Ontario

# STAFF REPORT TO THE ONTARIO ENERGY BOARD

# EB-2015-0238

## Distributor Gas Supply Planning

**August 12, 2016**

## Contents

# INTRODUCTION

The winter of 2013/14 was much colder than forecasted and caused the demand and price for natural gas to increase significantly across a large portion of North America. The two large gas distributors in Ontario, Union Gas and Enbridge Gas Distribution, implemented their respective supply plans but in the end experienced supply costs that were far in excess of what was forecasted. This resulted in significant rate increases in their April 1, 2014 applications under the Quarterly Rate Adjustment Mechanism (QRAM) (See Table 1).

**Table 1**

| | Date | Commodity Price (¢/m3) | Gas Cost Adjustment (¢/m3) | Effective Price (¢/m3) | % Change |
|---|---|---|---|---|---|
| Union Gas | Apr-14 | 17.9207 | 4.4687 | 22.3894 | 68% |
| | Jan-14 | 12.8596 | 0.4456 | 13.3052 | |
| Enbridge | Apr-14 | 17.6031 | 3.2928 | 20.8959 | 78% |
| | Jan-14 | 12.6789 | -0.9377 | 11.7412 | |

In response, the OEB committed to examine the current policies and processes related to gas supply planning. The OEB launched a consultation to develop a side-by-side comparison approach of the natural gas supply plans developed by Union and Enbridge. This consultation also examined the review/approval processes used by the OEB with respect to the gas supply plans and considered approaches to increase the understanding of the underlying Cost/Risk trade-offs inherent in the distributor plans.

The Staff Report is the main output of this consultation and serves as the foundation platform from which the OEB should consider further policy work related to the overall planning and review/approval processes. The side-by-side comparison document (Appendix A) is a reference document, developed with the stakeholders and the two major distributors. Recommendations are contained below, to further expand the understanding of the gas supply planning and processes.

# BACKGROUND

## QRAM Policy Review

Many gas customers in Ontario purchase natural gas at a regulated rate from their natural gas distributor. These rates are adjusted every three months by the OEB through the Quarterly Rate Adjustment Mechanism or QRAM.

The QRAM process is designed to strike a balance between protecting consumers from the impact of short term rate volatility while still providing some level of market price transparency. Also, commodity related charges in the QRAM are flow through charges for distributors meaning that there is no mark-up or profit earned.

In the April 1, 2014 QRAM application, following the uncommonly long and cold winter, there was generally an expectation that the higher cost of gas purchased would flow through to consumers via the distributor rate applications, but the significant differences between the two main distributors Enbridge and Union Gas was unexpected. The bill impact within the applications (rate increase plus PGVA) for the average customer on Union Gas' franchise system was approximately $200[1] per year and for Enbridge it was approximately $400.[2] While the OEB's decision to extend the recovery period for costs incurred by distributors mitigated the impact of a large rate increase, it raised questions as to the contributing factors for this difference.

In response to the concerns identified, the OEB undertook a series of reviews to see whether the oversight of regulated gas supply could be improved. In June 2014 the OEB undertook to conduct a review of QRAM process (EB 2014-0199). The scope of this review was to determine the following;

1) Whether the QRAM process should be amended to require, in certain cases, a substantive review of the application, including a review of the execution of the gas supply plan.

2) If the QRAM process is amended as described, what circumstances should trigger a substantive review.

3) Whether the Board should establish a policy on rate mitigation to protect system supply customers from rate volatility; for example, by further smoothing rate impacts over time.

4) Whether the Board should establish protocols for communications to distribution customers.[3]

There were three main points that came out of this review. First, a recognition that the QRAM process is an effective tool and served its purpose of balancing the need to protect consumers from short-term market price volatility while offering some level of price transparency. Second, a trigger mechanism was established so that if a significant price change is going to impact consumers, as either a result of commodity related costs or a clearing of the PGVA, distributors inform the OEB, consumers and other

[1] Union Gas Application - EB 2014 0050
[2] Decision EB 2014-0039- Page 2
[3] EB 2014 0199 – Decision and Order

stakeholders in advance and provide more detailed information about the reasons underpinning the increase. Third, in some cases it may become necessary to further smooth the price impact to consumers of increased costs by extending the amount of time distributors can recover the costs (for example, from 12 months to 24 months). This signaled that while transparent price signals remain important, protecting consumers from volatile prices is paramount for the OEB.

## Annual Natural Gas Market Review 2014

Stakeholders had a further chance to discuss the impact of the winter of 2013/2014 at the annual OEB hosted Natural Gas Market Review (NGMR) held in December 2014. At that event participants were provided with an in depth review of the North American natural gas market and a description of how distributors responded to increased demand and prices. Based on the discussion and presentations at the NGMR, staff recommended that a review of;

1) the Board's policy in relation to gas procurement and the assessment and approval of distributor gas supply plans

2) an analysis of the risk/cost trade-offs considered in the determination of each plan element, such as:
    a. the demand forecast underlying procurement decisions–design day criteria
    b. firm transportation planning
    c. storage level planning
    d. incremental supply procurement (i.e. spot vs. forward purchases)

3) the minimum information required for the Board's review of a distributor's gas supply plan

4) the implications of the Board's approval of a gas supply plan, particularly in relation to a distributor's discretion in implementing the plan.[4]

This consultation was consistent with and informed by the NGMR.

[4] NGMR 2014 Staff Report to the Board

## DISTRIBUTOR GAS SUPPLY PLANNING CONSULTATION

In the fall of 2015 the OEB initiated this consultation (EB 2015 0238) beginning with informal discussions with distributors and other interested parties. The OEB issued a letter on October 2015 asking for input on the items that stakeholders specifically wanted to address in the presentations that were to be given by the two largest distributors Union Gas and Enbridge on their respective approaches to gas supply planning.

Based on the feedback from OEB staff and stakeholders, the distributors developed presentations intended to facilitate a side-by-side comparison of their respective planning processes at a one-day forum. Distributors were to;

1) Outline their underlying planning principles;
2) Provide a description of the design criteria (demand, supply, transportation) that are used to develop the supply plan, and establish the level of risk and cost that the plan is exposed to;
3) Enable the OEB and stakeholders to compare and contrast the plans side by side, and understand the basis for those differences;
4) Increase the understanding of the implications of the plans and distributor actions under various scenarios, in order to demonstrate the cost impact of the plan under those scenarios. Scenarios will include but not be limited to the following;
    a. Lower demand than the planned condition
    b. Higher demand (both peak-day and over-all system demand) than the planned condition.
    c. Other significant variant scenarios that fall outside of the normal operating assumptions of the plan

The forum was held on December 3, 2015 and distributors presented their plans. The expectation was that stakeholders and OEB staff could review the information, and be prepared to advance to the next objective of developing a best practice approach to gas supply planning. Unfortunately, the structure, level of detail and focus of each presentation made a comparison difficult to achieve. In addition, stakeholders had differing expectations related to the quantity of information that distributors were expected to provide.

A new approach was developed whereby a Table of Contents was developed by the OEB and stakeholders. The intent was to capture, through consensus, the topics that the OEB and stakeholders wanted to see in a side-by-side comparison and the distributors were tasked with collaboratively developing the content based on the Table of Contents.

A second forum was scheduled in March 2016 so that participants could review, comment and clarify the information contained in the distributors collaborative efforts, presented in the side-by-side reference document. As mentioned previously, this was the main output of this consultation and serves as the foundation platform from which the OEB should launch further policy work related to the overall planning and review/approval processes.

## Analysis and Findings

The issues analysed below were developed based on this consultation and are considered by OEB staff as opportunities that could enhance the current distributor gas supply planning process.

### Format, Content and Timing for Submission of the Annual Gas Supply Plans

During this consultation, the distributors described their gas supply planning process. All parties found this side-by-side comparison approach to be useful in highlighting the commonalities and differences of each distributors approach to their planning process. Staff notes that some of the information presented in the comparison document is already submitted to the OEB annually in the form of a gas supply memorandum that both Enbridge and Union Gas file as evidence to support their respective rate applications. Union currently files a Union Gas supply memorandum as evidence in the fall as part of its application for rates effective in the following January. Enbridge files its Enbridge gas supply memorandum as evidence in the spring as part of its application for clearing deferral accounts.

While both the gas supply memorandums contain helpful information that is critical in the review of gas supply plans, there was some information that is not contained in the memorandums. In particular, the memorandums don't provide data that enables the assessment of how the actual plan compared to the forecast. Understanding prior period comparisons or performance would be helpful when the OEB reviews subsequent applications.

