

January 18, 2017

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

RE: EB-2016-0296 – Union Gas Limited – 2017 Cap-and-Trade Compliance Plan – Updated Redactions

On November 15, 2016, Union Gas Limited (“Union”) filed its application and pre-filed evidence for its 2017 Cap-and-Trade Compliance Plan (“Compliance Plan”) with the Ontario Energy Board (the “Board”).

Union’s filing was in compliance with the Board’s EB-2015-0363 Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap-and-Trade Activities (the “Framework”). As defined by the Board, the Framework was developed to “*facilitate the recovery of costs incurred by rate-regulated natural gas utilities (Enbridge Gas Distribution Inc., Natural Resource Gas Limited, and Union Gas Limited) in meeting the legislated requirements of Ontario’s Cap and Trade program which comes into effect as of January 1, 2017.*”

In accordance with the Framework, Union requested that various portions of its Compliance Plan be classified as “confidential”¹. As noted in Section 4: *Confidentiality of Cap and Trade Information*, the Framework states,

*“The OEB recognizes that the Ontario Cap and Trade market is still nascent, and that the protocols and procedures surrounding confidential information must evolve as the market matures. The OEB believes that, in the early stages of the market’s development, the appropriate approach must not only **comply with the Climate Change Act** (emphasis added) and associated regulations, it should also be cautious and have **regard to market integrity** (emphasis added) in order to protect customers from undue costs while still making appropriate information publicly available where possible.”*

In a letter dated January 11, 2017, the Board requested Union review its application and more specifically the evidence references cited on p.3 of the letter to re-consider if they can be placed on the public record or, if they need to remain as strictly confidential. Upon further review at the request of the Board, Union agrees that certain information identified by the Board can be placed on public record. Union’s updated redacted Compliance Plan is enclosed. The updated redactions are limited to Exhibit

¹ See Exhibit 1, pp.10-11 of Compliance Plan for listing of sections of evidence redacted.

3 and Exhibit 1 has been updated to reflect the revised redactions. However, there are a number of exhibits that Union maintains need to be treated as strictly confidential as detailed below.

In the Framework, the Board discussed different aspects of confidentiality as strictly confidential and confidential information. **Strictly** confidential relates to:

- **“Auction Confidential²”** information related to participation at auctions for emissions allowances that is prohibited from disclosure by the Climate Change Act.
- **“Market Sensitive”** information relating to transactions of emissions units on secondary or tertiary markets or offset credits and information relating to compliance instruments used by a Utility to meet its GHG obligations.

The Board also notes that there may be certain types of strategically or commercially sensitive information for which a utility may wish to claim confidentiality. These requests for confidentiality are to be examined on a case-by-case basis and the Board will make a determination whether access to such information may be allowed to third parties.

The Board’s Framework specifies that “information relating to compliance plan instruments used by a utility to meet its GHG obligations”³ is Market Sensitive, and therefore strictly confidential. The references and respective rationale below support Union’s strategic Compliance Plan decisions with regard to the inclusion or exclusion of compliance instruments. Union strongly believes that the disclosure of the rationale, especially in the context of information that has been redacted, would result in the disclosure of Market Sensitive elements of the Compliance Plan itself. Therefore, the following Exhibit 3 references should remain strictly confidential:

- page 20, sentence beginning on line 16 and ending at line 19
- page 21, sentence beginning on line 20 and ending at line 22
- page 22, sentence beginning on line 12 and ending at line 18

Furthermore, the Framework acknowledges⁴ that trading and ‘tipping’ of generally non-disclosed information is contrary to the Climate Change Act and this information is considered market sensitive. The Climate Change Act prohibits disclosure of information that could have an impact on the price of an allowance⁵:

“No person shall purchase, sell, trade or otherwise deal with emission allowances or credits if the person has knowledge of information that has not been generally disclosed and that could reasonably be expected to have a significant effect on the price or value of an allowance or credit.”

“No person shall, other than in the necessary course of business, inform another person of information that has not generally been disclosed and that could reasonably be expected to have a significant effect on the price or value of an emission allowance or credit.”

Union believes that certain market opportunities would be obvious if the requested information was made public, especially if considered in the context of other redactions being made. If the references below

² Section 32 (7) of the Climate Change Act prohibits Union from disclosing information related to participation at auctions: “No person shall disclose whether or not the person is taking part in an auction or any other information relating to the person’s participation in an auction, including the person’s identity, bidding strategy, the amount of the person’s bids and the quantity of emission allowances concerned, and the financial information provided to the Director in connection with the auction.”

³ Framework, p. 10

⁴ Framework, p. 13

⁵ Climate Change Act, section 29 (5) and (6)

were made public, it would compromise Union's ability to pursue market opportunities outlined in its Compliance Plan. For these references, Union has also considered the classification as confidential on a strategically or commercially sensitive basis. However, since other market participants are expected to be co-applicants at an upcoming combined proceeding, it would not be appropriate to make these references available to any other party other than Board Members or Board staff. Therefore, the following Exhibit 3 references should remain strictly confidential:

- page 17, sentence beginning at line 10 and ending at line 12
- page 19, sentence beginning at line 1 and ending at line 3
- page 19, first sentence beginning at line 5 and second sentence ending at line 7
- page 19, first sentence beginning at line 9, second and third sentence ending at line 13
- page 20, lines 3–8
- page 23, lines 5–10

While Union maintains that the strict confidentiality of Auction Confidential and Market Sensitive content is critical, Union recognizes the need for parties to understand the impacts of Cap-and-Trade. In this light, Union carefully evaluated the Board's suggestion to disclose certain evidence references previously deemed strictly confidential on the public record. Union believes the updated redactions in Exhibit 3 of its Compliance Plan provide an effective balance between transparency and the importance to maintain market integrity and comply with legislation.

If you have any questions with respect to this submission please contact me at (519) 436-5334.

Yours truly,

[original signed by]

Vanessa Innis
Manager, Regulatory Applications

cc: EB-2016-0296 Participants
C. Smith (Torys)

November 15, 2016

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

RE: EB-2016-0296 – Union Gas Limited – 2017 Cap-and-Trade Compliance Plan

On September 26, 2016, the Ontario Energy Board (the “Board”) issued its Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap-and-Trade Activities (the “Framework”) in EB-2015-0363. As defined by the Board, the Framework was developed to *“facilitate the recovery of costs incurred by rate-regulated natural gas utilities (Enbridge Gas Distribution Inc., Natural Resource Gas Limited, and Union Gas Limited) in meeting the legislated requirements of Ontario’s Cap and Trade program which comes into effect as of January 1, 2017.”*

In the Framework, the Board states its expectation to establish interim rates for each of the utilities by January 1, 2017 when Cap-and-Trade comes into effect. To meet this timeline, utilities were expected to file their respective Cap-and-Trade Compliance Plan by November 15, 2016.

Enclosed is Union’s Application and pre-filed evidence for its 2017 Compliance Plan. The Compliance Plan has been filed through the Ontario Energy Board’s RESS and will be available on Union’s website at: www.uniongas.com. Union has focused on creating a Compliance Plan that is simple, minimizes risk and achieves compliance while at the same time is aimed at achieving a reasonable cost. This approach recognizes the balance between cost effectiveness and risk as well as compliance and flexibility, and is consistent with the guiding principles the Board has identified to assess the reasonableness of the Compliance Plan costs for recovery in rates.

Further, to meet the Board’s commitment to transparency as well as maintain market integrity and comply with legislation, Union has redacted any portion of this filing that could reveal its purchase strategy or bidding plans. An un-redacted form of this filing will be filed in confidence with the Board.

In terms of timing, Union respectfully requests the Board issue a Decision approving interim rates by November 18, 2016. Union will file its proposal for final rates following the issuance of the Board’s decision for this Application.

If you have any questions with respect to this submission please contact me at (519) 436-5334.

Yours truly,

[original signed by]

Vanessa Innis
Manager, Regulatory Applications

cc: EB-2015-0363 Participants
C. Smith (Torys)

ONTARIO ENERGY BOARD

IN THE MATTER OF the Ontario Energy Board Act, 1998, S.O. 1998, c.15 (Sched. B);

AND IN THE MATTER OF an Application by Union Gas Limited, pursuant to section 36(1) of the *Ontario Energy Board Act, 1998*, for an order or orders approving rates resulting from the 2017 Cap-and-Trade Compliance Plan.

APPLICATION

1. Union Gas Limited (“Union”) is a business corporation incorporated under the laws of the province of Ontario, with its head office in the Municipality of Chatham-Kent.
2. Union conducts both an integrated natural gas utility business that combines the operations of distributing, transmitting and storing natural gas, and a non-utility storage business.
3. On September 26, 2016, the Ontario Energy Board (the “OEB” or the “Board”) issued the Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities (“Framework”). The Board noted that the natural gas utilities are expected to file applications with their initial Compliance Plans by November 15, 2016 in order for the Board to set interim rates effective by January 1, 2017 to allow for the recovery of Cap and Trade compliance costs. Once the Board completes its assessment of the Compliance Plans final rates can be set.
4. Accordingly, Union hereby applies to the Board, pursuant to section 36 of the Act and pursuant to the Framework, for an order or orders approving or fixing just and reasonable interim rates and other charges for the sale, distribution, transmission and storage of gas effective January 1, 2017. To meet this effective date, Union respectfully requests the Board approve Union’s interim rates proposal as filed no later than November 18, 2016.

Final rates will be filed with the Board following the issuance of the Board's decision for this application.

5. Union further applies to the Board for the following:
 - a. Approval of the Greenhouse Gas Emissions Compliance Obligation – Customer-Related deferral account;
 - b. Approval of the Greenhouse Gas Emissions Compliance Obligation – Facility-Related deferral account; and,
 - c. Approval of the updated wording in the Greenhouse Gas Emissions Impact Deferral Account.
6. Union further applies to the Board for all necessary orders and directions concerning pre-hearing and hearing procedures for the determination of this application.
7. This application is supported by written evidence that has been filed with this application and may be amended from time to time as circumstances may require.
8. The persons affected by this application are the customers resident or located in the municipalities, police villages and First Nations Reserves and Métis organizations served by Union, together with those to whom Union sells gas, or on whose behalf Union distributes, transmits or stores gas. It is impractical to set out in this application the names and addresses of such persons because they are too numerous.

