging plan for the coming buying year. The submission of the hedging plan is to occur prior to the start of the planning year on April 1st of each year. The hedging year runs from April 1st to March 31st and the rollover occurs on the trading day closest to or on March 10 just prior to the start of the new hedging year. On the rollover date, the prior Year 1 goes away, Year 2 becomes Year 1, Year 3 becomes the Year 2, and a Year 3 is added. To clarify, after the rollover date on March 11, the coming April through March are to be included into Year 1 and so forth for the subsequent years. The hedging plan sets out a vision for how the coming year's buying program will go. The Plan will include the following:

- A brief review of the prior year's hedging activities and results.
- A CNGC procurement book snapshot that shows volumes of gas hedged, dates that hedges were executed, the delivery months prior hedges, prior hedges compared to the current market price, volumes of gas left to be hedged, as well as risk analysis for unhedged volumes still exposed to price risk. The Resource Planning group will provide the trade book snapshot using trade data supplied by the Gas Supply team. A working mock-up of the procurement book snapshot will be generated before the new hedging plan is implemented.
- The limits, on both on the low and high end, presenting how much can be hedged for the coming season.
- A preliminary look at the hedging plan for the upcoming year.
 - Potential market opportunities and risks for the coming buying season.
 - The major market factors affecting prices for the coming year.
 - How the hedging plan and percentages may change over time.
 - Basin location risk (otherwise known as basis risk).
- Disclosure of who will be primary and who will be secondary in the performance of hedge execution, who is responsible for deal capture and confirmation.

The hedging program envisions having the GSOC review and then acknowledge, modify, or reject the percentage bands at least once per year at a time appropriate to the hedging cycle. Along with their review and determination, the GSOC will be provided with an executive summary for the coming annual hedging plans and percentages. The hedge program administrators can make marginal exceptions to the hedging plan without specific GSOC authorization as long as the exception is within the hedging plan's overall structure and GSOC is notified within 72 hours after the exception occurs. All exceptions will be memorialized into an exception document. GSOC will be consulted prior to major changes to the hedging plan. Actions that can be taken both with and without GSOC authorization will be established in writing by GSOC at the time they approve the portfolio design. All decisions, both data and market-driven, will be documented and memorialized. This is designed to be compliant with the WUTC Docket UG-132019 and allows for internal transparency and potential data requests by regulators in the event of a prudency review or a PGA hearing.

Hedging purchases for one year out are expected to occur a minimum of once a quarter but more typically once a month. Generally, once a quarter purchases or hedge purchases are reserved for locations such as AECO where the volumes are relatively small, and markets could be illiquid or inefficient for the size of the hedge transaction. Otherwise, hedges will occur monthly per market guidance and analytical framework.

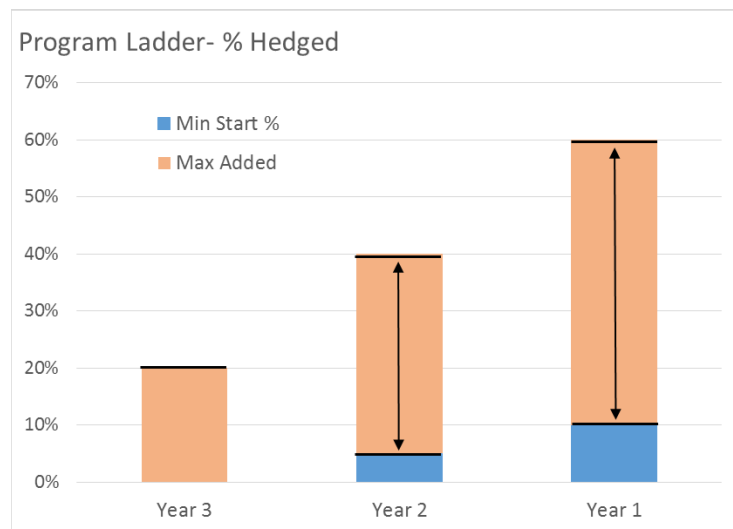
As in the current plan, the hedge book will continue to utilize a three-year forward-looking ladder. The ladder will identify a percentage range for purchases to be made within each year. Data driven

analysis and input from market knowledgeable personnel will then be used to identify the hedge percentage goal for each year with the ability to risk responsively adjust the chosen percentages within the range established by the minimum and maximum allowable volumes. Hedging decisions, which are supported by analytics, will be memorialized into a file for later retrieval as necessary for management review, regulatory request, or staff training. The ranges are designed to act as maximum and minimum purchase boundaries within the program. In general, the program goal is to remove price risk on behalf of customers by purchasing larger volumes when prices are historically low and to avoid making excessive purchases when prices are historically high to minimize hedge loss risk. The greater flexibility of the hedge program allows CNGC to be more risk-responsive to changing prices.