The memorandums are an effective means of presenting the gas supply plans developed by distributors and offer the opportunity to review the methodology that was adopted. However, although there are some similarities in terms of content between the gas supply memorandums from the distributors, staff notes that the current format that the distributors use is not consistent and neither is the timing of the submission. This makes comparing the two using a side-by-side approach difficult.

## The OEB's Role - Approval of Gas Supply Plans

We begin by observing that at the outset of this consultation, it was not widely appreciated among stakeholders that the gas supply plans of the two distributors are not approved by the OEB. It is important to note that while the gas supply memorandums are submitted as part of a rate application it is the rates, not the supply plans that drive those rates, for which the distributors have sought approval.

*Should the OEB approve or pre-approve gas supply plans?*

Stakeholders' perspectives on whether or not gas supply plans should be pre-approved varied. Some expressed concern that the current process doesn't allow for an opportunity to change the near-years plan because they are nearly fully executed by the time they were submitted to the OEB. Others suggested that the distributors were best equipped to develop and execute the plan and were generally content with the current process for reviewing annual plans via QRAM and the 5 year review. Most agreed that the distributors required flexibility within the plans to respond to unforeseen circumstances.

Distributors suggested that pre-approval of a gas supply plan was impractical for the following reasons[5]:

1) Releasing the plan in advance of executing the purchases contained within the plan could have a negative impact on consumers by, for example, increased purchase prices and fewer flexibility options.

2) The OEB has already addressed the issue of pre-approval in a 2008 OEB proceeding (EB 2008-0280) that resulted in the following decision;

   *The Board does not believe that the pre-approval process should be used for the natural gas utility's ("utility") normal day-to-day contracting, renewals of existing contracts and other long-term contracts that are not related to new natural gas infrastructure. These contracts should continue to be addressed in the utility's rate proceedings.*

3) Distributors required the ability to respond to abnormal conditions in the gas supply market place so a certain element of the plan could not be pre-approved.

In a brief review of other jurisdictions in Canada, staff notes that in Quebec, the Régie de l'énergie requires the distributors to present their annual gas supply plans for pre-approval and have provided distributors with clear guidance about the information that is

[5] Side-by-side Comparison Document - Page 18

expected to be filed *(Regie de l'energie)* as part of its plan. Although the review and approval is conducted annually, it is framed within a forward looking 3 year forecast, and incorporates medium term commitments that are made (such as multi-year transportation contracts). The Régie de l'énergie, mitigates the distributors concerns about releasing their gas supply plan in advance by conducting a review 'in-camera'. Under this process the prudency of costs has already been approved by the regulator by pre-approving the plan suggesting that an application for rate relief could be more mechanical.

The opposite may be the case in Alberta and British Columbia where, like in Ontario, distributors submit their application for rate relief from costs incurred based on a plan that the regulator has not reviewed previously. The gas supply plan is submitted as evidence that the costs incurred are accurate. However similar it may be to previous plans, there is no pre-approval and the regulator is seeing the plan for the first time when it is submitted in a rate application.

*Staff's view*

In our view, the importance of natural gas supply to the customer's bill suggests a more robust regulatory approach is needed to protect consumers in Ontario. The types of decisions made concerning gas supply and arrangement of associated transportation can have significant multi-year impacts on natural gas ratepayers. At the same time, we believe the regulatory process must be transparent and provide substantial flexibility to allow the gas distributors to optimize their annual gas supply plans when faced with challenging circumstances such as those they experienced in the 2013-14 "polar vortex" winter. The current process requires improvements that will inject greater transparency, accountability and performance measurement into the current system.

The combination of a five-year framework approved by the OEB, the submission and evaluation of annual plans, and relatively mechanistic cost recovery mechanism would provide robust and transparent oversight of regulated natural gas supply by the OEB. This approach is similar to our oversight of other key regulated activities, such demand side management plans. The multi-year perspective provided by the five year plans allows for the OEB to review the key strategic decisions that distributors face in ensuring supply to their customers. By approving an evaluation framework, the distributors will have a clearer idea as to how their procurement activities will be assessed.

**Cost Risk Trade-offs**

One of the underlying themes of this consultation was the topic of risk. In Ontario, distributors manage the gas supply portfolio by providing a high degree of supply certainty at a low cost. The underlying principles identified by the distributors in the side-by-side comparison document all focussed on managing risk but is tempered by the 4th principle, cost.

1) Reliability – The distributor is the "supplier of last resort" and as a result supplies are sourced from established liquid hubs and transported to the markets served by the distributor via firm transportation contracts in order to mitigate delivery interruption

2) Diversity – Mitigates reliability and cost risks by procuring supplies from multiple procurement points and transporting supplies to market and/or storage through several different paths

3) Flexibility – Manages shifting demand requirements through differentiated supply procurement patterns and provides operational flexibility through service attributes and contract parameters[6].

4) Landed Cost – Balances gas supply costs with the other principles and ensures low cost natural gas supply for customers.

While the gas supply planning process is underpinned by guiding principles, stakeholders had difficulty understanding how these principles were embedded in some of the decisions that distributors make. Distributors are making complex decisions as they attempt to find the appropriate balance between risk and cost but the trade-offs between to the two are unclear. For example, distributors assess the risk/cost trade-off between procuring landed supply or procuring closer to the production source but the inputs to the final decision and a description of the alternative options were not fully articulated.

Clarity around the inputs for this type of decision making, including an assessment of the risk/cost trade-offs associated with various options available, would help to inform decision makers of the relative trade-offs being made, and the difference risk implications of each of the two plans..

[6] Side-by-side Comparison Document - Page 3

### Consumer Awareness

The winter of 2013/2014 also highlighted that consumers could be better informed about the role of distributors and stakeholders with respect to gas supply planning. In this case, gas consumers expressed concern that the OEB was approving a significant rate increase and wondered if the OEB was not fulfilling its mandate. This highlights that there is a lack of awareness among consumers and stakeholders about the process of setting rates and the role of the OEB in that process. Consumers should be provided with a greater understanding of the process of gas supply planning, the risks that distributors manage and metrics that can help measure the success of plans.

This final piece of the initiative is dependent on a completed assessment of the OEB's role and a determination of the appropriate approach to understanding risk.

## STAFF RECOMMENDATIONS

The objective of this consultation was to gain a greater understanding of the planning processes and parameters employed by the distributors in developing their annual gas supply plan. QRAM has been reviewed in EB 2014 0199 and the OEB has issued a Decision and Order to enhance its ability to protect consumers. Further enhancements to this process may be reviewed in the coming months.

The results of the NGMR 2014 confirmed that greater clarity is required on the differences between distributors with respect to distributor gas supply planning which this consultation achieved through the development of the side-by-side comparison document.

OEB staff believes that it is in the publics' interest to consider improvements to the current approval and review processes for gas supply planning. The recommendations below are based on three foundational objectives of increased accountability, transparency and performance measurement.

1) Increased Accountability - Gas distributors should apply for pre-approval of their gas supply planning framework on a stand-alone basis (separate from other applications). The application should be submitted at the same time, in the same format (to ensure that they can be easily compared) and reviewed jointly by the same panel.

2) Increased Transparency - Gas distributors should submit a gas supply memoranda annually on a stand-alone basis. This new memoranda should be in a common format and submitted at the same time. The content should be

consistent with the information already included in their gas supply memorandums and the side-by-side comparison document developed in this consultation.

3) Performance Measurement – To increase the OEB's ability to measure the performance of the distributors' gas supply plan, the new memoranda should include a report card on the performance of the plan over the previous 3 years along with a forecast of the foreword looking 3 years. The report card should be in a common format that enables a side-by-side comparison.

4) Consumer Communication Enhancements - Review the current consumer communication protocols with the intent of ensuring that consumers' expectations of the OEB's role with respect to gas supply planning is aligned with the actual process. This could include the development of a plain language guide for consumers that focuses on the planning process including a description of QRAM and rate setting process.

With the foundational pieces recommended above, OEB staff and stakeholders can gain a greater understanding of the various approaches to managing risk, to better understand the cost/risk trade-offs inherent in the gas supply plans and to determine how to quantify it and support decision making.