9. The address of service for Union is:

Union Gas Limited

P.O. Box 2001
50 Keil Drive North
Chatham, Ontario
N7M 5M1

Attention: Vanessa Innis
Manager, Regulatory Applications
Telephone: (519) 436-5334
Fax: (519) 436-4641

- and -

Torys
Suite 3000, Maritime Life Tower
P.O. Box 270
Toronto Dominion Centre
Toronto, Ontario
M5K 1N2

Attention: Crawford Smith
Telephone: (416) 865-8209
Fax: (416) 865-7380

DATED: November 15, 2016

UNION GAS LIMITED

[Original signed by]

Vanessa Innis
Manager, Regulatory Applications

2017 CAP-AND-TRADE COMPLIANCE PLAN

<u>Exhibit</u>	<u>Contents</u>
1	Administrative Documents
2	Forecasts
3	Compliance Plan
4	Monitoring and Reporting
5	Customer Outreach
6	Deferral and Variance Accounts
7	Cost Recovery

<u>Exhibit</u>	<u>Schedule</u>	<u>Description</u>
1	1	Table of Contents
2	1	Volume and Emission Forecast
2	2	Calculation of Annual Carbon Price Forecast
3	1	Forecasted Compliance Cost
3	2	Forecasted Cap-and-Trade Administrative Costs
4	1	Sample Monitoring Form -Actual vs Forecasted Compliance Costs
4	2	Sample Monitoring Form - Auction Transaction Summary
7	1	Parkway Delivery Commitment Incentive Costs
7	2	Deviation 2017 Cap-and-Trade Forecast Compliance Costs
7	3	In-franchise Detail Model (Union North and South)
7	4	Detail Model – Compliance Filing (Ex-franchise)
7	5	Calculation of Supplemental Service Charges
7	6	Continuity of Fuel Ratios, Fuel and Commodity Rates
7	7	General Service Bill Impacts
7	8	Bill Impact Analysis

Appendices

<u>Exhibit</u>	<u>Appendix</u>	<u>Description</u>
3	A	Union Gas Compliance Plan Guiding Principles
3	B	Cap-and-Trade Compliance Instrument Procurement Procedures
3	C	ClearBlue Markets Team Resumes
3	D	ClearBlue Compliance Instrument Purchasing Strategy
5	A	Communication Activities
5	B	Residential Bill Inserts
5	C	Small Business Bill Inserts
6	A	Draft Accounting Orders
7	A	Proposed Changes to Rates
7	B	Black-lined Rate Schedules
7	C	Summary of Interruptible Rate Changes

1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **ADMINISTRATIVE DOCUMENTS**

3 Executive Summary

4 In accordance with the Board’s Regulatory Framework for the Assessment of Costs of Natural
5 Gas Utilities’ Cap-and-Trade Activities (“Framework”) dated September 26, 2016, Union is
6 filing its 2017 Compliance Plan (“Compliance Plan”).

7 As the province strives to meet its greenhouse gas (“GHG”) emission reduction targets, Union
8 believes that natural gas can play, and indeed Ontarians need it to play, an even greater role in
9 partnership with the government to achieve emission reductions while balancing energy
10 affordability for consumers and the overall economy. In this vein, Union is working towards
11 compliance with program regulations and is taking all actions required to meet its obligations. As
12 a regulated natural gas distributor to over 1.4 million customers across more than 400
13 communities, Union is fully committed to implementing the cap-and-trade program successfully.

14
15 There are significant contextual factors Union has considered in the development of the
16 Compliance Plan. First, natural gas utilities will be competing for allowances in a market that
17 includes other participants who are not regulated and are not subject to regulatory determination
18 of plan prudence. In addition, Union has a much larger compliance obligation than most other
19 participants, and is projected to be the second largest acquirer of allowances in Ontario. The
20 impact of these factors is compounded by the fact that the market for allowances is expected to

1 be small and illiquid initially, since the market is in its infancy and will have a relatively small
2 number of active participants. In addition, there remain uncertainties with respect to the
3 program, such as regulations which have not yet been defined (such as offsets and early
4 reduction credits), and the linkage to the Western Climate Initiative (“WCI”) carbon market
5 which is not finalized. Each of these unknowns could have significant impacts on the market as
6 it develops.

7
8 Union has focused on creating a Compliance Plan that is simple, minimizes risk and achieves
9 compliance while at the same time is aimed at achieving a reasonable cost. Union has also
10 developed a plan which is flexible to evolve as 2017 unfolds and the market develops. This
11 approach recognizes the balance between cost effectiveness and risk as well as compliance and
12 flexibility, and is consistent with the guiding principles the Board has identified to assess the
13 reasonableness of the Compliance Plan costs for recovery in rates.¹

14
█ [REDACTED]
█ [REDACTED]
█ [REDACTED]
█ [REDACTED]
█ [REDACTED]
20 [REDACTED]

¹ The guiding principles included in the Framework include cost-effectiveness, rate predictability, cost recovery, transparency, flexibility and continuous improvement. (section 3.1, pp. 7-8)

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

4 [REDACTED]

5

6 As part of utilities' Compliance Plans, the Framework includes customer and facilities
7 abatement. The intent is for utilities to consider these programs as possible alternatives to the
8 procurement of allowances and offsets in meeting their compliance obligations. Since the
9 1990's, Union has had significant success in implementing Demand Side Management ("DSM")
10 programs to assist customers in reducing their natural gas consumption and related greenhouse
11 gas ("GHG") emissions. For 2017, there is an additional customer abatement program, the
12 Government of Ontario's Green Investment Fund ("GIF")², included in Union's Compliance
13 Plan that is incremental to the DSM plan. Going forward, Union will leverage its experience and
14 skillset in reducing emissions as part of DSM, and evaluate the potential to reduce customer
15 emissions further, thereby reducing Union's compliance obligation. Union will include the
16 outcome of this analysis in future compliance plans.

17

18 For 2017, Union plans to identify and assess a range of possible projects, management strategies
19 and technology options for the reduction of GHG emissions from its natural gas transmission,

² The Green Investment Fund is a new government program announced in February, 2016. This program offers consumer energy efficiency programs additional to current DSM programs. Union and Enbridge administer the program on behalf of the government.

1 storage and distribution operations. Union will provide its analysis of these initiatives in its 2018
2 Compliance Plan filing.

3

4 Union has not brought forward any long-term investments as part of the 2017 Compliance Plan.

5 This is due to the infancy of the program and the uncertainties that remain, particularly the

6 mechanism to assure cost recovery of such investments before their inclusion in compliance

7 plans. However, outside of its Compliance Plan, Union has brought forward two proposals to

8 government, both of which were cited in the Climate Change Action Plan (“CCAP”): i)

9 renewable natural gas (“RNG”) and ii) compressed natural gas (“CNG”) for heavy duty vehicles.

10 These initiatives can contribute significantly to the government’s objective of reducing emissions

11 in the province of Ontario, but are not in scope for Union’s 2017 Compliance Plan.

12

13 Union’s Compliance Plan is underpinned by a robust governance structure and resourcing plan.

14 The governance structure, purchasing guidelines and internal controls leverage best practices

15 Union has employed for the procurement of gas supply, and have been adapted to reflect unique

16 requirements of cap-and-trade.

17

18 As acknowledged in the Framework, it is critical to maintain the integrity of market sensitive

19 information within this Compliance Plan, particularly given the size of Union’s compliance

20 obligation. Disclosure of Union’s Compliance Plan, purchase strategy or bidding plans would

21 compromise Union’s ability to cost-effectively execute these plans in the best interests of

1 ratepayers. For this reason, Union has applied the confidentiality guidelines outlined in the
2 Framework and has redacted any portion of the filing which could reveal Union’s purchase
3 strategy and compromise its ability to participate in the market as planned. Union’s approach is
4 further detailed in the section below entitled “Confidentiality”.

5

6 While confidentiality of the details of Union’s Compliance Plan is critical, Union recognizes the
7 need for customers to understand the impact of cap-and-trade on them. Customer education and
8 transparency assists in managing customer questions about the program, and is also necessary to
9 support behavioral change. As such, Union has implemented a comprehensive plan for customer
10 outreach that is aimed at educating all customer groups about the cap-and-trade program, how it
11 impacts them, and what they can do to manage their natural gas consumption and GHG
12 emissions. In developing its customer outreach plan, Union drew on its extensive experience in
13 communicating with customers, as well as the results of customer discussions and surveys
14 regarding customers’ understanding of cap-and-trade and the impact on their natural gas
15 invoices. The outreach plan will be continually updated to reflect ongoing customer insights and
16 feedback as the program is implemented.

17

18 Union is requesting two new deferral accounts as part of this submission to independently track
19 customer-related and facility-related obligation costs.

20

1 Union has included 2017 cap-and-trade rate impacts as part of this submission. Union requests
2 that these rates be approved on an interim basis by November 18, 2016 in order to facilitate their
3 implementation by January 1, 2017. Union intends to seek approval of final rates following the
4 issuance of the Board’s decision for the Application.
5

6 Deviation from the Framework

7 Union’s 2017 Compliance Plan includes one deviation from the Framework. Union has
8 calculated the cap-and-trade rates using the estimated 2017 Ontario minimum auction reserve
9 price. This is a deviation from the Framework which requires using the average 21-day strip of
10 Intercontinental Exchange (“ICE”) daily settlement prices for California Carbon Allowance
11 (“CCA”) futures contracts. As outlined in Exhibit 2, Schedule 2, the 2017 Ontario minimum
12 auction reserve price (\$17.70 Canadian dollars/tonne) is estimated to be higher than the 21 day
13 strip for CCA futures (\$17.24 Canadian dollars/tonne). Union believes this departure from the
14 Filing Guidelines for Natural Gas Utility Cap-and Trade Compliance Plans (“filing guidelines”)
15 provided in Appendix A of the Framework is only required while the Ontario and
16 California/Quebec carbon markets are not linked. By making this change Union avoids a
17 potentially large deferral balance (estimated at approximately \$7 million for 2017), and is
18 consistent with the Board’s stated objective to match the “Utilities’ forecast costs with the
19 charges to customers³”.

20

³ Framework, p. 31

1 Transitional Issues

2 Union's 2017 Compliance Plan also includes two transitional issues. First, there are components
3 of the Framework that do not apply to 2017, since it is the first year of the program. In those
4 cases, Union's Compliance Plan does not include all components outlined in the filing
5 guidelines. For example, there are no actuals to report for monitoring and reporting in Exhibit 4
6 since Union has not yet executed its Compliance Plan. However, Union proposes to work with
7 the other utilities through the Board's working group to develop a standardized set of monitoring
8 and reporting templates that would be included in the 2018 Compliance Plan. Based on an
9 analysis of monitoring forms that are included in other jurisdictions, Union has developed two
10 samples⁴ which could be used as a starting point for developing standardized reporting forms.

11

12 Union is also not including any request for disposition of deferral account balances in this
13 Compliance Plan. Union expects that it will request disposition of the balance in its Greenhouse
14 Gas Emissions Impact Deferral Account in its 2016 non-commodity deferral disposition
15 proceeding.

16

17 Second, Union's submission in Exhibit 3 regarding abatement and long term investments is
18 minimal for 2017. Union will provide more analysis on these items in future filings once Union
19 has gained experience with the cap-and-trade program, once the Board publishes its long-term
20 forecast and marginal abatement cost curves, and Ontario compliance options such as offsets and
21 the secondary market are developed. In addition, Union will seek approval of cost recovery on

⁴ Exhibit 4, Schedule 1 ; Exhibit 4, Schedule 2

1 long term investments before they are incorporated in future compliance plans and would expect
 2 such cost recovery to be addressed in separate facilities or rates applications.