A description of the percentage ranges is provided below. Figure 3 provides a graphical representation of these ranges.

- Year Three – hedge such that by the end of the year the cumulative hedge is between 5% and 20%
- Year Two – hedge such that by the end of the year the cumulative hedge is between 10% and 40%
- Year One – hedge such that by the end of the year the cumulative hedge is between 15% and 60%
- Hedge percentages may include physical fixed-price purchases, financial swaps, call options or a combination of the aforementioned products.

Figure 3 – Proposed Hedge Program Ladder



For years beyond three years, no fixed-price purchases or natural gas hedges are currently designed or anticipated. However, if market conditions become favorable for long-term future purchases or investment in reserve sources such as biogas become viable beyond the current buying window, an exception may be filed with the WUTC to modify the framework of the existing plan.

The volume of gas to be hedged against is CNGC’s expected core purchases under normal weather conditions as provided by the resource planning group. Figure 4 displays these volumes.

Figure 4 – Expected Core Purchases under Normal Weather

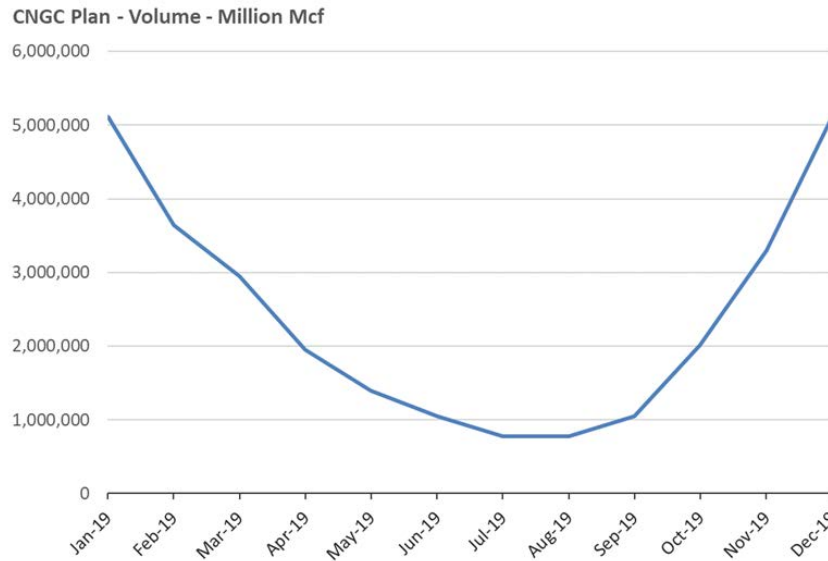


Figure 4 is the basis for CNGC volume usage and the associated hedge percentages in million cubic feet per month. The volume usage is called “Core Sendcom” and is a useful way to summarize CNGC’s monthly gas requirements. As expected, CNGC’s monthly gas requirements form a “U” shape with high Core Sendcom volumes in the colder months and low Core Sendcom in the warmer months. CNGC’s core customers are mostly residential and commercial customers. Non-core customers are large industrial and power generation customers who buy their own natural gas and use CNGC primarily for pipeline transportation to their burner tip on the utility distribution system.

Over time as markets change and customer needs evolve, it is possible that the market will become sometimes unfavorable, or conversely favorable, such that the hedging program laid out in this Plan may need to be modified. For example, the minimum volume may need to be lowered or the maximum volume raised. Other such program evolutions are likely over time. Program exceptions and modifications are anticipated for this program. Indeed, in order to be risk responsive, the program must be able to respond to the changing risk conditions. Possibly, the market’s changing condition can be short term in nature such as a price spike. Or, changing conditions may be broader based and a more permanent feature such as the supply changes associated with three-dimensional seismic or horizontal drilling.