# Appendix A – Side-by-side Comparison Document

**EB-2015-0238 Distributor Gas Supply Planning Consultation**
**Gas Supply Planning Comparison**
**March 22, 2016**

| | | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|---|
| **1** | **Objectives** | | | | |
| | | *"The objective of Union's gas supply plan is to create an efficient supply portfolio that will meet the demands of sales service and bundled direct purchase ("DP") customers, while meeting the overall gas supply planning principles.*<br><br>*Union's gas supply plan provides the strategic direction guiding the Company's long-term supply acquisition process. The gas supply plan does not commit Union to the acquisition of a specific supply type or facility, nor does it preclude Union from pursuing a particular supply. Rather, the gas supply plan identifies the transportation and supply volume requirements to meet annual, seasonal and design day demand for sales service and bundled DP customers. Union recognizes that the gas supply planning process is dynamic, reflecting changing market forces."*[7] | "*The objective of gas supply planning is to develop a portfolio of natural gas supply, transportation, and storage assets that provide for the safe, reliable, and cost effective delivery of natural gas to customers throughout the calendar year. A gas supply portfolio is structured first and foremost to meet demand for natural gas on peak day (i.e. the day of highest demand) along with seasonal demand for natural gas throughout the winter and summer months.*" [8] | No material differences | FRPO –<br>a. While the document conveys no material difference: EGD emphasizes the paramount importance of peak day, while Union notes annual, seasonal and daily.<br>b. All in costs to deliver should be understood to make informed decisions. In Union's case, bringing in gas through Dawn requires incremental Dawn-Parkway build. These builds are occurring at close to twice the existing embedded rate. Further, feeding |

[7] EB-2015-0116, Exhibit A, Tab 3, 2015/16 Union's Gas Supply Plan Memorandum, September 2015, page 4.
[8] EB-2015-0122, Exhibit D, Tab 4, Schedule 1 - 2014-2015 Enbridge's Gas Supply Plan Memorandum dated April 2015, page 5.

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| | | | | communities in the NDA from Dawn requires either short-haul FT or STS capacity to get gas from Dawn to the NDA in the winter (previously FT from Empress was used in the winter supplemented by STS). Union's new approach changes the cost from a transportation cost which gets evaluated in landed cost to a storage cost which would be hidden from a landed cost perspective. Therefore, the all-in annualized cost to serve these northern service must be understood through evidence submission and approval by the Board. A similar effect is a concern in Enbridge's EDA but Enbridge has kept more FT capacity thus maintaining a more balanced approach. |

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| **2** | **Guiding Principles** | | | |
| Inherent Risks | The gas supply planning process manages inherent risks to ensure that a sufficient, cost effective supply of natural gas will be available within the local distribution company's franchise area to meet customer needs. The inherent risks include reliability, supply interruption, changing supply dynamics, price volatility and cost. Although risks are not entirely eliminated, the inherent risks are mitigated by applying Board approved methodologies and a balanced application of gas supply planning principles when establishing the portfolio of transportation, storage, and natural gas supply. | | | |
| Criteria | The goal of the gas supply plan is to ensure that customers that rely on Union for gas supply and upstream transportation service receive secure, diverse gas supply at a prudently incurred cost. Union uses a balance of the principles to develop the gas supply plan portfolio and manage the associated risks and gas costs. The gas supply guiding principles were reviewed by Sussex Economic Advisors and accepted by the Board in EB-2013-0109 and are discussed below. | Enbridge uses a balance of 4 principles to develop the gas supply plan portfolio and manage the associated risks and gas costs. A balance implies that the principles do not always align with each other and at times require a degree of judgement when being applied to gas supply planning. For example, the most cost effective transportation portfolio would typically include only the single lowest landed cost path. However, in order to maintain diversity, flexibility and reliability, other transportation paths that may not have the lowest landed cost are included in the portfolio.<br><br>The principles and the inherent risks have been discussed by Enbridge in a variety of forums including the 2014-2015 Gas Supply Planning Memorandum[9] and are captured below. | No material differences | |

[9] Ibid, page 8

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| Guiding Principles | 1. **Ensure secure and reliable gas supply to Union's service territory -** Union has an obligation to ensure its firm sales service customers have access to secure and reliable gas supply sources as well as ensuring sufficient firm transportation for Union North bundled DP customers. Union ensures adequate **firm** transportation capacity is available on a sustained basis to meet firm design day and annual demands through transportation capacity contractual rights.<br><br>*Union is the supplier of last resort and this guiding principle mitigates the risk of customers not having ongoing access to gas supply when needed. The gas supply plan ensures **firm** transportation capacity is available to meet design day demands for Union North sales service and bundled DP customers, while ensuring Union South customers' annual demands are met.*<br><br>2. **Minimize risk by diversifying contract terms, supply basins and upstream pipelines** - Union's current upstream transportation portfolio and related supply are diversified with respect to supply basin access, gas supply producers and marketers, contract term and transportation service provider.<br><br>*Having diversity of producer, pipeline and basin mitigates the risk of* | 1. **Reliability** – Enbridge is the "supplier of last resort" and as a result supplies are sourced from established liquid hubs and transported to the markets served by Enbridge via firm transportation contracts in order to mitigate delivery interruption;<br><br>2. **Diversity** – Mitigates reliability and cost risks by procuring supplies from multiple procurement points and transporting supplies to market and/or storage through several different paths; and<br><br>3. **Flexibility** – Manages shifting demand requirements through differentiated supply procurement patterns and provides operational flexibility through service attributes and contract parameters. | No material differences. Both utilities consider reliability, diversity and flexibility in their respective gas supply portfolios. | FRPO-<br>a. Criteria – Union speaks of diversity but is not concerned that over 90% of deliveries for Union South originate at Dawn – what criteria does Union have for path diversity in the winter? What does SENDOUT use as constraints?<br>b. As mentioned objectives, the total costs of feeding delivery areas must be understood as opposed to landed costs.<br>c. Inherent risks – an aspect of economic prudency is accessing supply at source and supply closer to market minimizing exposure to unforeseen circumstances and the potential for stranded assets. Said differently, if a utility sources all gas in the supply field, unforeseen circumstances and market evolution may make that decision uneconomic (e.g., Alliance). Buying a |

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| | *customers not having access to gas supply when needed as a result of an outage on a pipeline, supply constraint at a certain basin, or producer/marketer non-performance. Varying contract terms ensure the portfolio is flexible enough to adjust to changing supply dynamics and mitigates pricing anomalies associated with any one supply basin ensuring the portfolio continues to be at a reasonable cost.*<br><br>3. **Encourage new sources of supply as well as new infrastructure to Union's service territory** - Union continues to seek new sources of cost-effective supplies to serve its customer base either through accessing new supply sources with existing infrastructure or participating in longer-term projects to encourage the development of new infrastructure to and through Ontario.<br><br>*This guiding principle provides diverse gas supply at a prudently incurred cost and enhances diversity and reliability. Encouraging new infrastructure will add new supplies and create and/or enhance competition.* | | | portion of the portfolio to the delivery or market area allows the utility to balance its portfolio and take advantage of the market working to reduce costs. It is accepted that this approach could result in some higher costs of gas in some circumstances. However, so does buying the gas by choosing what is believed to be the better path in the short term and accepting a longer term contract with its inherent risks. |
| | | 4. **Landed Cost –** Balances gas supply costs with the other principles and ensures low cost natural gas supply for customers. | Enbridge has a separate guiding principle highlighting cost with a balance across the other principles. | |

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| | | | As noted above, Union uses a balance of the principles to develop the gas supply plan portfolio and manage the associated risks and gas costs. | |
| | 4. **Meet planned peak day and seasonal gas delivery requirements**<br>• Design day requirements – plan to provide the necessary service to sales service and bundled DP customers on the day of highest anticipated demand in each delivery area in Union North and Union South.<br>• Seasonal/annual requirements – plan to be able to meet the annual requirements of in-franchise consumption demands while balancing the summer / winter load changes through supply and the use of storage assets.<br><br>*This guiding principle mitigates the risk of customers not having access to sufficient gas supply on the coldest day, while also utilizing the available storage to meet the seasonal / annual requirements.* | | The Gas Supply Planning process contemplates design day and seasonal / annual demand requirements for both companies.<br><br>Union has a separate guiding principle that specifically identifies the need to meet planned peak day and seasonal gas delivery requirements.<br><br>Enbridge contemplates meeting design day and seasonal /annual demand in the overarching objectives of the gas supply plan. | |
| | 5. **Deliver gas to various receipt points on Union's system to maintain system integrity -** The Union South transportation portfolio has delivery points at Dawn, Parkway, Kirkwall, St. Clair and Ojibway. In addition to the physical connections Union has with | | Union has a separate guiding principle to maintain system integrity, Enbridge addresses this through the specific guiding principles of Reliability, | |