3

4 Administration

1. Table of Contents	Please see Exhibit 1, Schedule 1
2. Parties Affected by the Application	The parties affected by this application are the customers resident or located in the municipalities, police villages and First Nations Reserves and Métis organizations served by Union, together with those to whom Union sells gas, or on whose behalf Union distributes, transmits or stores gas. It is impractical to set out the names and addresses of such parties because they are too numerous.
3. Internet Address for Viewing the Application	https://www.uniongas.com/about-us/regulatory/rate-cases , EB-2016-0296
4. Primary Contact Information	<p>Vanessa Innis Union Gas Limited Manager, Regulatory Applications</p> <p>50 Keil Drive North P.O. Box 2001 Chatham, Ontario N7M 5M1</p> <p>Telephone: (519) 436-5334 Fax: (519) 436-4641 Email: vinnis@uniongas.com</p>
5. Bill Impacts	<p>Including the impacts of the customer-related obligation costs of the cap-and-trade program, the bill impact for a typical residential customer consuming 2,200 m³ annually in Union South and Union North is an increase of \$74 per year.</p> <p>Excluding the impacts of the customer-related obligation costs of the cap-and-trade program, the bill</p>

	impact of the cap-and-trade program for a residential customer consuming 2,200 m ³ annually in Union South and Union North is an increase of \$1 per year.
6. Specific Approvals Requested	<ul style="list-style-type: none">• Approval of interim rates effective January 1, 2017 by November 18, 2016• Approval of final rates• Approval of two new deferral accounts and amendments to existing deferral account, as described in Exhibit 6
7. Deviations from Filing Guidelines	Please see Exhibit 1, p. 6

1

2 Confidentiality

3 As noted above, Union believes that confidentiality is critical, given that the carbon market is a
4 competitive market and Union is a participant with significant size in that market. Union has
5 taken steps internally to manage access to Compliance Plan development and execution
6 strategies and plans, and has also redacted the following sections of evidence to protect the
7 confidentiality of its plans.

8

9

10

11

References			
Exhibit	Page Number	Description	Justification
1	2-3	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	1-2	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	3	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	4	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	9	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	11	Indication of Union's plan to participate in an auction or strategy for participation in an auction	Auction confidential
3	12	Indication of Union's plan to participate in an auction or strategy for participation in an auction	Auction confidential
3	12-14	Indication of Union's plan to participate in an auction or strategy for participation in an auction; Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive and Auction confidential
3	14-15	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	15	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	16	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	17-24	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments; Indication of Union's plan to participate in an auction or strategy for participation in an auction	Market sensitive and Auction Confidential
3	29	Information related to Union's planned compliance	Market sensitive

		instrument mix or strategy for the purchase of compliance instruments	
3	32-33	Indication of Union's plan to participate in an auction or strategy for participation in an auction	Auction confidential
3	33	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	34	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	35	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments; Indication of Union's plan to participate in an auction or strategy for participation in an auction	Market sensitive and Auction Confidential
3	36	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	37	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	39	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	40-41	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	43	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments; Indication of Union's plan to participate in an auction or strategy for participation in an auction	Market sensitive and Auction Confidential
3	44	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments; Indication of Union's plan to participate in an auction or strategy for participation in an auction	Market sensitive and Auction Confidential
3	Schedule 1, lines 1-4	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments	Market sensitive
3	Appendix D: 2 4-5 6 7 8-44	Information related to Union's planned compliance instrument mix or strategy for the purchase of compliance instruments; Indication of Union's plan to participate in an auction or strategy for participation in an auction	Market sensitive and Auction Confidential

1
2 Union submits that all of the confidential sections that have been redacted in the Compliance
3 Plan should remain confidential into perpetuity. None of this information has been previously
4 disclosed and there are no confidentiality determinations by other public agencies to report.
5
6 Union also notes that the Framework indicates the Board expects to provide non-confidential
7 summary reports for the public record.⁵ Union submits the summary record may reveal
8 confidential information to the extent that it is compiling data from few sources. Union expects
9 that in these cases, the overriding objective of market integrity would be upheld.

⁵ Framework, p. 10

1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **FORECASTS**

3 A) Forecasting Period

4 The Framework provides two options for the forecasting period to be covered in the compliance
5 plans for the first compliance period¹. Option 1 is to file a one-year forecast for 2017, a one-year
6 forecast for 2018, and then a two-year forecast for 2019-2020. Option 2 is to file a one-year
7 forecast for 2017, and then a three-year forecast for 2018-2020. Union elects to use Option 1 for
8 the first compliance period (annual compliance plans for each of 2017 and 2018, followed by a
9 two-year compliance plan for 2019-2020). This filing represents Union’s 2017 Compliance
10 Plan. Union plans to file its 2018 Compliance Plan by August 1, 2017, and its two-year
11 compliance plan for 2019/2020 by August 1, 2018.

12
13 B) 2017 Volume Forecast

14 Union’s total 2017 customer-related and facility-related volume forecast is 8,310,348,868 m³.
15 The details of this forecast are included in Exhibit 2, Schedule 1. Consistent with the Framework,
16 Union has excluded the volume forecast for customers that have been identified by the Ministry
17 of the Environment and Climate Change (“MOECC”) as mandatory or voluntary participants^{2,3}.

¹ Framework Appendix A: Filing Guidelines, pg. iv

² Union initiated an attestation process with customers to validate the list received from the MOECC and to provide sufficient detail (such as account and meter numbers) to support accurate compliance obligation tracking and billing.

³ Union is using the October 7, 2016 draft list of mandatory and voluntary participants provided by the MOECC for purposes of calculating its volume and emissions forecast. As of November 15, 2016 this is the most current list available. Further changes to the MOECC list of mandatory and voluntary participants will be covered on an actual basis.

1 Union has also excluded the volume forecast for wholesale customers⁴ since these customers are
2 not covered by Union's compliance obligation.

3

4 The volume forecast consists of five components, covering both customer emissions and Union's
5 facility emissions:

6

7 Customer Emissions:

8 I. General Service Market

9 II. Contract Market

10 Facility Emissions:

11 III. Unaccounted for Gas ("UFG")

12 IV. Compressor Fuel and Blowdowns

13 V. Buildings and Line Heaters

14

15 The forecast methodology employed for each of these components is consistent with that
16 approved by the Board in Union's 2013 Cost of Service Proceeding (EB-2011-0210), and is
17 described in more detail below. Union has included both utility and non-utility components of
18 forecasted volumes to ensure that non-utility costs are allocated to those volumes, and removed
19 from regulated rates.

20

⁴ Wholesale customer volumes of 344,825,589 m³ include customers within Rate T3, Rate M9 and Rate M10 rate classes that distribute natural gas.

1 **Customer Emissions**

2 I. General Service Market

3 Union's General Service volume forecast for 2017 is 5,570,485,824 m³, net of the impact of
4 DSM volumes, GIF volumes and volumes of large final emitters and voluntary participants as
5 shown at Exhibit 2, Schedule 1, line 7, column (a). The General Service market is comprised of
6 Rate M1, Rate M2, Rate 01 and Rate 10. The General Service demand forecasting methodology
7 is based on a multiple regression analysis. The methodology meets generally accepted practices
8 regarding demand forecasting. The historic database underlying the statistical analysis contains
9 monthly data from January 1991 to December 2015.

10

11 The demand forecast combines four separate estimation steps:

- 12 1) Estimate of the total number of billed customers for each rate and service class;
- 13 2) Forecast the normalized average consumption ("NAC") for the residential, commercial,
14 tobacco and industrial customer service classes;
- 15 3) Estimate the total throughput volumes for the industrial customers; and,
- 16 4) Remove the volumes for large final emitters, voluntary participants, future consumption
17 savings of DSM Programming and volume abatement (GIF) from the individual
18 econometric estimates obtained from steps 2 and 3.

19

20 The NAC forecast for residential customers incorporates assumptions related to several demand
21 variables: weather normal, energy efficiency, and total bill amounts. The exchange rate is
22 incorporated in the non-residential NAC forecast.

1 The DSM volume impact corresponds to the 2016-2020 DSM plan approved by the Board in
2 EB-2015-0029 and amounts to 93,832,137 m³.

3

4 II. Contract Market

5 The 2017 volume forecast for contract customers is 2,427,393,328 m³, net of the impact of DSM,
6 wholesale customer volumes, volumes of large final emitters and voluntary participants as shown
7 at Exhibit 2, Schedule 1, line 7, column (b). The forecast is developed using two methodologies.
8 First, an econometric forecast is developed for the majority of the customers and a detailed
9 bottom-up forecast is built for the large Rate T1, Rate T2 and Rate 100 customers.

10

11 Next, the multiple regression analysis is reviewed so that specific customer or market conditions
12 impacting consumption can be incorporated. Key demand drivers impacting the forecast include
13 factors such as number of customers, the exchange rate, seasonal load differences and
14 greenhouse acreage.

15

16 The DSM volume impact corresponds to Union's Board-approved 2016-2020 DSM plan (EB-
17 2015-0029) and amounts to 227,573,753 m³.

18

19 **Facility Emissions**

20 The total facility-related volume forecast for 2017 is 312,469,716 m³. This includes volumes for
21 unaccounted for gas ("UFG"), compressor fuel and blowdowns, and buildings and line heaters.

22

1 III. Unaccounted For Gas

2 The UFG volume forecast for 2017 is 89,851,375 m³. It is based on the forecasted total
3 throughput volumes for Union multiplied by the Board approved UFG Volume percentage of
4 0.219%. The forecast total throughput volumes combine the forecast demand for both the in-
5 franchise and ex-franchise markets.

6

7 IV. Compressor Fuel and Blowdowns

8 The total compressor fuel forecast for 2017 is 205,196,989 m³, and the total blowdowns forecast
9 for 2017 is 4,154,798 m³. This forecast includes transmission fuel, storage fuel, dehydration fuel,
10 and operational blowdowns.

11

12 The storage and transmission fuel forecast is derived by combining forecasts for in-franchise and
13 ex-franchise transmission and storage activity into an overall physical activity forecast. Union
14 has allocated utility and non-utility costs in Exhibit 2, Schedule 1. Non-utility costs are excluded
15 for rate-making purposes.

16

17 For dehydration fuel and operational blowdowns, average historical utilization is used to
18 estimate the monthly forecasted usage.

19

20

21

22

1 V. Buildings and Line Heaters

2 The buildings and line heaters forecast for 2017 is 13,266,555 m³. The buildings and line heaters
3 forecast is based on a three-year average for consumption by location. For new buildings with
4 no historical information, forecast or estimated volumes are used.

5

6 C) 2017 GHG Emissions Forecast

7 The 2017 GHG emissions forecast is 15.6 megatonnes (“Mt”) of carbon dioxide equivalent
8 (“CO₂e”), comprising of 15 Mt for customer-related emissions and 0.6 Mt of facility-related
9 emissions. These forecast components are summarized in Exhibit 2, Schedule 1 and described
10 below.