The plan will require that all mandatory exception documents be concise, providing justification for short term market adjustments or opportunities. Also, the program’s basic structure and features will be reviewed by GSOC no less than every year for appropriateness. All program changes will be written into the structure outlined in this document and commensurate authority approvals will be obtained for major program changes.

Initially, G&A will provide a monthly hedge guidance document. Over time, the guidance document will evolve and eventually CNGC personnel will take over the generation of the guidance document,

consistent with GSOC's long term plan. Please see Appendix A for an example of this guidance document.

V. Data Driven Analysis

Analytical Support from Resource Planning

The CNGC hedging plan is supported by a data driven framework. This framework is comprised of analytics contained mostly in Microsoft Excel. Excel is the platform of choice due to its ubiquitous usage which can be maintained by existing personnel and adjust to certain personnel changes. The opportunity and appropriateness of adopting other platforms will be considered over time as warranted by changing technology, experience, and data sets.

CNGC customer risk measurement is calculated using the volume estimates set forth in the IRP, taking into considerations of usage estimates from the Sendcom Excel workbook that is maintained by Gas Control. The risk measurement spreadsheet shows fixed priced purchased volumes, call option purchases, fixed-floating swaps, physical fixed priced purchases, unbought anticipated gas volumes as well as gas purchases at variable pricing.

The projected CNGC customer risk measurement will maintain the ability to model the impact of prospective upward and downward price changes to quantify price risk exposure under uncertain market conditions. Potential high and lower prices are quantified using market derived volatility calculation over varying time horizons. The more volatile the market becomes the more price risk customers will have. It seems self-evident that utility customers are more financially impacted by the exposure to higher prices and generally benefit from lower prices. Even in the eventuality that the hedge book reaches 51% hedged or greater (the current maximum is 60%), it remains in the customers best interests to have the price continue to fall for the unhedged portion. The CNGC risk measurement portion of the data-driven framework is one of the key features of achieving the WUTC's policy goal of minimizing a customer's loss exposure on hedged volumes due to declining price.

The foundation of a data driven framework to support CNGC's hedging plan involves keeping an accurate inventory of all hedges made. This includes physical volumes hedged with fixed-price purchases, as well as all volumes hedged using financial swaps and call options. While tracking these trades, CNGC will keep an up to date calculation of the weighted cost of gas (WCOG) of purchases in a format that can be easily compared to the current market price of those hedges. This will give CNGC a consolidated, net position view on these trades and how they compare to the current market. Using the IRP Sendcom forecast to project future usage, CNGC will track the difference between volumes hedged at a known fixed price against unhedged volumes currently in which the price floats (changes) with the market. These floating volumes present an upside price risk to CNGC's customers because of the potential for prices to increase before expiration. Conversely, a downside loss risk exists on the portion of CNGC's portfolio that is hedged at a fixed price, due to the potential for prices to fall before the gas is consumed in the future. The hedged to unhedged volumes comparisons along with the net market position of the hedge volumes make up the trade book snapshot. Using calculated market volatilities and time left until expiration, the total Value at Risk (VaR) of

CNGC's portfolio can be calculated for different confidence intervals and time horizons. Quantifying current mark to market positions and the remaining value at risk for the portfolio will be the foundation for establishing further risk metrics that will allow CNGC to build a data-driven hedging program.

The resource planning group will provide all members of the gas supply group with pertinent analytical information on a periodic basis. This includes a trade book snap shot that shows the net position (to the current market) of the executed trades in the book. In addition, the resource planning group will provide a variety of risk metrics for the book. Risk metrics as defined by CNGC, in consultation with Gelber, will include comparisons to performance benchmarks, prevailing market price, and a measure of the exposure price for unpurchased volume. Both the upside risk and downside risk at CNGC's various supply basins will be quantified and measured. Through these metrics, to be performed at least once annually, CNGC will attempt to develop a "risk awareness" associated with its supply basins compared with the prevailing market. Further, the resource planning group will provide Gas Supply with internal and external market intelligence that establishes key market drivers. Market drivers may include current storage levels, weather forecasts, production forecasts, and other fundamental factors. Full development of the specific metrics and relevant information used will be an ongoing process and will be allowed to evolve and change as necessary with the market.