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| | adjoining pipelines, it is also Union's practice to contractually receive gas at multiple points.<br><br>*This guiding principle reduces Union's reliance on one receipt point for all of its gas supplies. A system interruption or upset would not cause a complete supply failure to Union's system.* | | Diversity and Flexibility | |

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| **3 Planning Horizon** | | | | |
| Gas Supply Plan | Union prepares a 5-year rolling gas supply plan that is updated annually, with the primary focus being the first two years.<br><br>The 2 year planning horizon ensures that a complete gas year cycle is taken into account as the gas supply plan is developed.<br><br>The timeframe to develop the gas supply plan spans approximately 9 months. This is an involved and integrated process as shown in the 2015/16 Gas Supply Memorandum[10], that is initiated with the preparation of the demand forecast that typically starts in February and culminates with the gas supply memorandum being filed with the Board as part of the annual rate application in September. | Prior to developing a gas supply plan, Enbridge conducts an annual design day and baseload day demand analysis over a 5 year planning horizon with the primary focus being the first two years. A main purpose of these analyses is to determine the expected demand in future years, in order to evaluate the renewal, addition and shedding of transportation and/or other market-based solutions to meet that demand.<br><br>Enbridge develops the gas supply plan over a 2 year planning horizon with the primary focus being on the first year. The 2 year planning horizon ensures that a complete storage management cycle is taken into account as the gas supply plan is developed. The primary focus is on the first year to correspond with the annual rate application that is filed with the Board.<br><br>The planning horizon to develop the gas supply plan spans approximately 9 months. This is an intensive process which is initiated with the development of a demand forecast that traditionally begins in February. The outputs and cost consequences of the gas supply plan that is developed are filed with the Board as part of the annual rate application in September. | No material differences | FRPO - While the LDC's run a 5 year model of SENDOUT, the output is not in front of the Board as evidence nor for approval. Other jurisdictions require that output reports are required to demonstrate robust analytics around alternatives. SENDOUT can generate summary reports to demonstrate the efficacy of proposed portfolio approaches relative to alternatives. |

[10] EB-2015-0116, Exhibit A, Tab 3, 2015/16 Gas Supply Plan Memorandum, September 2015, Appendix A

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| Contracting Decisions | The planning horizon for Union's contracting requirements is typically 2-3 years with a focus on contract renewal requirements (i.e. TransCanada has 2 year renewal requirements) and plans subsequent to contract expiry of upstream transportation capacity. In some cases, the planning horizon will be up to 15 years (or longer) if a long-term contract commitment is required to support capital investment and new infrastructure.<br><br>Union contemplates future trends and new infrastructure open seasons that may require longer term planning (i.e. NEXUS) and leaves a certain amount of flexibility should future demands change (i.e. Demand Side Management ("DSM") or Cap and Trade impacts) | Contracting requirements are determined by Enbridge through an annual design day and baseload day demand analysis. The planning horizon for these analyses will correspond with the term of the arrangements being considered. In most cases, this will involve contract renewals which typically require a 2 year planning horizon. In situations where TransCanada Pipelines Limited ("TransCanada") has issued a Term-up Notice in accordance with their Firm Transportation Service Toll Schedule, the planning horizon would be 5 years. When new transportation capacity is being considered, the planning horizon is longer. Where this involves new infrastructure, the planning horizon will range from 15 to 20 years as a result of the longer contract term commitment when new capital investment is required. | No material differences. Both utilities consider contracting decisions for the term of the gas supply planning horizon keeping in mind contracts may be longer than the term of the plan due to renewal provisions and the longer term nature of contracts supporting new infrastructure. | |

| | Union | Enbridge | Difference / Rationale | Comments |
|---|---|---|---|---|
| **4** | **Current & Future Trends (short/long-term) Influencing Gas Supply Planning** | | | |
| | Union monitors current and future trends to anticipate the impacts on Union's upstream transportation portfolio and gas supply purchase decisions including supply shifts, new pipelines/infrastructure; system expansions; migration to/from Direct Purchase; and commodity pricing in different basins.<br><br>Future trends impacting the gas supply plan are reviewed at Natural Gas Market Reviews by the OEB and intervenors and where appropriate and are included as part for the Gas Supply Plan Memorandum. Some examples of market trends and regulatory decisions that have, or may in the future, impact on gas supply planning include:<br>• Conversion of long-haul transportation to short-haul transportation<br>• NEXUS transport and access to Utica Marcellus Supply in close proximity to Union<br>• Less reliance on discretionary services due to changing TransCanada operations and discretionary service availability and pricing.<br><br>Union participates in the annual Natural Gas Market Review and works with ICF (a consultant) to identify and track trends. The impacts are reflected in the gas supply plan as transportation contracting decisions are made. | Market trends and regulatory oversight have a significant influence on gas supply planning and are monitored by Enbridge on a frequent basis. Some examples of current and future market trends and regulatory decisions that have, or may in the future, an impact on Enbridge's gas supply planning are outlined below.<br>• An increased use of annual transportation services to replace seasonal transportation services, such as Short Term Firm Transportation, as a result of unlimited pricing flexibility being applied to discretionary services on the TransCanada Mainline.<br>• Changes to the direction of flow and distance of haul for transportation services that are used to meet market demands as a result of incremental market access to more proximate natural gas supply being produced from evolving shale formations.<br>• An increase in the renewal term for existing transportation contracts on the TransCanada Mainline as a result of increased focus on discretionary capacity management on the TransCanada Mainline.<br>• An increase in long-term contract commitments for new transportation capacity as a result of increased focus on discretionary capacity management on the TransCanada Mainline and the need for infrastructure investments that provide market access to more | No material differences in the process of identifying and taking future trends into consideration in the gas supply planning process. | FRPO - With substantial increases in supply available to the market, the market is supply driven. This evolution should be recognized in the utilities plans reflecting a balance in gas purchased in the market as opposed to all at source. Buying all gas at source is not a balanced risk-managed position. In fact, it can lead to higher costs of excess underutilized capacity which can be optimized for shareholder benefit and some level of consumer cost mitigation. Changes in the location of supply source primarily driven by Appalachian gas have resulted in many pipelines in Northeast North America by becoming bi-directional. The LDC's ought to be required to demonstrate why increasing supply from these sources should not be a growing part of |

| | Union | Enbridge | Difference / Rationale | Comments |
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| | | proximate natural gas supply being produced from evolving shale formations | | their respective portfolios. We appreciate Enbridge's positive step in that direction with significant commitment to Niagara delivery and we would encourage further consideration of Iroquois. On the other hand, Union continues to maintain only a small commitment to Niagara. Among Union's stated reasons for not increasing commitments at Niagara was the lack of incremental capacity from Niagara. However, TCPL presented its expansion plans for the Niagara to Kirkwall line showing a low cost solution to add 400 to 500 TJ's per day. In our view, requiring the LDC's to demonstrate a thorough evaluation of alternatives in its long term plans will reduce the risk of the Board approving another long term contract without complete information. |

| | Union | Enbridge | Difference / Rationale | Comments |
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| **5** | **Gas Supply Planning Inputs** | | | |
| Demand – Annual | The monthly demand forecast for the upcoming 3 year period is updated annually to reflect projected changes in consumption and to reflect an additional year of weather using Board-approved weather normalized methodology (50:50 blended approach of the 20-year declining trend and the 30-year average methodology - per Union's 2013 Cost of Service, EB-2011-0210), net of Demand Side Management ("DSM").<br><br>The annual demand forecast assumes no migration between sales service and bundled DP customers subsequent to April 1 for the upcoming year.<br><br>The annual demand forecast includes compressor fuel and company used gas offset by customer supplied compressor fuel forecast and unaccounted for gas forecast. | Annual demand is largely a function of forecasted weather conditions. Enbridge determines the budget weather using separate Board approved methodologies by weather zone which includes:<br>• Central – 50% based on a 10-year moving average and 50% based on a 20-year trend forecast;<br>• Eastern – de Bever with trend regression considers 5 year weighted averages within a weather cycle; and<br>• Niagara – 10 year moving average.<br><br>The annual forecast methodology for budget demand takes into consideration the volumetric impacts of Demand Side Management ("DSM") and Unaccounted for gas forecasts and assumes no migration of bundled Direct Purchase ("DP") customers and sales service. Enbridge determines the annual budget demand by customer type as follows:<br>• General service budget demand forecast based on average use regression analysis and projected number of customers; and<br>• Contract market budget demand forecast based on grass roots approach for existing customers and probability-weighted approach for expected customers.<br><br>In order to utilize the annual budget demand in the gas supply planning process, it is disaggregated into a daily | No material differences in the process to derive the annual demand forecast.<br><br>The weather normalization methodology is based on the uniqueness of each utility as approved by the Board. Both Union and Enbridge continue to evaluate the weather normalization methodology to assess the reasonableness of the methodology.<br><br>Within the Gas Supply Plan, Union uses a monthly demand profile for annual and seasonal supply requirements; Enbridge derives a daily demand profile for the same purpose. | FRPO -<br>a. Demand<br>Sensitivity analysis for:<br>1. Seasonal load balancing e.g., +/- 10% heating degree days over the winter season to simulate supply alternatives.<br>2. For pipeline constrained areas: apply a band of a sensitivity of around growth projections to ensure security of supply while considering alternative solutions (e.g., market based service, targeted DSM).<br>b. supply<br><br>Constraints added to the SENDOUIT model to balance commodity purchased in supply field vs. amount bought in the market area.<br>c. Transportation<br><br>Seek and analyze pricing for market based solution alternatives.<br>d. storage |