11

12 Customer-Related Emissions Forecast

13 The Customer-related emission forecast is 15 Mt CO₂e. It is calculated in accordance with
14 ON.400 of the Guideline for Quantification, Reporting and Verification of Greenhouse Gas
15 Emissions, dated May 16, 2016 (Guideline). Carbon Dioxide (“CO₂”) emissions were calculated
16 as per Calculation Methodology 2 of ON.403 (a), using the default CO₂ emission factor in Table
17 400-2. Methane (“CH₄”) and Nitrous Oxide (“N₂O”) emissions were calculated as specified in
18 ON.404 (a). The resulting conversion factor, calculated using the Global Warming Potentials as
19 set out in O.Reg. 143/16, is 0.001875 tonnes CO₂e/m³ natural gas. The total volume forecast of
20 7,997,879,152 m³ multiplied by the conversion factor of 0.001875 tonnes CO₂e/m³ equals
21 14,993,040 tonnes CO₂e, or 15 Mt.

22

1 Facility-Related Emission Forecast

2 The facility-related emission forecast is 0.6 Mt CO₂e. Facility-related emissions are calculated
3 using two separate methodologies, as facility-related sources fall under two separate GHG
4 Activities: i) General Stationary Combustion and ii) Natural Gas Distribution.

5
6 Facility-related emissions associated with UFG and blowdowns fall under the Natural Gas
7 Distribution activity and as such, are calculated as described in the customer-related emissions
8 forecast section above.

9
10 The remaining facility-related volumes, including buildings and line heaters and compressor fuel
11 were calculated in accordance with ON.20 of the Guideline, using the same methodology which
12 Union uses for reporting to Ontario's GHG Program. CO₂ emissions were calculated as per
13 Calculation Methodology 2 of ON.23, whereas CH₄ and N₂O emissions were calculated as per
14 Calculation Methodology 6, specified in ON.24 (c). A higher heating value of 0.03881 GJ/m³
15 was used. The resulting conversion factor, calculated using the Global Warming Potentials as set
16 out in O.Reg. 143/16, is 0.001959 tonnes CO₂e/m³ natural gas.

17
18 A summary of the facility-related volume forecast and the application of the two factors is
19 summarized in Table 1.

20

21

1
 2
 3
 Table 1
 Summary of Facility-Related Emissions Forecast

	m ³	Factor/m ³	CO ₂ e
General Stationary Combustion		0.001959	
Natural Gas Distribution Activity		0.001875	
UFG	89,851,375	0.001875	168,438
Blowdowns	4,154,798	0.001875	7,789
Compressor fuel volume	205,196,989	0.001959	401,973
Buildings and Line Heaters	13,266,555	0.001959	25,989
Total	312,469,716		604,189

4
 5
 6 D) Annual Carbon Price Forecast

7 The Framework identifies that the 2017 carbon price forecast should be calculated using the
 8 average 21-day strip of ICE daily settlement prices for a California Carbon Allowance
 9 (“CCA”)⁵. This methodology reflects the expectation that for the majority of the first
 10 compliance period of 2017-2020, Ontario expects to be operating in the WCI linked market with
 11 California and Québec.

12
 13 However, in 2017, Ontario will not be linked to the California market and Union will be
 14 acquiring allowances in the Ontario-only market. Therefore, Union proposes that, for at least
 15 2017, the carbon price forecast should be based on an Ontario price, not a California market
 16 price. Using the California market price (“CCA 21-day strip”) would reflect lower costs than
 17 what Union would expect, resulting in a potentially large deferral balance to be recovered from

⁵ Framework , Appendix A: Filing Guidelines, pg. v.

1 customers.

2

3 As of October 31, 2016 the CCA 21-day strip calculation results in a price of \$17.24/tonne
4 (Canadian dollars). Union estimates the 2017 Ontario minimum auction reserve price to be
5 \$17.70/tonne (Canadian dollars). The estimated 2017 auction reserve price is the minimum
6 auction price; the actual settled price could be higher. Please see Exhibit 2, Schedule 2 for the
7 calculation of the 21-day CCA strip and the estimated 2017 Ontario minimum auction reserve
8 price. In theory, if Union acquired all allowances at the estimated 2017 Ontario auction reserve
9 price, the difference in these prices would result in a deferral balance of approximately \$7
10 million in 2017, to be recovered from customers. If the actual 2017 Ontario allowance price is
11 above the minimum auction reserve price, this would increase the deferral balance further.

12 Union is unable to produce a market-based 21-day strip forecast for the Ontario market since this
13 market does not yet exist at this time, nor does the ICE currently list a traded futures product for
14 an Ontario-only market.

15

16 This deviation from the Framework is only required while the Ontario minimum auction revenue
17 price is higher than the 21-day CCA strip. The proposal to use an Ontario forecast price is
18 consistent with the Board's stated objective to match the Utilities' forecast costs with the charges
19 to customers⁶.

20

⁶ Framework, p. 31

- 1 For future compliance plans, the Board may wish to consider the merits of using a price
- 2 representative of what utilities could expect to incur for allowance purchases, which may not be
- 3 a secondary market price in such a new market. This can be explored further as part of the
- 4 Board's working group.

UNION GAS LIMITED
Volume and Emissions Forecast
for activity in the 12 month period ending December 31, 2017

Line	Description	(a)	(b)	(c) = (a) + (b)	(d)	(e) = (c) + (d)	Units
		General Service Market	Contract Market	2017 Annual Forecast - Utility (regulated)	2017 Annual Forecast - Non-Utility (unregulated)	2017 Annual Forecast Total	
Customer related forecast							
1	Gross Throughput	5,678,273,845	8,571,132,217	14,249,406,062	-	14,249,406,062	m ³
2	DSM volumes	93,832,137	227,573,753	321,405,890	-	321,405,890	m ³
3	GIF volumes	3,685,000	-	3,685,000	-	3,685,000	m ³
4	Net Throughput (line 1 - line 2 - line 3)	5,580,756,707	8,343,558,464	13,924,315,172	-	13,924,315,171	m ³
5	Throughput to Wholesale customers	-	344,825,589	344,825,589	-	344,825,589	m ³
6	Throughput to large final emitters and voluntary participants	10,270,883	5,571,339,548	5,581,610,431	-	5,581,610,431	m ³
7	Net throughput to non-capped participants (line 4 - line 5 - line 6)	5,570,485,824	2,427,393,328	7,997,879,152	-	7,997,879,152	m ³
Facility related forecast							
8	UFG volume			80,381,040	9,470,335	89,851,375	m ³
9	Blowdowns			3,864,884	289,914	4,154,798	m ³
10	Compressor fuel volume			192,711,194	12,485,795	205,196,989	m ³
11	Buildings and line heaters			12,925,354	341,201	13,266,555	m ³
12	Net facility related forecast volumes (line 8 + line 9 + line 10 + line 11)			289,882,471	22,587,245	312,469,716	m ³
13	Total customer related and facility related volumes (line 7 + line 12)			8,287,761,623	22,587,245	8,310,348,868	m ³
Compliance Obligation							
14	Emissions conversion factor						
15	ON.400					0.001875	tonnes CO ₂ e/m ³
16	ON.20					0.001959	tonnes CO ₂ e/m ³
17	Obligations						
18	ON.400 [(line 7 + line 8 + line 9) x line 15]			15,150,970	18,297	15,169,267	tonnes CO ₂ e/m ³
19	ON.20 [(line 10 + line 11) x line 16]			402,834	25,128	427,962	tonnes CO ₂ e/m ³
20	Gross compliance obligation (line 18 + line 19)			15,553,804	43,424	15,597,229	tonnes CO ₂ e/m ³
21	Customer related emissions (line 7 x line 15)			14,993,040	-	14,993,040	tonnes CO ₂ e/m ³
22	Facility related emissions [(line 8 + line 9) x line 15] + [(line 10 + 11) x line 16]			560,764	43,424	604,189	tonnes CO ₂ e/m ³
23	Total Forecasted emissions (line 21 + line 22)			15,553,804	43,424	15,597,229	tonnes CO ₂ e/m ³
24	Compliance Obligation Covered by Compliance Instruments			15,553,804	43,424	15,597,229	tonnes CO ₂ e/m ³
25	Compliance Obligation Covered by Customer Abatement			6,908	-	6,908	tonnes CO ₂ e/m ³
26	Total forecasted compliance (line 24 + line 25)			15,560,712	43,424	15,604,137	tonnes CO ₂ e/m ³

Union Gas Limited
 Calculation of Annual Carbon Price Forecast - CCA
for the 12 month period ended December 31, 2017

Line No.	Particulars	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Average
1	Vintage 2017 CCA 21 Day Average (US/tonne) ⁽¹⁾	12.908	12.938	12.958	12.985	13.008	13.035	13.055	13.078	13.105	13.125	13.155	13.175	13.044
2	Foreign Exchange	<u>1.324</u>	<u>1.323</u>	<u>1.323</u>	<u>1.323</u>	<u>1.322</u>	<u>1.322</u>	<u>1.322</u>	<u>1.321</u>	<u>1.321</u>	<u>1.321</u>	<u>1.321</u>	<u>1.320</u>	<u>1.322</u>
3	Vintage 2017 CCA 21 Day Average (CAD/tonne) ⁽²⁾	17.087	17.121	17.144	17.177	17.202	17.234	17.258	17.282	17.313	17.337	17.372	17.393	<u>17.243</u>

Notes:

(1) 21-Day Strip dates used: Oct 3 - Oct 31, 2016

(2) line 3 = line 1 x line 2

(3) Sources: CCA prices are ICE Settlement Data acquired through CaliforniaCarbon.info, Foreign Exchange rates are Bloomberg settlement data

UNION GAS LIMITED
Calculation of 2017 Estimated Ontario Minimum Auction Price

Line No.	Particulars	2017 Estimate of California Auction Floor Price (\$ USD)	2017 Estimate of Quebec Auction Floor Price (\$ CAD)	2017 Estimate of Ontario Minimum Auction Price (\$ CAD)
1	2016 Annual Auction Reserve Price (1)	12.73	12.82	
	<u>2017 Estimate of Auction Reserve Price</u>			
2	Annual Fixed Increase	5.0%	5.0%	
3	2017 Variable Increase Estimate (2)	2.3%	2.1%	
4	Total 2017 Increase (line 2 + line 3)	7.3%	7.1%	
5	2017 Increase (line 1 x line 4)	0.93	0.91	
6	2017 Estimate of Auction Reserve Price (line 1 + line 5)	13.66	13.73	
7	Foreign Exchange (3)	1.296	1.000	
8	2017 Estimate of Auction Reserve Price (\$ CAD/tCO ₂ e) (line 6 x line 7)	17.70	13.73	
9	Ontario Minimum Auction Price (\$/tCO ₂ e) (4)			17.70

Notes:

- (1) California Cap-And-Trade Program and Quebec Cap-And-Trade System 2016 Annual Auction Reserve Price Notice per 2016 Vintage as issued on December 1, 2015.
- (2) 2017 Variable Increase represents the forecasted rate of inflation for the California Auction Floor Price and the forecasted annual change in Consumer Price Index for the Quebec Auction Floor Price.
- (3) Average forward exchange rate for 2017 as of August 31, 2016.
- (4) Reg 144/16 Section 71 (1) The minimum price of an emission allowance in an auction is the higher of the annual auction reserve prices most recently established, as of the day of the auction, for each of Quebec and California.