Correlations between the supply basins and Henry Hub NYMEX

Cascade purchases gas from that are priced off of the SUMAS, Northwest Rockies, and AECO gas basins. If Cascade is to utilize financial hedges, transactions may possibly be based on the NYMEX (New York Mercantile Exchange) natural gas market that has a benchmark location in Henry Hub, Louisiana. Therefore, it is important to study the relations and correlations between CNGC basin locations and NYMEX Henry Hub along with the basin locations with each other. Understanding the pricing relationships is critical for making trading book snapshots and calculating risk metrics such as VaR. In addition, the analysis is important in the selecting appropriate locations and potentially in the use of call options.

The price correlations are calculated using historical prices and will need to be maintained and updated (likely once or twice a year). In recent years, the correlation between NYMEX Henry Hub and Northwest Rockies has been strong. However, the correlation between NYMEX Henry Hub and SUMAS has been weaker and the correlation between NYMEX Henry Hub and AECO is weaker still. When Cascade purchases gas from a basin that has a weak correlation with NYMEX Henry Hub Cascade may need to make an accompanying location basis transaction to account for basin location risk. These basin locations or "basis" trades can be made on NYMEX and other financial exchanges.

NYMEX liquidity and therefore its cost efficiency and price transparency are the features of NYMEX hedging. However, without effective correlations, NYMEX hedging will not qualify for hedge accounting treatment. A combination of NYMEX hedges paired up with basis hedges could potentially mitigate the lack of correlation for AECO volumes.

Status of Align ETRM

Cascade currently uses an energy trading and transactional system/gas management system called Align. Align is a software application from FIS Global. Cascade currently uses the Align functionality as the repository for contracting, pricing, volume, nominating, measurement and settlement of physical

supplies. Align has a risk management component called ETRM, which Cascade has purchased. The Company has been investigating whether Align can be used strictly for transactional reporting. Align is a complex system and has required further business case analysis than was anticipated in the 2017 Annual Hedge Plan. An analysis of Align is still in progress and the Company hopes to finalize the potential long-term use of the ETRM module during 2019. The Company has determined that mark-to-market, value-at-risk (VaR) and other analytics will primarily be developed using Microsoft Excel.

Annual Retrospective Reporting

WUTC UG-132019 requires compliance with an annual reporting requirement as well as a hedging strategy review and modification requirement. The CNGC hedging plan will be compliant with both requirements. Retrospective reporting will be done in synchronicity with an annual presentation to the WUTC. The proposed program is designed to create informative content in a PowerPoint presentation to be given to the WUTC, as may be required for future acknowledgement proceedings.

Until the Commission is able to provide more guidance regarding the hedge plan acknowledgment process, in addition to the annual hedging plan filing, the Company proposes the scheduling of a WUTC information workshop. The Company envisions that as the proposed plan begins to be executed, the retrospective reporting is designed, per UG-132019, to be informative as to a narrative of the utility's perspective on the execution of the prior year's hedging strategy. Further, the report will provide insight about whether the metrics and tolerances identified in the previous year's plan continue to be appropriate and how CNGC's retrospective evaluation has directed modification to the upcoming year's hedging plan.

CNGC Hedging Program changes emanating from the retrospective review will be documented and memorialized for regulatory compliance as required by the WUTC. In this memorialization, specific program changes to be enacted will be identified and rationale for the changes will be stated.

OPUC considerations

The OPUC has guidelines for hedging program review embedded within the PGA review process. Each year the OPUC review's CNGC's gas procurement activities as a part of approving the PGA (Purchase Gas Adjustment). The OPUC PGA review process has been on-going on an annual basis for a long-time. The Oregon PGA process will continue to contain a session on utility hedging to which CNGC will give required hedging plan retrospective performance reports and prospective hedging evaluation and strategy. Reports and strategies may be labeled as confidential, and as such, may be excluded from public review.

Following the annual retrospective review of the hedging program with the WUTC as well as yearly program review with GSOC, suggested modifications will be integrated and implemented for the subsequent hedging year.