| | Union | Enbridge | Difference / Rationale | Comments |
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| | | demand profile. | | What analytics has Union done, SENDOUT or otherwise to determine if additional storage beyond excess over average for in-franchise customers? e. balancing approach for DP customers<br><br>Union notes that all load balancing costs are borne by DP customers. What does Union analyze to ensure that some of those costs should not be borne by system gas customers? |
| Demand - Design Day | Design day demand is based on the coldest observed degree day in history (EB-2013-0109) for Union's delivery areas:<br>• 43.1 HDD - Union South<br>• 56.1 HDD - WDA<br>• 54.7 HDD - Fort Frances (MDA)<br>• 48.2 HDD - SSMDA<br>• 49.0 HDD - NCDA<br>• 51.9 HDD - NDA<br>• 47.1 HDD - EDA<br><br>Union develops a trend line using the daily firm customer consumption from the prior winter and the associated daily degree day data, wind speed adjusted. Union extrapolates the calculated trend line to the coldest observed degree day resulting in the estimated design day demand for | Design day demand is developed for each weather zone through regression analysis of driver variables and Board approved Design Criteria.<br><br>The driver variables that are used to determine the peak day demand include:<br>• Heating degree days;<br>• One day lagged heating degree days;<br>• Wind speed; and<br>• Customer unlocks.<br><br>Board approved Design Criteria is also used to determine the design profile which includes:<br>• 1 in 5 recurrence interval (based on a log-normal distribution) for Peak and Multi-Peak degree days | No material differences in the process to derive the design day demand, although the inputs and the level of risk inherent in the Design Criteria are different.<br><br>Union manages to the coldest observed day. There is a risk that actual weather could exceed what is reflected in Union's Gas Supply Plan.<br><br>Enbridge manages to heating degree days | OEB - Rational for chosen approach in developing heating degree day. Describe in more detail.<br><br>Energy Probe - This matter has been reviewed previously (Navigant). We suggest that based on peer group reviews, statistical analysis should be used and be common to both Union and Enbridge (unless this is not demonstrated to be |

| | Union | Enbridge | Difference / Rationale | Comments |
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| | each delivery area.<br><br>For Union North, design day demand is for the total firm requirement of the in-franchise sales service and bundled DP customers. T-service customers provide their own upstream transportation service.<br><br>As noted by Sussex Economic Advisors in the Gas Supply Planning Review filed in EB-2013-0109 Exhibit C, Tab 2, *"the use of the coldest temperature observed is reasonable as Union has experienced weather close to the coldest observed in all the gas supply planning areas; and it is consistent with the practice of the LDCs in the Sussex benchmarking analysis."*<br><br>Sussex also noted that of the 21 companies considered in their benchmarking analysis, 12 of 21 utilized the coldest day observed approach. | • Peak Day Heating Degree Days:<br>o 41.4 in the Central weather zone<br>o 48.2 in the Eastern weather zone<br>o 38.8 in the Niagara weather zone<br>• 18 Multi-Peaks over the months of January, February, and March for each of the Central, Niagara, and Eastern weather zones. | that are statistically determined through a 1 in 5 recurrence interval over a log-normal distribution. This approach was approved by the Board in Enbridge's 2013 Rate Case (EB-2011-0354).<br><br>Since the Design Criteria for Enbridge does not include the coldest observed day, there is a greater probability or risk that actual weather could exceed what has been planned for when compared to Union. If Enbridge were to align to the coldest observed day, the peak heating degree day would be higher and additional assets would be required. | appropriate due to physical market differences). Determining the appropriate methodology(ies) should be a matter for review in the next rebasing Applications. |
| Transportation | Union includes contracted transportation capacity during the gas supply plan period and contracts are reviewed to understand renewal expectations. The tolls and fuel ratios for the transportation capacity are provided from the transportation agreement or through approved toll schedules provided by the service provider. | Enbridge includes transportation inputs based on parameters contained in precedent agreements and transportation agreements such as receipt point(s), delivery points(s), contract demand, start date, and expiry date. The tolls and fuel ratios for the transportation capacity are obtained from the transportation agreement (as applicable) or through approved toll schedules provided by the | No material differences. Both utilities include contracted transportation agreements and associated tolls. | |

| | Union | Enbridge | Difference / Rationale | Comments |
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| | For Union North, the upstream transportation capacity is first sized to meet the winter design day demand requirement and then filled to meet supply requirement on the day and for the year. As a result, a portion of Union North's contract capacity is planned to be unutilized during the year resulting in planned Unabsorbed Demand Charges ("UDC"). | service provider. | | |
| Supply | Union includes supply inputs based on the various supply basins associated with contracted transportation capacity and supply is priced at the most recent Quarterly Rate Adjustment Mechanism ("QRAM") 21-day strip pricing for the gas supply plan forecast period. | Enbridge includes supply inputs based on commodity prices for supply hubs associated with contracted transportation capacity using monthly natural gas forward curves from independent third parties for a 21 day average settlement price for each forward contract month. | No material differences. Both utilities include the cost of supply in the gas supply plan based on the pricing methodology used in the QRAM process. | |
| Storage | Union includes the storage requirement for sales service and bundled DP customers based on the aggregate excess methodology (Storage Allocation Methodology approved in Natural Gas Electricity Interface Review ("NGEIR") – EB-2005-0551). Consistent with the NGEIR Decision, the allotment of storage space to in-franchise customers (including sales service, bundled DP, unbundled and T-service) is 100 PJ. Excess in-franchise space is sold as short term storage for the upcoming gas year. The gas supply plan targets control points throughout the winter including:<br>• November 1st - the plan assumes inventory is full based on aggregate excess methodology (except for integrity); | Enbridge's gas supply plan includes 97.8 PJ of underground storage at Tecumseh near Corunna in southwestern Ontario and at Crowland near Welland in the Niagara Region. The deliverability for these facilities is a function of the volume of natural gas in storage and is provided at cost of service. In addition to these facilities, Enbridge also has contracted for 24.4 PJ of storage capacity with third party providers that include contractually specified deliverability at market based rates.<br><br>New storage deliverability targets were established in the 2015 Rate Application under EB-2014-0289 and include:<br>• Maximum storage deliverability to be maintained to the end of February | Union has system integrity capacity and system integrity molecules in the gas supply plan whereas Enbridge does not.<br><br>The volume and deliverability of storage available in the gas supply plan for both utilities is different. | |

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| | • February 28th – the plan assumes sufficient inventory is available to meet design day needs; and<br>• March 31st - the plan assumes storage is empty (except for integrity).<br><br>System integrity capacity approved in the EB-2011-0210 Decision includes 3.5 PJ of system integrity space (empty) on October 31st and 6.0 PJ of system integrity supply available for March 31st. In total, of the 100 PJ of storage for infranchise customers, 9.5 PJ is reserved for system integrity. | • Storage deliverability required to meet the March peak demand to be maintained to end of March<br><br>Despite the new storage deliverability targets and increased heat sensitive load leading to a "peakier" load profile, the volume of storage in Enbridge's gas supply plan has remained relatively constant. These changes are currently being managed by increasing gas supply purchases earlier in the winter season and reducing gas supply purchases later in the winter season in order to maintain sufficient storage inventory balances. | | |
| Balancing Approach for DP customers | Inputs into the gas supply plan include the Daily Contract Quantity ("DCQ") and receipt point obligations for bundled DP customers and the forecast consumption profile and use of load balancing gas. The DCQ is calculated using weather normalized annual consumption divided by 365. As indicated above, the annual demand forecast assumes no migration between sales service and bundled DP subsequent to April 1 for the upcoming year.<br><br>From an operational perspective, any difference between deliveries and consumption is tracked in a Banked Gas Account ("BGA") for each bundled DP customer. For Union South, bundled DP customers are required to meet checkpoint obligations at September 30th to reduce excess supply so as not to | The gas supply plan assumes that bundled DP customers will consume natural gas in accordance with their contractually specified consumption profile and as a result will have no volume in their Banked Gas Account ("BGA") at the end of the contract term. It is also assumed in the plan that there will be no migration between the various bundled DP and sales services.<br><br>From an operational perspective, bundled DP customers deliver natural gas supply to Enbridge based on a contractually defined Mean Daily Volume ("MDV") over the contract term. Any variance between the deliveries received by Enbridge from a bundled DP customer and volume of natural gas consumed by the bundled DP customer is tracked in a BGA. The bundled DP customer is required to maintain a BGA | No material differences in supply planning assumptions as both utilities assume that bundled DP demand and supply are equal within the gas supply plan.<br><br>From an operational perspective, Union and Enbridge have different balancing requirements that reflect the differences in the gas supply portfolio and use of assets for each respective market area.<br><br>The purpose of Union's load balancing | |