1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **COMPLIANCE PLAN**

3
4 The purpose of this evidence is to review Union’s 2017 Compliance Plan. Specifically, it will
5 review the following elements:

- 6 I. Overview of Compliance Plan
- 7 II. Compliance Option Analysis and Optimization of Decision Making
- 8 III. Performance Metrics and Cost Information
- 9 IV. Risk Management
- 10 V. Longer Term Investments
- 11 VI. New Business Activities

12
13 **D) OVERVIEW OF COMPLIANCE PLAN**

14 Union’s 2017 Compliance Plan is focused on compliance and overall prudence. The 2017
15 Ontario market is in its infancy, and could be volatile and unpredictable. Currently, significant
16 uncertainty exists that could impact the market. For example, Ontario’s link to the WCI market
17 in 2018 is still pending, certain regulations are yet to be defined (such as offsets and early
18 reduction credits), and a robust, liquid secondary market does not yet exist.

19
20 This Compliance Plan outlines the capabilities and processes Union is developing to minimize
21 risk and achieve an overall reasonable cost, [REDACTED]

[REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

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22

Given that this is the first year for the cap-and-trade program in Ontario, the speed with which it is being implemented, and the uncertainties noted above, Union has not included abatement or long term investments in its 2017 Compliance Plan beyond existing initiatives such as DSM.

Going forward, Union expects to review potential projects and options that could further lower GHG emissions from its own facilities and explore opportunities for customer abatement. This could result in the inclusion of longer-term investments in future compliance plans to the extent that they are within regulation, have received Board approval for cost recovery, and are applicable to Union’s compliance obligation. Discussion of these elements will be included in future compliance plans as Union gains experience in this market, receives and applies the remaining regulations and regulation amendments, and examines long-term forecasts and the relative value of abatement opportunities.

1 Governance:

2 This section provides an overview of the governance Union has implemented for its 2017
3 Compliance Plan. It includes a summary of how Union developed its Compliance Plan,
4 including its Compliance Instrument Procurement Procedures (“CIPP”), and how Union will
5 govern the execution of the 2017 Compliance Plan. The CIPP is included at Exhibit 3, Appendix
6 B.

7
8 *Compliance Plan Development*

9 Late in 2015, Union established a cap-and-trade team responsible for the integrated
10 implementation of cap-and-trade across Union. In addition, a Cap-and-Trade Steering
11 Committee was established to govern the successful implementation of the program, including
12 the development of the Compliance Plan. The Steering Committee consists of executive and
13 senior management who have functional accountability for key elements of the plan’s
14 implementation.

15
16 [REDACTED]

17 [REDACTED]

18 [REDACTED] The CIPP was developed jointly between Union’s Cap-and-Trade and
19 Gas Supply department functional areas to outline the governance of the procurement of
20 compliance instruments. The Steering Committee provided approval of the Compliance Plan
21 (including the CIPP) filed in this Application.

22

1 In developing the Compliance Plan and the CIPP [REDACTED]

2 [REDACTED] Union relied heavily on the long-standing
3 principles it has applied in the procurement of gas supply assets (which have a value of up to \$1
4 billion per year), as well as the overall Framework objectives defined by the Board. Union has
5 developed principles for its Compliance Plan, which will guide the development and execution
6 of a prudent Compliance Plan to achieve reasonable costs for customers. Union's principles are:

- 7 1. Compliance - ensure compliance with legislative and regulatory obligations for natural
8 gas utilities
- 9 2. Diversification - minimize risk through diversification within the compliance portfolio
- 10 3. Flexibility - adapt to evolving market conditions and fluctuations in the compliance
11 obligation

12
13 Exhibit 3, Appendix A¹ illustrates how these guiding principles relate to the long-standing Gas
14 Supply planning principles described above.

15 16 *Compliance Plan Execution*

17 The accountability for the CIPP and its execution will reside in Union's Gas Supply department.
18 This allows Union to leverage and align with the procurement knowledge and best practices that
19 have been developed for gas supply. In addition, Union's system of governance and procurement

¹ Appendix A was originally filed with Union's June 22, 2016 EB-2015-0363 submission related to the OEB Staff Discussion Paper on a Cap-and-Trade Regulatory Framework for Natural Gas Utilities. Appendix A has been updated to reflect the most recently filed Gas Supply Memorandum (see EB-2016-0245, Exhibit A, Tab 3).

1 procedures for gas supply align very well with the requirements for cap-and-trade. Similarities
2 include, but are not limited to:

- 3 • A need for a plan that ensures appropriate volumes are procured to meet customer needs;
- 4 • The presence of a transparent market;
- 5 • The use of similar routes to market for the procurement of goods, such as the ICE;
- 6 • The presence of credit and counterparty risk in the transactions;
- 7 • The requirement to manage various risks such as market (price) fluctuations as well as
8 fluctuations in the purchase requirement due to swings in demand;
- 9 • The requirement to understand and apply legal considerations to procurement contracts
10 and agreements;
- 11 • The management of risks related to foreign currency exchange rates and their related
12 impact on market prices; and,
- 13 • The requirement to plan cash and working capital requirements to facilitate the large
14 payments involved with the procurement activity.

15

16 The CIPP are provided at Exhibit 3, Appendix B. These procedures leverage existing practises
17 for gas supply, while also incorporating new requirements for cap-and-trade. This document
18 outlines the governance and controls that will exist within Union's compliance instrument
19 procurement function, including key features such as:

- 20 - Review and approval of procurement plans by executive and senior management, which
21 will include execution parameters and limits

- 1 - Separation of duties between “front office” staff who develop and execute the plan, and
- 2 “back office” staff who administer and report transactions
- 3 - Credit guidelines
- 4 - Periodic review of contracts
- 5 - Periodic internal audits
- 6 - Procedures to address exceptions to the CIPP

7

8 The CIPP was also reviewed and endorsed by Union’s consultant, ClearBlue Markets
9 (“ClearBlue”).

10

11 In addition to the controls specific to the CIPP, Union has other organizational and corporate
12 governance structures in place such as Audit Services, Credit & Risk Management, and a Risk
13 Management Committee (“RMC”). Collectively, these functions ensure the organization’s
14 network for risk management; control and governance processes are adequate and functioning
15 properly. Credit & Risk Management and the RMC will assess commodity, market, and credit
16 risks, and provide risk governance as needed in relation to the procurement of compliance
17 instruments.

18

19 Using the established governance structure allows Union to effectively balance administration
20 with appropriate controls. The governance structure and procedures will evolve as continuous
21 improvements are made to reflect Union’s experience with the cap-and-trade program, updated
22 and new regulations, WCI linking, and market development. In keeping with this theme of

1 continuous improvement, Union also looks forward to actively participating in the working
2 group the Board referred to in the Framework².

3
4 Cap-and-Trade Market Participation Capabilities:

5 The following paragraphs outline the specific resources and capabilities required for Union to
6 participate in the Ontario cap-and-trade market. Additional resources are required to ensure the
7 successful development and execution of the cap-and-trade program as a whole, and are outlined
8 in Section III below.

9
10 Purchasing Staff

11 Union has established a compliance instrument procurement function within the Gas Supply
12 department. Personnel who will be tasked with the purchase of compliance instruments have
13 experience with the procurement of gas commodities that will be transferrable when applied to
14 the carbon market. Specifically, the compliance instrument procurement function will leverage
15 existing skills such as market research, understanding of pricing dynamics, supplier and
16 counterparty relationship management, position management (quantity of instruments purchased
17 vs quantity forecast), management of price and volume variances, purchase plan execution and
18 the governance of the overall program. In addition to the existing skills, staff involved with the
19 purchasing function have, and will continue to, receive training specific to cap-and-trade and
20 carbon markets through attendance at industry events and conferences, discussions with

² Framework, p.36

1 counterparties, training courses, and training materials provided by external consultants.

2

3 Information Technology (“IT”) and Data Requirements

4 There are several IT-related resources and requirements which Union has developed and will be
5 implementing by January 1, 2017:

6 i) Registration in the Compliance Instrument Tracking System Service (“CITSS”):

7 CITSS is the system that the Ontario government will use to enable program
8 participants to engage in government auctions, and also to collect, transact, and report
9 accumulated compliance instruments to demonstrate compliance at the end of the
10 compliance period. At the time of this filing, Union has successfully registered its
11 individual account representatives in CITSS and has submitted its participant
12 (company) registration. Union is awaiting approval from the MOECC of its
13 participant registration application, which was submitted mid-September, 2016.

14 Several Union personnel have completed CITSS training, and will also complete the
15 upcoming auction training and participate in the practice auction to be facilitated by
16 the MOECC.

17 ii) Data Subscriptions and Carbon Market Intelligence: Union has procured a
18 subscription with a carbon market data provider to enable access to key market data
19 and news which will aid procurement staff in their participation in auctions and the
20 secondary market and will help procurement staff understand broader carbon markets.
21 Union will continue to assess its information and data requirements related to market

1 intelligence to ensure it is receiving the required information to aid in Compliance
2 Plan execution.

3 iii) Trading Platform (ICE): Union currently has access to the ICE for gas supply
4 procurement. To support cap-and-trade, Union has procured access to carbon market
5 exchange data on ICE. Union will use this subscription to monitor the carbon market
6 on a real-time basis and assess the status of Ontario-specific secondary market
7 development on the exchange. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

12

13 Expert Consulting Services

14 As noted earlier in this submission, Union has hired an expert consulting company with
15 experience in cap-and-trade and carbon markets to provide advisory services in relation to
16 Union’s compliance instrument procurement strategy. ClearBlue has unique carbon market
17 expertise to advise organizations on how to manage the complexities that will be introduced with
18 the new carbon market in Ontario. ClearBlue’s expertise includes hands-on practical experience
19 and regulatory knowledge of all aspects of the carbon market, including the formation of
20 compliance strategies, integration with operational corporate functions, and advising on the
21 practicalities of executing trades within the market. See Exhibit 3, Appendix C for detailed

1 information about ClearBlue’s qualifications. ClearBlue was hired to conduct the following
2 advisory services:

- 3 • Assist with the development of Union’s compliance instrument procurement strategy;
- 4 • Assist in the development of a bidding strategy for government auctions;
- 5 • Provide advisory services related to best practices in governance for procurement
6 functions operating in carbon markets; and,
- 7 • Provide training to applicable staff on all aspects of operating within a carbon market,
8 including an overview of various compliance instruments and market tools, routes to
9 market, and risk management practices.

10

11 In addition to consulting on Union’s compliance instrument procurement strategy, Union also
12 engaged external consultants with respect to cap-and-trade market analytics, legal interpretation
13 of regulations, offsets, GHG reporting, implementation and communications.