VI. Transition Plan

The current hedging plan is well underway for year 2018 through January of 2019. No changes to the current hedging plan will occur until after January 31, 2019. The existing hedging plan will be maintained and executed in its current format through January 31, 2019.

A transition period will begin after January 31, 2019, when the new hedging program contemplated in this Utility Hedging Program Design will be implemented in compliance with WUTC's Policy and Interpretive Statement UG-132019 and the hedging expectations identified in the OPUC PGA UM-1286 document. The new utility hedging program will use a modified and more flexible version of the existing ladder for hedge transactions in the supply basins at Sumas, AECO, and NW Rockies.

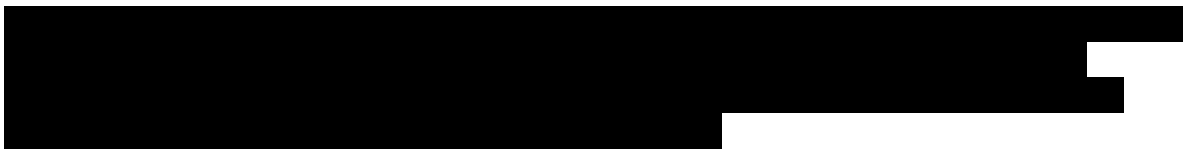
To transition to the newly constructed hedge plan, purchases in years two and three of the current hedging plan will be rolled into the new hedging plan and account for a base percentage of purchases in those years. CNGC will then begin layering in additional purchases of both physical and financial hedges in accordance with the more flexible, risk-responsive percentage guidelines outlined in the structure of the new plan.

The revamped hedging program will use a combination of fixed-priced physical gas purchases and financial instruments such as call options and swaps in a cost effective and risk-responsive manner. The use of financial instruments (calls and swaps) is contingent upon GSOC support and adequate credit facilities for the anticipated transactions.

Contingencies, Approvals, & Acknowledgement

The hedging plan anticipated herein will require credit facilities from banks and other counterparties. Credit facilities are necessary to assure counterparties that a transaction with CNGC is not subject to counterparty risk such as default risk or failure to perform. The potential hedge book could be comprised by fixed-priced physicals, swaps, and call options or any combination of the three. As management and markets change over time, other types of transactions may prove to be appropriate and added to the list of possible hedge transactions potentially requiring or alleviating credit requirements.

Without the necessary credit facilities in place, the proposed CNGC hedging plan would require significant adjustment from the current design, relying more on commercial good-will and other facilities already in place for CNGC's current physicals-only hedging program. It is essential that CNGC senior executives and the GSOC understand the requirements for credit facilities to the extent required by potential counterparties. Credit will be managed by CNGC's Accounting & Finance staffs in Bismarck, ND, and Kennewick, WA. Any additional credit management reports are anticipated to be created within the CNGC organization prior to final hedge plan implementation in late 2019.



Credit for physical natural gas purchases is currently being provided by the physical gas suppliers. These suppliers are typically seasoned and sophisticated trading companies. Cascade has executed NAESB contracts with over twenty physical natural gas suppliers.

Several of Cascade's physical gas suppliers are known to have an active and sophisticated trading and hedging operation with substantial operations. These parties could be able and possibly may be willing to extend additional credit lines to facilitate the CNGC hedging program and its swaps and options anticipated herein. Conversations with these suppliers are expected to be ongoing.

GSOC and other senior level executives are actively involved in this project. In addition to periodic written updates, the project team and Gelber have made presentations to GSOC. GSOC must authorize this plan before the full development and implementation of this proposed approach. The final development of the described hedging program and the anticipated training of CNGC staff is contingent upon the sign-off of appropriate senior executives and securing necessary credit facilities. There are several layers of sign-off incorporated into the project schedule.