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| | exceed the contracted checkpoint amount. At February 28th, bundled DP customers may need to bring in additional supply so as not to be below the contracted checkpoint amount. At the contract year end these customers need to be within contract expiry tolerances (i.e. +/- 4%). For Union North, bundled DP customers are required to balance excess supply (by Union ratcheting down supply) starting month 5 of the contract period, and to balance to zero at contract expiry through balancing transactions or financial balancing with Union.<br><br>Union has the obligation to balance consumption and weather variances on behalf of bundled DP customers:<br>• that do not meet checkpoint;<br>• for weather variances after the checkpoint balancing actions are communicated; and<br>• for weather and consumption variances outside of the balancing checkpoints.<br>Any load balancing costs incurred by Union are recovered from bundled DP customers. | balance that is no greater than +/-5.5% of the annual contracted volume by the end of the contract term. The bundled DP customer is then required to reduce any volumes in the BGA to zero prior to 120 days after the contract term expiry date. | obligations is to ensure that there is sufficient gas in storage at March 31 and adequate storage capacity available at November 1 in order to maintain system integrity. The checkpoint balancing requirements for bundled DP customers in Union South provides DP customers the opportunity to manage the costs of balancing to contracted BGA checkpoints. | |

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| **6** | **Gas Supply Planning Outputs** | | | |
| Transportation | The gas supply plan identifies:<br>• Incremental transportation capacity requirements for annual demand. For Union South, shortfalls in supply are identified in the gas supply plan as "uncommitted" and are priced at Dawn subject to final transportation contracting decisions;<br>• Incremental design day transportation capacity requirements for Union North; and<br>• Planned unutilized transportation capacity for Union North resulting in UDC.<br><br>Subsequent to plan completion, Union evaluates how to meet any transportation capacity requirement shortfalls by contracting for incremental upstream transportation capacity, purchasing supply at Dawn, or through market based solutions.<br>• Union South – gas supply plan only contemplates the annualized supply. Design day demand for Union South is the total firm requirement of all in-franchise customers (including T-service). The gas supply plan is an input to meeting design day requirements as supply, storage and transmission assets are utilized to meet design day as part of the Storage and Transmission System Plans.<br>• Union North – gas supply plan reflects assets currently contracted to meet | Enbridge's gas supply plan includes the portfolio of transportation that is needed to meet the demand that is determined through the annual design day and baseload day demand analysis described above in section 3. The transportation portfolio includes existing and renewed contracts as well as new capacity. When evaluating options for the transportation portfolio to meet annual design day demand, Enbridge takes each of its 4 gas supply planning principles into consideration in addition to a strategic view of natural gas market conditions.<br><br>Once the portfolio of assets is established, it is used to develop the gas supply plan. The portfolio that is required to meet design demand is optimized to meet annual and seasonal demand. The key principle applied in this part of the process is landed cost – Enbridge evaluates and determines which assets should be used throughout the year to achieve the lowest cost outcome. | No material differences in the outputs in the gas supply plan. Both utilities contemplate capacity requirements to meet design day and annual and seasonal demand and how the capacity will be utilized on a planned basis. | FRPO - In our view, the key to ensuring the appropriate analyzation of the right balance of gas management solutions is in the effective input of a range of parameters and alternatives complete with the reporting of the results to plan for robust, cost effective solutions. These outputs would report at a summary level on all of the below parameters with cost estimates demonstrating superior solutions at right level of calculated risk. |

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| | design day in each of the six northern delivery areas. Design day demand and capacity must be considered within the gas supply plan as Union North is physically separated from the Union Dawn Storage and Transmission System. This includes assets that provide for delivery to and from storage including STS, short-haul, and enhanced market balancing services on TransCanada. | | | |
| Commodity Portfolio | The gas supply plan identifies total annual and seasonal supply requirements for Union South and for each delivery area in Union North based on the various supply basins associated with contracted transportation capacity. For Union South, shortfalls or "uncommitted" supply requirements are assumed to be purchased at Dawn in the gas supply plan subject to final transportation contracting decisions | Enbridge's gas supply plan identifies the planned procurement of supply at all available supply basins/hubs and the associated costs on a daily basis based on forecast demand and pricing. | No material differences | |
| Storage | Union's gas supply plan provides the planned injection and withdrawal volumes and the forecast monthly storage inventory position for sales service and bundled DP customers. | Enbridge's gas supply plan identifies the planned injection and withdrawal volumes, storage balances, and costs for all storage facilities and contracts on a daily basis pursuant to injection and withdrawal parameters and storage contract parameters. | No material differences | |
| Market Based Solutions | Union will purchase market based solutions to meet transportation capacity requirement shortfalls if firm capacity is not available (i.e. market based transportation service between Dominion South Point (Marcellus) and Dawn). Market based solutions can be exposed to | Enbridge will utilize market based solutions to mitigate supply deficiencies that are not addressed through contracted supply, transportation, and storage assets. Market based solutions may include, but are not limited to, curtailment, peaking supplies, delivered supplies, capacity assignments, | Both utilities may utilize market based solutions if appropriate.<br><br>Union does not have a formal curtailment service similar to | |

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| | price volatility and availability on an annual basis. Union typically will use a market based solution until a permanent solution can be found. | and storage agreements underpinned by the purchase and sale of futures contracts rather than physical storage assets. | Enbridge, as Union does not interrupt distribution service for supply management needs. This is managed by each individual customer due to the multi-point balancing requirements. | |

<table>
<tr><th></th><th>Union</th><th>Enbridge</th><th>Difference / Rationale</th><th>Comments</th></tr>
<tr><td>7</td><td colspan="4">Planning Summary- Risk and Costs</td></tr>
<tr><td></td><td>A cost risk trade-off is not performed by Union as part of the annual gas supply plan because Union has the obligation to serve customers and needs firm assets to meet peak design day demand and annual balancing requirements.<br><br>Union follows the Board-approved gas supply planning principles to derive a gas supply plan which satisfies the goal of ensuring customers receive secure, diverse gas supply at a prudently incurred cost.<br><br>The principles are designed to limit the risk of gas supply not being available when it is needed to meet annual, seasonal and design day delivery requirements. The gas supply plan is based on “normal weather”. For Union North, the gas supply plan also considers assets required to ensure supply can be delivered on the coldest day (design day). Union’s gas supply plan is flexible and was effective in managing the warmest winter on record (winter 2011/12), as well the opposite extreme, the coldest winter on record (winter 2013/14). For Union South, assets are also designed to meet peak day, however the planning for peak day for Union South is outside the gas supply plan.<br><br>The gas supply plan is underpinned by Board-approved methodologies, including</td><td>The level of risk that is incorporated into Enbridge’s gas supply plan is not determined when the gas supply plan is being developed. The level of risk is largely defined in advance of the gas supply plan development through the Board approved Design Criteria that are used to establish the design demand.<br><br>Enbridge discussed the relationship between the risk assumed in the Design Criteria and its gas supply plan costs at the 2014 Natural Gas Market Review indicating that “[a] more conservative level of risk will result in a gas supply plan that requires higher upfront budget costs to procure storage and transportation assets and will mitigate the need to procure incremental commodity and transportation assets should actual demand exceed what was budgeted. The converse is true when a less conservative approach is taken to the cost/risk trade-offs in the gas supply plan.”[11]<br><br><table><tr><th rowspan="2">Design Criteria</th><th colspan="2">Demand Variance Above Budget</th></tr><tr><th>Minimal</th><th>High</th></tr><tr><td>Risky</td><td>Low Budget Cost<br>Neutral Execution Cost</td><td>Low Budget Cost<br>High Execution Cost</td></tr><tr><td>Conservative</td><td>High Budget Cost<br>Neutral Execution Cost</td><td>High Budget Cost<br>Low Execution Cost</td></tr></table><br>This discussion from the 2014 Natural Gas Market Review makes the assumption that</td><td>The differences between Union and Enbridge have been identified in section 5.<br><br>As noted above, the Design Criteria approved for Enbridge is more risky than for Union. This provides for lower costs where actual temperatures are warmer than budgeted, but exposes Enbridge’s ratepayers to potentially more costs, or risk of being unserved in the event of a colder than budget winter.<br><br>Union manages to the coldest observed day. Union’s gas supply portfolio ensures that assets are available every day to meet customer demands based on the coldest observed day without compromising service and exposing customers to potential significant</td><td>FRPO - LDC’s should be required to demonstrate analysis done on a variety of Sensitivity analysis using summary reports from SENDOUT as outlined above.<br><br>Board Staff – Need for clarity for the following sentence.<br><br>“ For Union South, assets are also designed to meet peak day, however the planning for peak day for Union South is outside the gas supply plan.”</td></tr>
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[11] EB-2014-0289 Enbridge Written Comments filed January 16, 2015, page 4 and 5