14

15 Cap-and-Trade and Carbon Market Training

16 In addition to the training and advisory services provided by ClearBlue, Union has attended
17 various conferences and carbon market training events to aid in the development of Union’s
18 knowledge and understanding of the cap-and-trade legislation and existing carbon markets in
19 North America. These training sessions include MOECC training on CITSS registration and
20 planned attendance at auction training in the coming months. In addition, Union has conducted
21 interviews with existing carbon market participants and utilities in Québec and California to
22 leverage lessons-learned from peers who have successfully implemented compliance plans in

1 their respective organizations.

2

3 Carbon Market Counterparties

4 Union has initiated discussions with new and existing counterparties with which it will be able to
5 transact to aid in its compliance efforts for cap-and-trade. These counterparties include other
6 large emitters, market participants in both the upcoming Ontario market and the existing WCI
7 markets, and brokers that are active in the WCI markets. Union will continue to develop these
8 counterparty relationships to enhance opportunities in the secondary market for allowances and
9 offsets as it develops.

10

11 Since Union has not yet engaged in commercial arrangements with these counterparties, it is
12 unable to comment on specific creditworthiness. Union will adhere to credit guidelines outlined
13 in the cap-and-trade CIPP (discussed above). These credit procedures are the same as Union's
14 System Gas Procurement Policy and Procedures that has been previously reviewed by the Board
15 as part of the annual Reporting and Record-Keeping Requirements.

16

17 **II) COMPLIANCE OPTION ANALYSIS AND OPTIMIZATION OF DECISION**

18 **MAKING**

19 Summary of Compliance Plan for 2017

20

■ [REDACTED] A small

22 portion of the compliance obligation will be met through customer abatement resulting from the

introduction of the GIF. [REDACTED]

13
14 Union's 2017 Compliance Plan is designed to achieve compliance, and demonstrates
15 consideration of the Board's principles discussed in the Framework. Union notes the following
16 principles will need to be balanced and weighed together with the need to achieve overall
17 compliance.

18 **Cost-effectiveness:** As demonstrated by Union's long-standing gas supply procurement
19 practices, Union strives for cost prudence. [REDACTED]

█ [Redacted]

█ [Redacted]

3

4 [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

12

13 ***Rate Predictability:*** [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [Redacted]

█ [REDACTED]

█ [REDACTED]

3

4 **Cost Recovery:** Union’s 2017 Compliance Plan demonstrates prudent procurement and
5 compliance practices. As outlined in Exhibit 2, Union proposes to calculate 2017 rates
6 using the estimated 2017 Ontario minimum auction reserve price. [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

10

11 **Transparency:** Union’s 2017 Compliance Plan filing adheres to all of the filing
12 guidelines from the Board’s Framework and clearly outlines the expected costs of the
13 Compliance Plan for 2017. The Compliance Plan also respects the confidentiality
14 guidelines laid out by the Board in order to balance transparency with the need to
15 maintain market integrity.

16

17 **Flexibility:** [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

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5 [REDACTED]

█ [REDACTED] [REDACTED] [REDACTED]

█ [REDACTED]

█ [REDACTED]

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Continuous Improvement: Union recognizes that the cap-and-trade program is new to Ontario, and uncertainties remain. [REDACTED]

[REDACTED] Through activities such as the continuous monitoring of the carbon market for procurement opportunities, connecting with new carbon market counterparties, ongoing training of purchasing staff and attendance at industry events, Union will further develop its knowledge and understanding of the unique characteristics of the Ontario carbon market. As Union develops this acumen, it will apply learnings through future updates to its compliance plans for future years. Union also expects to be an active participant in the

³ Exhibit 3, Appendix D, Annex 2

1 working group outlined in the Framework, with the goal of refining and improving the
2 regulatory construct over time.

3
4 Development of the 2017 Compliance Plan is based on the market information and tools that are
5 available today and recognizes that the Ontario cap-and-trade market is in the early stages of
6 development. A detailed quantitative assessment of each compliance option is not possible, as
7 reliable price forecasts for Ontario compliance options such as offsets or the secondary market
8 are not yet developed. In addition, Union is unable to incorporate the Board's Marginal
9 Abatement Cost Curve ("MACC") and the long term forecast into the development of its 2017
10 Compliance Plan as it will not become available until into 2017. Union expects to incorporate
11 these considerations when it develops its future compliance plans.

12
13 The following outlines the compliance options available to Union in two categories: i)
14 Compliance Instruments and, ii) Abatement Programs.

15
16 **i) Compliance Instruments**

17 The following is a description of the various compliance instruments available to Union and an
18 outline of the associated risks and opportunities associated with each option. When developing
19 its 2017 Compliance Plan, and the CIPP, Union leveraged the advice provided by ClearBlue.
20 ClearBlue's report is provided at Exhibit 3, Appendix D. Union adopted all of the
21 recommendations from ClearBlue for 2017, [REDACTED]

[REDACTED] This is discussed in further detail in Section IV, Risk

1 Management.

2

3 *Allowances*

4 Emission Allowances, or “allowances”, means a limited tradable authorization to emit up to one
5 metric tonne of carbon dioxide equivalent. Each allowance is given a vintage, referring to a year
6 within a compliance period, and they represent the emissions cap for that particular year.

7 Allowances are often described as being either a current vintage or future vintage allowance.

8 Current vintage is defined as having a vintage year that is a year in the compliance period or an
9 earlier year. In addition to current vintage allowances, the government also auctions future

10 vintage allowances. [REDACTED]

[REDACTED]

[REDACTED]

13

14 Allowances (current and future vintages) can be obtained through government auctions, expected
15 to occur four times per year, or in the secondary market. Secondary market transactions can
16 include spot transactions (bilateral purchases for immediate delivery), forward transactions
17 (bilateral transactions for delivery at some point in the future), or exchange-traded contracts
18 (generally futures contracts).

19

20 [REDACTED]

[REDACTED]

22

1

2

3 *Current Vintage Allowances Acquired in Auction:*

4

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

█

[REDACTED]

14

15 *Future Vintage Auctions:*

16

[REDACTED]

█

[REDACTED]

█

[REDACTED]

19

20 In addition to the current vintage auction, the MOECC could auction, in each year, 10% of the
21 total allowances for the year that is three years later than the current auction year. [REDACTED]

█

[REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

4

5 [REDACTED]

█ [REDACTED]

█ [REDACTED]

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15 [REDACTED] [REDACTED] [REDACTED]

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█ [REDACTED]

█ [REDACTED]

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█ [REDACTED]

[REDACTED]

9

10 [REDACTED]

13

14 *Allowances procured through the secondary market:*

15 The carbon market will be new in Ontario during 2017 and Union expects that it will take time
16 for a robust secondary market to develop. [REDACTED]

[REDACTED]

⁵ [REDACTED]

█ [REDACTED]

█ [REDACTED]

3
4 At this time, ICE does not list an Ontario-only carbon product, although an Ontario-only contract
5 has been posted for market participant review. If this contract is listed in 2017, liquidity will
6 continue to be a concern. [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

10
11 *Offsets:*
12 Offsets are emission reductions from projects that reduce emissions but are outside the scope of
13 the cap-and-trade program itself. Based on WCI offset regulations, and the expectation that
14 Ontario regulations will be consistent with WCI, Union is expected to be able to replace
15 approximately 8% of its compliance obligations with offsets. This will be farther detailed in the
16 Ontario offset regulation, which is expected to be issued by the MOECC by the end of 2016.

17
18 The MOECC is still in the developmental stages of creating its offset program, including the
19 protocols (i.e. what types of projects will be eligible to generate offsets and the standards for
20 validation of those projects). [REDACTED]

█ [REDACTED]

█ [REDACTED]

1 *Derivatives (Financial Risk Management)*

2 A derivative is a financial contract which derives values from the performance of an underlying
3 instrument, in this case, Ontario allowances. The most commonly used derivative instruments in
4 emissions trading are options. An option is a contract that gives the buyer or owner the right but
5 not the obligation to buy or sell an allowance at a specified strike price on a specified date.

6

7 [REDACTED]
[REDACTED]
[REDACTED]

10

11 It is important to recognize that financial risk management does not necessarily result in lower
12 costs; rather, it seeks to smooth out extreme price volatility. [REDACTED]

[REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

19

20 [REDACTED]

21

6 [REDACTED]
[REDACTED]

1 *WCI Compliance Instruments*

2 Ontario has announced its intention to link its carbon market to that of the WCI starting in 2018.

3 Once linkage occurs, entities in Ontario will be able to procure compliance instruments from
4 other member jurisdictions (currently California and Québec) and use them for Ontario cap-and-
5 trade obligations. [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

11

12 [REDACTED]

█ [REDACTED]

█ [REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

14

15 **ii) Abatement Programs**

16 *Customer Abatement programs*

17 Union has had an extremely effective DSM programs in place since 1997, which have resulted in
18 significant savings for customers. From 1997 to 2014, Union’s energy conservation programs
19 helped reduce Ontario’s emissions by 16 Mt CO₂e. Union’s 2015-2020 DSM Plan⁸ is expected
20 to achieve more than 15 billion cubic metres of lifetime natural gas savings, equivalent to
21 approximately 29 Mt CO₂e in reductions.

⁸ EB-2015-0029

1 As outlined in the cap-and-trade Framework, customer abatement programs related to
2 compliance plans are intended to be incremental to the utilities' DSM programs. As such, those
3 programs are not included in Union's 2017 Compliance Plan as a customer abatement activity.
4 However, the forecasted customer volumes and emissions (Exhibit 2, Schedule 1) do reflect the
5 significant impact of these programs to ensure that Union's compliance obligation is not over-
6 stated.

7
8 For 2017, there is only one customer abatement program included in Union's compliance plan
9 that is incremental to the DSM plan. Through the Government of Ontario's GIF Union has
10 entered into an agreement with the Ministry of Energy to receive funding of \$42 million to
11 enhance the Home Reno Rebate offering and achieve additional GHG emissions reductions
12 through 2018.

13
14 In its volume forecast, Union has included GHG emission reductions of approximately 7,000
15 tonnes CO₂e in 2017 attributable to the GIF, as shown in Exhibit 2, Schedule 1. In addition to
16 the GIF, Union is also exploring a number of opportunities for customer abatement such as the
17 use of combined heat and power projects and renewable natural gas in the gas supply portfolio.
18 Prudent customer abatement programs such as these will reduce Union's compliance obligation,
19 resulting in less compliance instruments, and provide diversity within the compliance plan. This
20 allows Union to manage both non-compliance and financial risks. As Union evaluates these
21 programs, the outcomes of this analysis will be provided in future compliance plans.

22

1 *Facility Abatement Programs*

2 For Union's 2017 Compliance Plan, there are no new facility abatement programs to be
3 implemented in 2017 that will deliver incremental impacts to existing initiatives. In the past,
4 Union has reduced its energy consumption at its facilities such as in the operation of its fleet and
5 its buildings. Union is also committed to continuing to investigate facility abatement
6 opportunities and including them in future compliance plans, to the extent those initiatives meet
7 evaluation criteria and have cost recovery. A description of Union's existing initiatives and
8 study for future opportunities is described below.