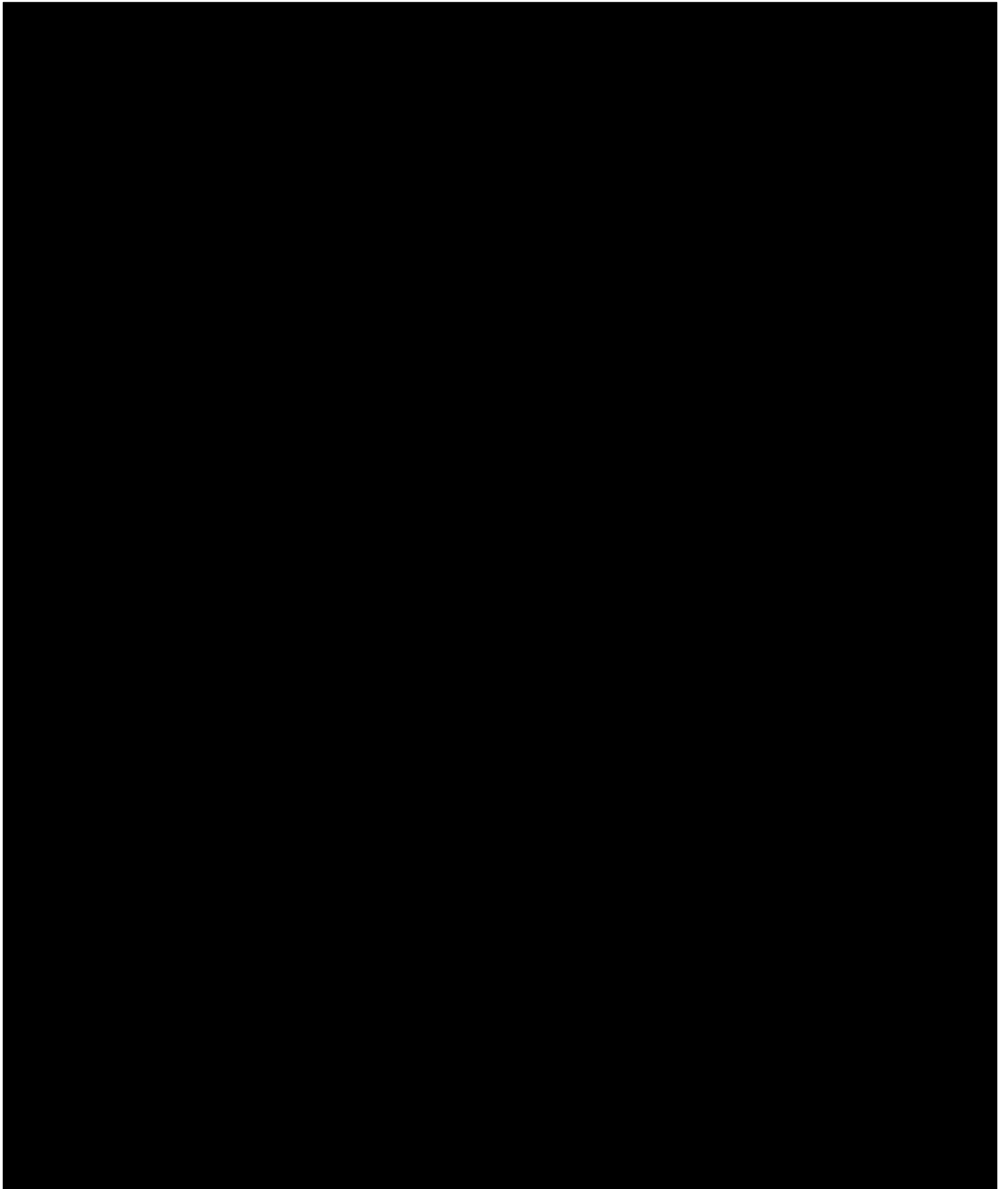
VII. Conclusion

The proposed hedge plan 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 prospective hedge plan advocates the use of financial instruments such as swaps and call option to improve flexibility and reduce cost of hedging. The proposed framework for hedging also establishes basic analytics and metrics that can be periodically updated to maintain a "risk awareness" of current market conditions associated with hedging.