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| | system integrity assets, designed to ensure secure and reliable services to Union's customers. Union's gas supply portfolio ensures that assets are available every day to meet customer demands on the coldest day without compromising Union's ability to get gas to the delivery area to serve customers and exposing customers to potential significant incremental cost and asset availability risk during periods of volatility. | incremental supply and transportation would be available (albeit at a higher cost). The use of more risky Design Criteria increases the risk that actual demand will exceed design demand and there is no assurance that incremental supply and transportation will be available. In such a situation, the cost consequences and customer impacts increase significantly as emergency measures such as the interruption of firm customers may be required to maintain the integrity of the distribution system.<br><br>To some degree, the level of risk in Enbridge's gas supply plan for factors other than demand variations is mitigated through a disciplined and balanced application of the gas supply planning principles. A gas supply portfolio that is reliable, diverse, and flexible will be more resilient through unplanned infrastructure disruptions and will also be more cost effective through periods of localized extreme weather conditions or high demand. | incremental cost and asset availability risk during periods of volatility. However, as noted in Section 5, there is a risk that actual weather could exceed the coldest observed day and require more assets than are reflected in Union's gas supply plan. | |

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| **8** | **Review & Approval Process (External)** | | | |
| | Union's gas supply plan is presented and made available to the Board and intervenors in the annual Gas Supply Memorandum and Stakeholder Meeting Presentations. The Gas Supply Plan Memorandum is filed as part of the annual rates proceeding each fall prior to the start of the gas year. In addition, a Stakeholder presentation is provided as part of the annual deferral proceeding in the April timeframe during the gas year. Feedback received during this process is considered when developing the following year's gas supply plan.<br><br>Union files an updated gas supply plan as part of cost of service rebasing proceedings. Union North transportation and storage rates are set as part of the cost of service rebasing proceeding. During the Incentive Regulation Mechanism ("IRM") period, Union North transportation and storage costs included in rates for sales service and bundled DP customers are updated as necessary to reflect updated pipeline tolls as part of the QRAM process.<br><br>Union will file additional evidence with the Board if critical aspects of the gas supply planning process change during an IRM period (An example is the Dawn Reference Price proceeding, EB-2015-0181).<br><br>Commodity rates for Union North and | Enbridge's gas supply plan portfolio and the associated cost consequences are filed with the Board as part of the annual rate application. Enbridge has committed to filing expanded gas supply evidence in its next rate adjustment proceedings, including an explanation of the principles driving the gas supply plan, and how those principles have been implemented. The Board and interested parties are provided with opportunities throughout the regulatory proceeding to review the information on the evidentiary record and seek clarity through the various phases of the proceeding.<br><br>Information related to the gas supply plan and considerations for future gas supply plans is typically presented by Enbridge at the Incentive Regulation Stakeholder Day that is held around April, and is also addressed in Enbridge's annual Gas Supply Plan Memorandum. Feedback received during the Stakeholder Day is considered when developing the following year's gas supply plan.<br><br>If any material changes are anticipated for the Design Criteria or other critical aspects of the gas supply planning process, this will be highlighted in detailed evidence filed with the Board. Most recently, this was done in respect of changes to storage deliverability targets which were filed with the Board and approved as part of | Enbridge files an update to the gas supply cost consequences annually and seeks OEB approval as part of the approved IRM.<br><br>Union files the gas supply plan cost consequences in the cost of service proceeding. Union's gas supply plan is presented and made available to the Board and intervenors in the annual Gas Supply Memorandum and Stakeholder Meeting Presentations. In addition, Union provides information to the Board and interested parties regarding for all new transportation contracts annually, including the landed cost analysis as part of the deferral disposition proceeding | FRPO -We recommend the Board require submission of the rolling 5-year gas acquisition strategy complete with summary reports from SENDOUT. These summary reports should include input assumptions, applied constraints and criteria output reports showing the results for the proposed approach and reasonable alternatives complete with sensitivity analysis. In our review, these reports would filed as evidence submitted for testing and Board approval.<br><br>Energy Probe - As well as the material provided at the Gas Supply Planning Forum, both utilities should file an Annual Gas Supply Outlook Memorandum in a common format similar to that filed by Union. |

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| | Union South, and transportation rates for Union South are set as part of the QRAM process.<br><br>Union provides information to the Board and intervenors regarding incremental contracting decisions for new transportation contracts as part of the annual deferral disposition proceeding. The Incremental Contracting Analysis process, as approved in EB-2005-0520, includes the rationale for entering into the contract, the benefits, the contract parameters and the landed cost analysis.<br><br>Union seeks pre-approval, as necessary, of the cost consequences of long term contracts in accordance with the filing guidelines for Pre-Approval of Long-term Natural Gas Supply and/or Upstream Transportation Contracts issued by the Board in EB-2008-0280 (For example, the NEXUS proceeding, EB-2015-0166). | Enbridge's 2015 rate adjustment application. Where applicable, Enbridge may also seek pre-approval of long term contracts using the Guidelines for Pre-Approval of Natural Gas Supply and /or Upstream Transportation Contracts from the EB-2008-0280 proceeding. A recent example was the pre-approval of the costs for new capacity on NEXUS which was requested and approved under EB-2015-0175. | | |

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| **9** | **Execution of the Plan - Operations and Risk Management** | | | |
| Transportation Acquisition | Union refers to its gas supply planning principles when making upstream transportation contracting decisions. Transportation is acquired through negotiation with pipelines or through open seasons for new and existing capacity that are conducted by transportation service providers. Union must take a strategic long term view of the natural gas industry when assessing upstream transportation options by:<br>• Minimizing risks through portfolio diversification;<br>• Attracting new infrastructure to Ontario; and<br>• Understanding long-term market trends.<br><br>Union does not make long-term contracting decisions based on short-term pricing anomalies. This ensures that supply is prudently purchased over the long-term.<br><br>Once a path is chosen based on a qualitative assessment, a landed-cost analysis is performed to ensure the cost is reasonable as compared to other options.<br>• If the landed-cost of supply is reasonable using that transportation path, the contracts are negotiated and executed.<br>• Using this approach ensures that the cost of supply for Union's customers is prudently incurred over the long-term. | Transportation capacity to meet the annual design day and baseload day demand analysis (as described in sections 3 and 6) is typically acquired through negotiation with pipelines or through open seasons for new and existing capacity posted by transportation service providers. In the case of new capacity requiring new assets to be constructed, this will result in binding precedent agreements that are negotiated between Enbridge and the transportation provider. When the transportation capacity goes into service, the precedent agreement is superseded with a gas transportation agreement that has been negotiated between Enbridge and the transportation provider.<br><br>Enbridge does not publically disclose the details related to transportation arrangements that are being negotiated until the negotiations have been successfully concluded. This is necessary to ensure the integrity of current and future negotiations. | No material differences | FRPO - It is recognized and accepted that market conditions and pipeline developments change over time. As a result, the utilities ought to be free to evolve their plans in the public interest. In changing their gas acquisition strategies, the utility would identify the changes in base assumption and/or constraints that drove the change. Changes in the medium to long term strategy would be filed with the annual rate filing. Changes that have already been implemented would be filed with the deferral account disposition proceeding. |