9

10 *Existing Initiatives*

11 Union has launched a multi-year plan to investigate opportunities to reduce emissions in its fleet
12 vehicles. Converting fleet vehicles from gasoline/diesel to CNG will result in emissions
13 reductions for the province of Ontario⁹. As Union converts its fleet, it will decrease the
14 compliance obligation for its gasoline/diesel fuel providers currently fueling the fleet, but will
15 increase the use of its own fuel and therefore its own compliance obligation. The conversion of
16 fleet vehicles to CNG is considered a pilot project with approximately six vehicles per year
17 targeted for conversion to CNG over the 2017-2019 period (out of a fleet of 800).

18

19 Union is also committed to opportunities to reduce emissions in its buildings. Union employs
20 building strategies that address environmental safety, sustainability, and energy conservation
21 through maintaining, upgrading and replacing buildings and/or their operating equipment.

⁹ Converting heavy duty transportation vehicles to CNG results in an estimated emissions reduction of 17%.

1 Within the last 10 years Union has built three Energy Star and four Leadership in Energy and
2 Environmental Design (“LEED”) Gold¹⁰ certified buildings, and is continuing to build and
3 renovate to LEED principals. Further abatement strategies include high efficiency equipment
4 replacements, and replacement of R2 refrigerants. Since Union’s GHG emissions from building
5 is small (approximately 1% of the overall compliance obligation), it has not been identified
6 separately in the 2017 Compliance Plan.

7
8 *Future Abatement*

9 Union is committed to studying possible future initiatives to reduce facilities emissions. For
10 example, Union has initiated a study to identify and assess a range of possible projects,
11 management strategies and technology options for the reduction of GHG emissions from its
12 natural gas transmission, storage and distribution operations. This study will include an
13 assessment of combustion, fugitive and vented emissions sources with a primary focus on GHG
14 Emissions from our operations as reported under O. Reg. 452/09, and as will be reported under
15 O.Reg. 143/16 (Quantification, Reporting and Verification of Greenhouse Gas Emissions),
16 which will replace the current reporting regulation in January 2017. This study will also be
17 consistent with the applicable sections of the Ontario Guideline for Greenhouse Gas Emissions
18 Reporting (May 2016) which Union uses to determine its facility-related compliance obligation
19 under the cap and trade program.

20

¹⁰ EnerStar and LEED Gold are building protocols and standards which improve energy efficiency.

1 Union's review of all facility abatement opportunities will include an initial assessment of
2 emission reduction options with the highest potential. Once a list of potential opportunities has
3 been identified, a detailed engineering and feasibility study will be completed to determine
4 which opportunities can be practically implemented. Union will then evaluate each facility-
5 related abatement option based on a number of criteria, which could include:

- 6 • Applicability to Union's compliance obligation
- 7 • Cost recovery
- 8 • Capital and operating costs, and cost savings
- 9 • GHG emissions reduction potential
- 10 • Noteworthy advantages and disadvantages (e.g. safety, operational reliability, specialized
11 training requirements)
- 12 • Impact on the emission of other pollutants (e.g. NOx)
- 13 • Comparison to cost of allowances and/or other abatement options (using the Board's
14 MACC where possible)

15

16 Union expects to file the outcome of this study in its 2018 Compliance Plan filing.

17

18 **III) PERFORMANCE METRICS AND COST INFORMATION**

19 **Forecasted Compliance Cost**

20 Exhibit 3, Schedule 1 outlines the total expected volume, forecast cost per tonne, total expected
21 cost, and the weighted average cost per tonne of GHG for Union's 2017 Compliance Plan.

22

1 Forecasted prices for the current vintage allowances are based on the short term price forecast
2 outlined in Exhibit 2, Schedule 2.

3
4 **Administrative Costs**

5 As outlined in Exhibit 3, Schedule 2, Union has forecasted 2017 administrative costs of
6 approximately \$4.2 million, which represents approximately 1.5% of Union's estimated 2017
7 compliance obligation. This is consistent with the level of administration costs in other
8 jurisdictions. The Board staff Discussion paper on page 30 noted that 2015 administrative and
9 outreach costs for California utilities ranged from 0.1% to 2.7% of total compliance costs.
10 Union's administration costs will be included in Greenhouse Gas Emissions Impact Deferral
11 Account (No. 179-152), as described in Exhibit 6. The amount recorded in this deferral account
12 as of October 31, 2016 is approximately \$1.3 million.

13
14 The components comprising Union's forecast 2017 cap-and-trade administrative costs include:

15
16 Salaries & Wages: The 2017 estimate of \$2,542,000 relates to the salaries and wages for 13.5
17 FTE. This also includes an allocation of benefits, pension and overhead costs. The level of
18 staffing is commensurate with the incremental level of effort required across the organization to
19 the cap-and trade program. It reflects resources required to implement the program, as well as
20 ongoing requirements to execute Cap-and-Trade on an ongoing basis. The incremental resources
21 are required to address the following:

- 1 • Assess all cap-and trade and CCAP related regulations, guidelines, and legislations,
2 including amendments and proposed amendments to these in order to identify the impacts
3 to Union, Union's customers, and Union's compliance plan.
- 4 • Design, implement, and monitor changes to the organizational processes, policies,
5 systems and structures in order to support the program and Union's compliance.
- 6 • Develop, execute and govern Union's Compliance Plan, including the Compliance
7 Instrument Purchase plan.
- 8 • Complete the annual Compliance Plan filing (including monitoring and reporting) in
9 accordance with the Framework, and actively participate in the working group.
- 10 • Actively monitor the Ontario and WCI carbon market for developments, trends, and
11 pricing.
- 12 • Investigate offsets, regulations, protocols and market development in order to identify
13 and assess opportunities and impacts.
- 14 • Establish and maintain Union's user and company registration in the CITSS system.
- 15 • Actively monitor and research developments in climate change policies and carbon
16 pricing mechanisms in other jurisdictions, including regional, national and international
17 markets.
- 18 • Completion of new GHG emissions reporting, and the development of emissions
19 forecasts, forecasts updates, and various reporting for actual emissions compared to
20 forecast.

- 1 • Determination of accounting treatment related to compliance instrumental procurement
2 and payment, deferral accounting, revenue accounting, and financial reporting impacts as
3 a result of cap-and-trade.
- 4 • Evaluation of abatement opportunities (customer and facility), including comparison to
5 the cost of compliance instruments.
- 6 • Investigation, evaluation and potentially the pursuit of new technologies and innovations
7 to result in GHG emission reductions in the province (e.g. renewable natural gas,
8 compressed natural gas).

9
10 **Salaries & Wages – Customer Contact Center:**

11 Union estimates incremental costs of \$275,000 to address incremental calls to the customer
12 contact center as a result of cap-and-trade. The expected magnitude of incremental calls is based
13 on actual experience from 2014, an extreme cold winter which resulted in incremental gas supply
14 charges on customers' bills, and increased call volume. Union estimates that seven temporary
15 employees will be required for the first six months of 2017 to facilitate the increased call volume
16 as a result of cap-and-trade.

17
18 **Consulting and Fees:**

19 Union will continue to secure external consulting to support the development of the Compliance
20 Plan and the implementation of the cap-and-trade program. These consulting services are
21 forecasted to be \$670,000 and include work such as compliance plan development and

1 execution, GHG reporting changes, offset scoping and investigation, implementation support,
2 communications and legal interpretation of regulations and application.

3

4 Bad Debt Related to Cap-and-Trade:

5 Union has estimated an increase of \$600,000 in bad debts. This amount represents an increase in
6 annual bad debts of approximately 10% the estimated increase in bad debts is based on the
7 increase in bills relating to cap-and-trade charges for the general service market of approximately
8 10%.

9

10 Revenue Requirement on Capital Costs

11 Union has included the 2017 revenue requirement of \$68,000 related to capital costs of
12 approximately \$850,000 as at December 31, 2017 for billing system changes as a result of cap-
13 and-trade.

14

15 Other:

16 These costs of \$68,000 include employee travel expenses, market research, and internal and
17 external communications.

18

19 [REDACTED]

[REDACTED]

[REDACTED]

█ [REDACTED]

2

3 [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

7

8 **Financing Costs**

9 The Framework recognizes that financing costs are “carrying costs related to the acquisition of
10 emissions units for future compliance” (emphasis added). [REDACTED]

█ [REDACTED]

█ [REDACTED]

13

14 [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

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Union is also aware of recent changes to the Income Tax Act that could impact cash flows, and short-term financing costs. Union is still assessing these changes and the possible impacts, so has not forecasted any related financing costs for 2017 at this time.

In the event Union incurs financing costs related to these, or any other circumstance, it will include these costs in the applicable deferral accounts and seek recovery through the deferral account disposition proceeding.

IV) RISK MANAGEMENT

Below is a description of the risks that Union has identified related to its 2017 Compliance Plan. Each risk includes a description of the potential negative outcomes that could result if the risk is not appropriately managed. Union’s plan for the management of each risk follows, in “Risk Mitigation and Scenario Analysis”.

1. Risk Identification

Forecast volume and auction purchase variability

Union’s compliance obligation will fluctuate in relation to the demand for natural gas by its customers. These fluctuations can be caused by a number of different physical and economic drivers. The key drivers of volume variability for Union’s 2017 compliance obligation are:

- The impact of warmer or colder than normal weather on customer demand for natural gas
- Variation in the demand for natural gas by natural gas fired power generators

- 1 • Variation in the use of natural gas to operate Union’s compressors
- 2 • Variation in the amount of UFG experienced
- 3 • Variation in the demand for natural gas driven by economic factors impacting residential
- 4 or industrial use
- 5 • Variation in the use of natural gas driven by the impacts of DSM and other emission
- 6 reduction measures

7

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15

16 *Price and foreign exchange risk*

17 As with any market, including financial markets or natural gas markets, prices will fluctuate

18 throughout each day, month and year. Compliance entities are exposed to price risk on any

19 position they takes in the Ontario carbon market. As Union’s compliance obligation is incurred,

20 it will naturally accumulate a short position in the market until compliance instruments are

21 acquired. In this case, if market prices spike, then this will expose Union to increased cost of

22 compliance. Conversely, at any time where Union holds more compliance instruments than is

1 necessary to cover its compliance obligation incurred to date, it will be taking a long market
2 position. In this case, if market prices begin to fall, then Union's cost of compliance will be
3 unnecessarily high.

4 Since the Ontario carbon market pricing is based on a US dollar price converted to Canadian
5 dollars using the auction exchange rate, there will be price risk associated with fluctuations in the
6 foreign exchange rate. [REDACTED]

[REDACTED]

9

10 *Liquidity risk*

11 Liquidity risk will result if Union is unable to obtain the compliance instruments which it
12 requires to meet its compliance obligation due to the lack of reliable routes to market for those
13 compliance instruments. Low liquidity can result from a number of factors including scarcity of
14 compliance instruments or a small number of counterparties with which to transact. Since Union
15 will be one of the largest compliance buyers in the Ontario market, liquidity risk is higher simply
16 due to Union's requirement for a higher volume of compliance instruments. Liquidity risk can
17 often drive other risk events. For example, if Union were to try to buy a large volume of
18 allowances in the secondary market when adequate liquidity is not present, it would put upward
19 pressure on prices. Furthermore, failing to procure the required volume of compliance
20 instruments due to inadequate market liquidity could result in Union being unable to comply
21 with its obligations under the cap-and-trade legislation. Liquidity risk is expected to be higher in
22 the secondary market in the earlier years of the compliance period. Liquidity and the factors

1 influencing it are described in more detail in the ClearBlue report at Exhibit 3, Appendix D, p.p.
2 22-24.