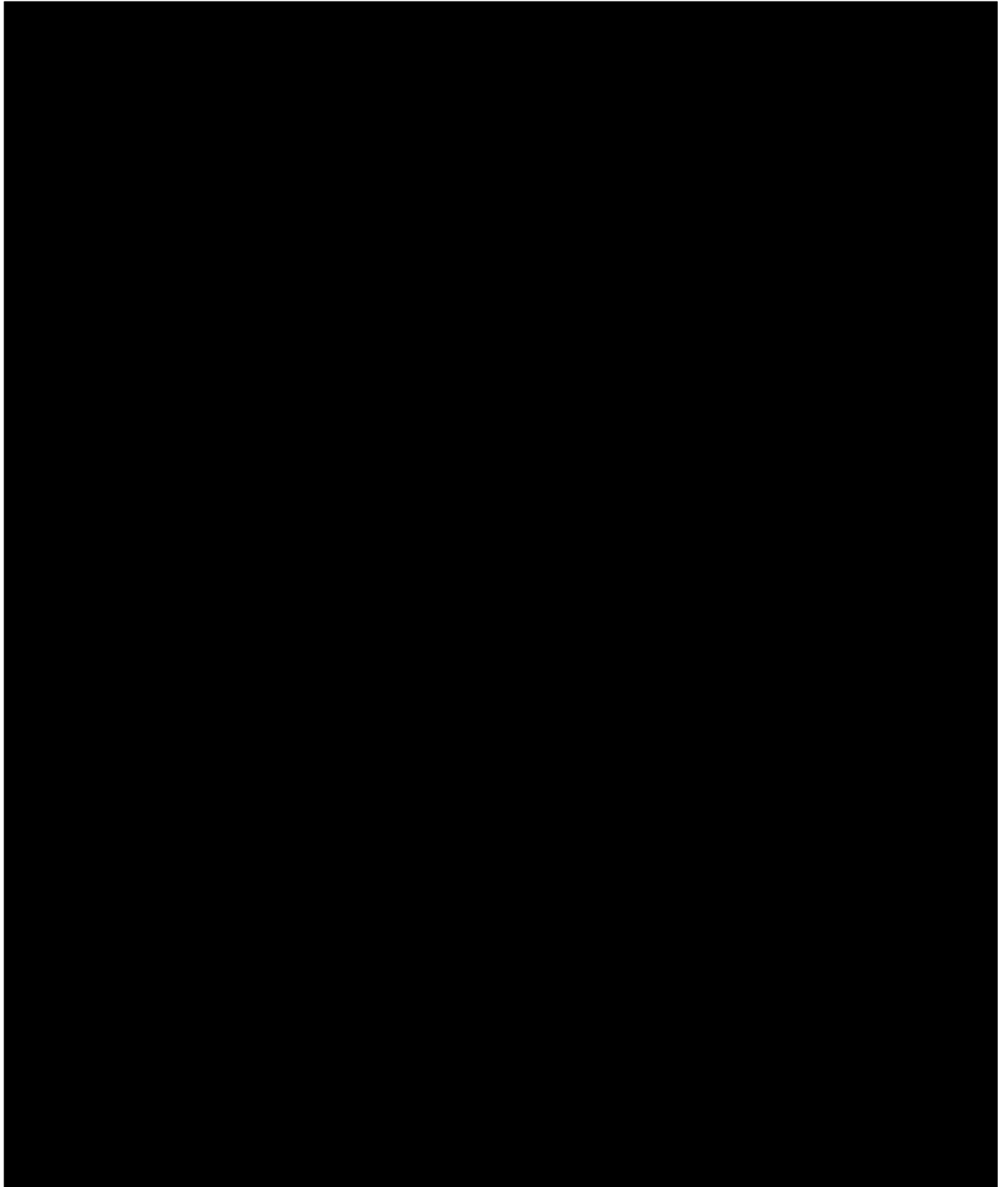
The CNGC Hedging Program will be compliant with WUTC UG-132019 and OPUC UM-1286. The transition from the current Program to the revised Program is targeted to occur after the current planning year that ends in March 2019. The revised program will be flexible in order to be risk responsive and will be data driven. The Program will be supported by annual reporting and decision memorialization.

Working with Gelber & Associates, the Company believes it has made notable progress in developing a more robust and risk responsive hedging program. As Cascade pledged in the 2017 Hedging Plan, this 2018 Hedging Plan contains a more detailed explanation of the Company's hedging program risk responsive philosophy components and design. With the design phase of the project nearing completion the Company still anticipates that the fully executed enhanced hedging strategy will be in place by the filing of the 2019 Annual Hedging Plan.