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| | Union is unable to file potential transportation portfolio path details prior to negotiating and executing contracts for a number of reasons:<br>• Union would lose its negotiating position with upstream pipelines if it required pre-approval of its contracting intentions.<br>• Depending on how the negotiation process proceeds, Union requires the ability to adjust its plans through the year as conditions change (a pipeline's ability to offer capacity, rate, term, etc.).<br>• During the actual negotiation, key parameters may change based on changing market conditions or service availability on the pipeline or competing pipeline.<br>• The gas supply planning and implementation process targets November 1 implementation each year. The gas supply plan is finalized late in the summer and final contracting decisions are made subsequent to the approval of the gas supply plan. Due to the effort required in addressing its uncommitted transportation requirements, Union may be executing contracts up until November 1. In addition, the timing of new capacity open seasons may not be known and often there is a small window in which to respond.<br>• Union may also procure transportation in the secondary market. | | | |

| | Union | Enbridge | Difference / Rationale | Comments |
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| Gas Supply Purchases | Gas supply is contracted in accordance with the System Gas, Gas Procurement Policy and Procedures (filed in EB-2011-0210).<br><br>Union develops a monthly procurement plan identifying the specific volumes and dates for gas supply purchases. Union's procurement plan will layer in annual, seasonal and monthly purchases each month. The monthly procurement plan is approved by the Vice President of BDS&T and the Director and Manager of Gas Supply on a monthly basis. On a planned basis, gas supply is purchased:<br>• Through a Request for Proposal ("RFP") process (written and verbal);<br>• Primarily based on index price contracts;<br>• Primarily in the forward market; and<br>• Primarily on a monthly, seasonal, and annual basis.<br><br>As system operator, Union manages many operational factors including:<br>• Actual and forecast consumption relative to planned consumption for its sales service customers (90% of all 1.4 million customers);<br>• Seasonal balancing requirements for sales service customers at key control points ;<br>• Weather variances outside of checkpoint balancing for bundled DP customers;<br>• Changes in supply and balancing | Enbridge procures natural gas supply at various points in time leading up to and during the execution of the gas supply plan in accordance with its Natural Gas Procurement Policies and Procedures.<br><br>The procurement of supply is initiated leading into the start of each year. Since it is not known at that time if actual demand will be less than budgeted, only a portion of the total supply requirement is purchased. The supply is purchased through a Request for Proposal process based on a combination of annual and seasonal terms.<br><br>Leading into each month, the supply requirements are re-evaluated based on the level of demand that has been experienced, the level of supply that has been procured, BGA balancing requests from bundled DP customers, migration of customers between bundled DP and sales service, and a revised forecast of short and medium term demand. If additional supply is required for the upcoming month, it will be procured on a monthly basis through a Request for Proposal process, electronic trading systems (i.e. NGX) or directly from approved suppliers.<br><br>During each month, any short term supply shortfalls will be procured on a daily or rest of month basis through electronic trading systems or directly from approved suppliers. | No material differences. Both utilities acquire supply in accordance with their respective Gas Procurement Policy and Procedures. | |

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| | requirements as customers move between sales service and DP;<br>• Unaccounted for gas and compressor fuel variances; and<br>• Supply or pipeline disruptions – planned or unplanned. | | | |
| Operational Variances | Union frequently monitors actual and forecast consumption during the winter.<br><br>If actual consumption is greater than plan and sustained colder than normal weather is forecast (short-term and long-term to end of month / season) (forecast weather data is supplied electronically by DTN Meteorlogix):<br>• Union will fill planned UDC and purchase spot gas (typically at Dawn) for delivery as early as December based on actual and forecast variances to date;<br>• Union will layer in additional purchases through the winter to manage actual and forecast variances as new information is available;<br>• Union will purchase supply primarily in the forward market (buying the next month) rather than in the daily cash market to avoid potential price volatility;<br>• Union utilizes storage at Dawn to minimize the need to purchase gas during periods of high demand and in the daily cash market; and<br>• Union South bundled DP customers' BGA balance must not go below their February 28/29th checkpoint, thereby | Enbridge addresses the execution of the gas supply plan and management of variances between budgeted and actual weather and demand through regular operational planning meetings overseen by Enbridge's Director Energy Supply and Policy.<br><br>Frequency of the meetings range from daily (during periods of high demand and/or high demand variability) to bi-weekly (during periods of low demand and/or low demand variability).<br><br>Operational planning meetings take into consideration:<br>• Actual and budget year-to-date variances in weather and demand;<br>• Short term (7 day) and medium term (approximately 45 days) weather forecasts;<br>• Revised gas supply plan outlook that takes into account actual and short term demand forecast;<br>• Operational updates from Gas Control and Gas Storage;<br>• Procurement strategies; and<br>• Balancing requirements for DP customers. | No material differences. Both utilities monitor and manage changes in demand throughout the year. | |

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| | ensuring supply is acquired to meet the checkpoint and assist Union in managing colder than normal weather variances and to eliminate the need for distribution interruptions for supply related reasons.<br><br>If actual consumption is less than plan and sustained warmer than normal weather is forecast:<br>• Union will utilize storage to inject excess gas during periods when the gas is not required<br>• Union reduces supply purchases to manage planned UDC, as well as actual and forecast excess supply (typically in the April to October time period);<br>• The excess pipe capacity is left unutilized based on the greatest avoided cost of landed supply;<br>• Unutilized upstream transportation capacity is released to the secondary market and proceeds are used to reduce UDC costs;<br>• Net UDC costs are captured in gas cost deferral accounts and are reviewed and disposed of as part of Union's annual deferral disposition process; This includes costs for planned UDC and incremental UDC to manage lower consumption; and<br>• Union South bundled DP customers' BGA balance must not be greater than their September 30th checkpoint, thereby ensuring excess supply is taken off the system to meet the checkpoint | Periods of peak or near peak day demand are typically managed through:<br>• Utilization of peaking services; and<br>• Curtailment of customers on interruptible distribution services.<br><br>Periods of forecasted long term higher demand than budget are typically managed through:<br>• Incremental procurement of supply, typically on a month ahead basis, at the most economical supply hubs/basins that correspond with unutilized transportation capacity; and<br>• Withdrawing from storage balances allocated to maintain incremental deliverability targets.<br><br>Periods of forecasted long term lower demand than budget are typically managed through:<br>• Reduced procurement of supply at least economical supply hubs/basins; and<br>• Unutilized transportation capacity released to the secondary market to reduce UDC costs. | | |

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| | and assists Union in managing warmer than normal weather variances and storage targets at November 1. | | | |

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| **10** | **Reporting on Execution** | | | |
| | Union reports to the Board on execution of the gas supply plan through processes defined by the Board including:<br>• QRAM Process - Variances in the actual cost of the gas supply portfolio, relative to what is included in rates, are captured in cost of gas deferral accounts and disposed of as part of the QRAM process.<br>• Annual Deferral Disposition Proceeding;<br>o UDC Deferral Disposition;<br>o Incremental Transportation Contracting Analysis as outlined in the EB-2005-0520 Settlement Agreement;<br>• Annual Stakeholder Meeting. As noted in Section 8, Union's gas supply plan is made available to the Board and intervenors in the Annual Gas Supply Memorandum as part of the annual rates proceeding each fall prior to the start of the gas year. The active gas supply plan is reported on through a stakeholder presentation as part of the annual deferral proceeding in the April timeframe during the gas year. | Enbridge reports on the execution of its gas supply plan through various processes defined by the Board. These include QRAM applications, the annual Incentive Regulation Stakeholder Day, the annual deferral account disposition proceeding (which includes the Earnings Sharing Mechanism) and the annual rate adjustment proceeding.<br><br>The manner in which Enbridge's gas supply plan is presented and reviewed in the Board's annual processes is described above in section 8.<br><br>The QRAM process is a mechanistic approach to capture the impact of updated future forecasted prices on the Board approved gas supply portfolio. The QRAM process also provides the monetary impact of actual purchases incurred to date verses what was forecasted for clearance to customers.<br><br>The costs associated with UDC are captured in a deferral account ("UDCDA"). Like other deferral accounts, the UDCDA is brought forward for disposition as part of the annual deferral account disposition proceeding. | No material differences. Both utilities file information with the Board supporting execution of the gas supply plan various processes defined by the Board. | FRPO - As outlined above, the utilities would report on changes to medium and long term changes to plans as part of the annual rate case evidentiary filing. These changes would be supported by evidence on the drivers associated with the applied for change. For shorter term changes that happen intra-year as a result of short-term effects, the reporting would occur as part of the annual deferral account disposition proceeding. |