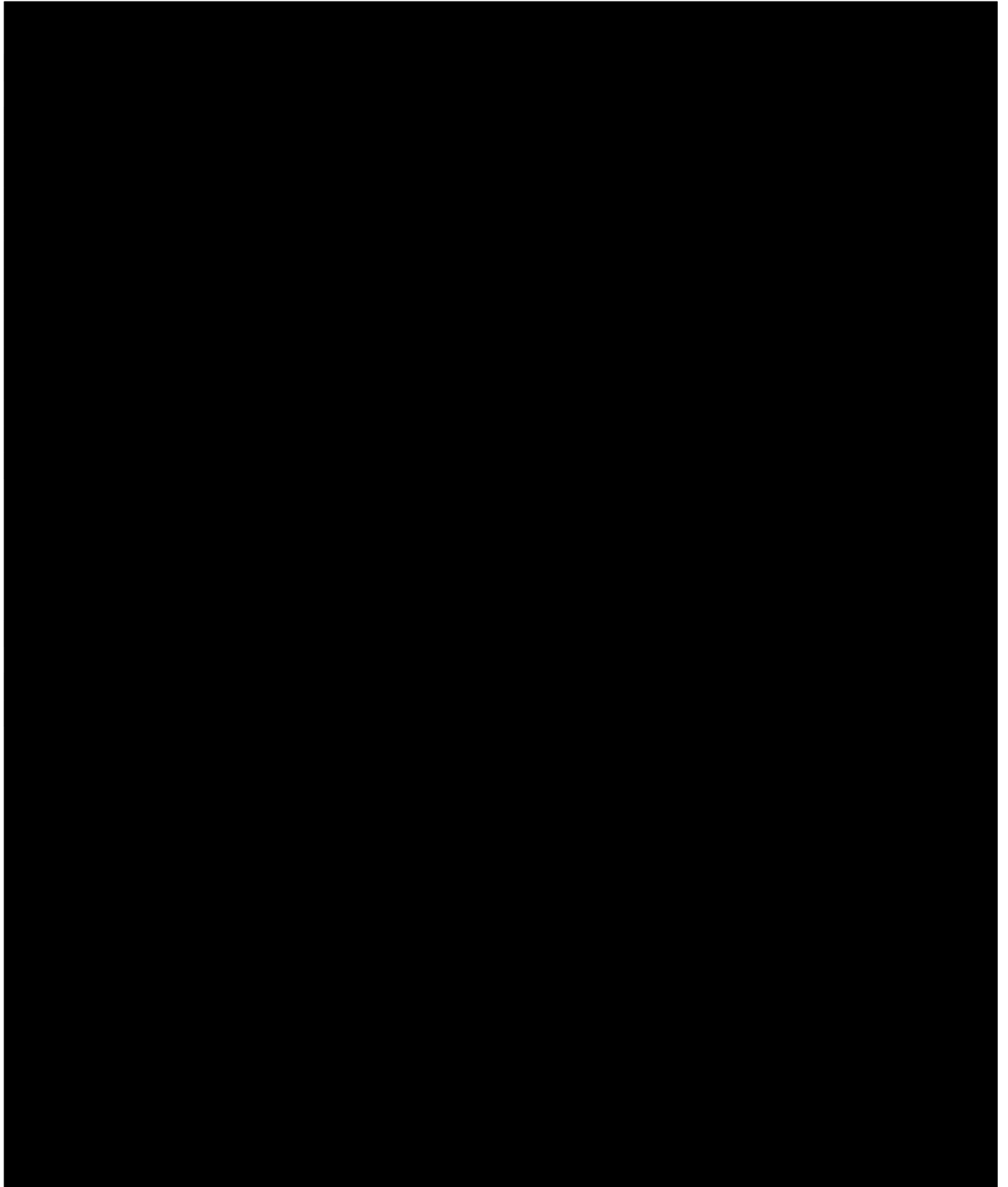
Appendix A: Example of Guidance Document



Appendix A: Example of Guidance Document



Appendix B: Hedge Transactions ending in 2017



Appendix B: Hedge Transactions ending in 2017