3
4 *Project execution risk*

5 Project execution risk refers to the risk that a planned project aimed at achieving compliance
6 (either through offsets or customer/facility abatement) does not materialize as planned. [REDACTED]

7 [REDACTED]
8 [REDACTED]

9
10 *Credit and counterparty risk*

11 Counterparty risk is the risk to each party of a contract that the counterparty will not live up to its
12 contractual obligations. Counterparty risk is a risk to both parties and should be considered when
13 evaluating a contract. For example, if Union were to contract in the secondary market for the
14 forward delivery of allowances to occur in December 2017, the risk that Union's counterparty
15 fails to deliver the allowances per the agreement would be counterparty risk.

16
17 Credit risk is the risk of default on a debt that may arise from a borrower failing to make required
18 payments. For example, if Union were to contract for a spot sale of allowances, the risk of the
19 counterparty defaulting on the payment for the allowances would be credit risk.

20
21 This new emerging market will pose credit and counterparty risks for Union that were not
22 present prior to the introduction of the Ontario carbon market. This is due to the uniqueness of

1 the carbon market itself, both in regards to the types of products and contracts available and due
2 to the types of counterparties that are active in a carbon market.

3
4 *Non-compliance risk*

5 Non-compliance risk is the risk of Union not fulfilling its responsibility with respect to all cap-
6 and-trade legislation, regulations and guidelines¹¹. There are significant financial penalties in the
7 event of non-compliance. Union would also face reputational harm in the event of non-
8 compliance.

9
10 *Government and legislation risk (risk of changing legislation)*

11 Union is subject to various federal and provincial climate change laws and regulations. The
12 introduction of new or changed government policies and regulations (both provincial and
13 federal) could be a risk to Union's compliance plan to the extent that they impact the compliance
14 requirements and/or how it can be satisfied.

15 The carbon market in Ontario is still in its infancy and there remain a number of regulations yet
16 to be defined by the government (such as offset regulations and protocols, early reduction credit
17 regulations and administrative penalties). In addition, there are administrative amendments to
18 the cap-and-trade regulations that were issued for comment on November 4, 2016 which are
19 expected to be finalized later this year. Union also notes that in other jurisdictions, regulation
20 amendments followed initial implementation to address unforeseen issues and possible

¹¹ Includes: Climate Change Mitigation and Low Carbon Economy Act, GHG Reporting Regulation, GHG Reporting Guideline, Cap-and-Trade Program Regulation, and any future legislation, regulations or guidelines that would be applicable.

1 consequences, which may also happen in Ontario.

2

3 In addition, it is not yet known when or if Ontario will link its market with the other jurisdictions
4 in the WCI, although Union recognizes significant effort is underway by the government to
5 achieve this linkage for the beginning of 2018. Such linkage could result in amendments in
6 order to ensure alignment with WCI partners. [REDACTED]

[REDACTED]

[REDACTED]

9

10 Compounding the uncertainty around the future of program regulations is the impact of newly
11 announced federal government proposal to reduce GHG emissions and address climate change.

12

13 **2. Risk Mitigation and Scenario Analysis**

14 The following is a discussion of the risk mitigation practices that Union plans to execute in 2017
15 related to the risks identified above.

16

17 *Forecast volume and auction purchase variability*

18 In order to manage volume variability, the first and most critical step is to monitor changes in
19 volume consumption. Union has established a “re-forecasting” process which will be executed
20 on a monthly basis. This process will identify consumption to date relative to the plan, and
21 identify significant changes going forward (such as unexpected customer growth, or a plant
22 closure). The “re-forecast” will then be considered in relation to the execution of the compliance

1 plan to date, and result in potential changes to the plan for the balance of the period.

2

3

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

14 █ [REDACTED]

█ [REDACTED]

█ [REDACTED]

17

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED] The volume scenarios were developed by Union and the approach is

█ [REDACTED]

1 explained in Annex 1 of the ClearBlue report¹³. Union reviewed these scenarios to ensure they
2 adequately reflected coldest and warmest weather patterns along with an accurate representation
3 of the recent contract customer volatility that can occur. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

9

10 *Price and foreign exchange risk*

11 Since the carbon market in Ontario will be new in 2017, it is very difficult to assess the price risk
12 that could impact Union’s Compliance Plan. Figure 1, produced by ClearBlue, illustrates the
13 price history from the WCI market in U.S. dollars/tonne. As highlighted in the chart, in
14 instances of new emission markets being introduced, price levels were relatively high in the early
15 stages and fell throughout the first year as the market became more mature. However, there were
16 still short-term price events driven by market-specific factors that are difficult to predict (e.g. the
17 San Onofre nuclear leak).

18

19

20

21

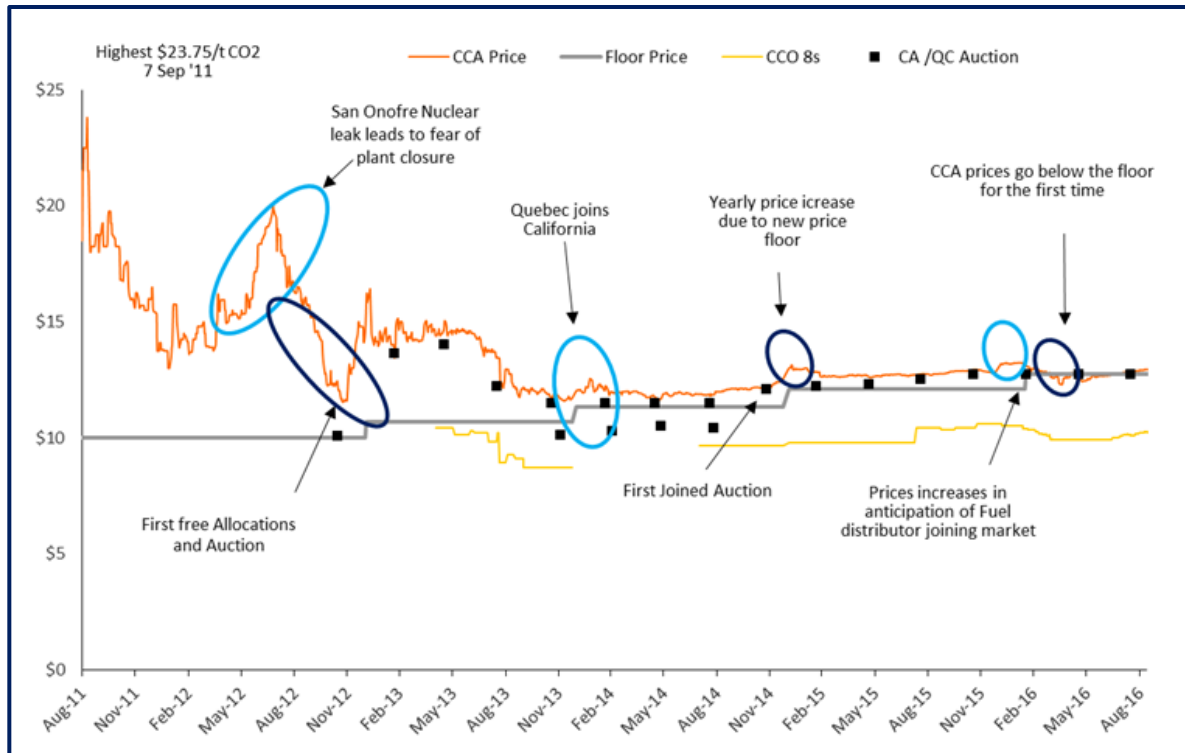
¹³ Exhibit 3, Appendix D, p.p. 30-32

¹⁴ Exhibit 3, Appendix D, pg. 33-41

1
2

Figure 1

Price History from the WCI Market



3
4

5 While this reflects the experience in the WCI market to date, it does not necessarily reflect what
 6 will occur in Ontario. That will be a function of Ontario's market, which does have differences
 7 with California and Québec. Differences include the allocation of free allowances and the level
 8 of the cap relative to current emissions. Ontario also has a much more significant heating load
 9 underpinned by natural gas than either California or Québec.

10

11 The ability for Union to implement objective, quantitative price risk management practices is
 12 limited due to the newness of carbon markets not only in Ontario, but also in the WCI. Union

1 will therefore employ a more qualitative approach to managing the price and foreign exchange
2 related risk surrounding its 2017 Compliance Plan.

3
4 Union will continue to monitor and analyze carbon market pricing, market developments, as well
5 as pricing trends and expectations. This knowledge and understanding of the carbon market will
6 be incorporated on an ongoing basis as Union manages its overall compliance position. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The flexibility afforded in Union's CIPP will allow
11 Union to respond to short-term price events while also maintaining reasonable net short or long
12 compliance positions.

13
14 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

18
19 *Liquidity risk*
20 Union's assessment of the relative level of liquidity for each of the various compliance options is
21 discussed in Section II.

22

1 Union will manage liquidity risk by prioritizing selection of compliance instruments for 2017.

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5

6 *Project execution risk*

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10

11 *Credit and counterparty risk*

12 Union will leverage existing practices in relation to the management of credit and counterparty
13 risk as it does for other lines of its business. [REDACTED]

14 [REDACTED] Long-term credit and counterparty

15 risk is partially mitigated by interacting with multiple parties of which each is required to meet
16 the established minimum credit threshold.

17

18 All transactions related to the Compliance Plan will be guided by existing credit procedures,
19 which are detailed in the CIPP in Exhibit 3, Appendix B.

20

21

22

1 *Non-compliance risk*

2 Union will execute its compliance planning and implementation processes as part of its ongoing
3 operations to ensure compliance with cap-and-trade legislation, guidelines and regulations and
4 Union's own governance policies and requirements. Other risk mitigation procedures discussed
5 in this section will also aid in Union's mitigation of non-compliance risk. The governance,
6 resourcing and organizational capabilities described in Section I are in place to assure such
7 compliance.

8

9 *Government and legislation risk (risk of changing legislation)*

10 Union has dedicated resources to monitoring cap-and-trade legislation, guidelines, and
11 regulations. In addition, Union expects to continue the dialogue with government on cap-and-
12 trade and its implementation. This allows Union to not only understand and clarify the
13 application of legislative rules to our compliance obligation, but is also intended to be helpful to
14 government in highlighting potential issues to be addressed.

15

16 Union also manages this risk in its compliance plan by maintaining flexibility to be able to adapt
17 to changes in policy and resulting regulations. Particularly in relation to the infancy of the
18 program and pending WCI market linkage, Union's Compliance Plan is initially focused on the
19 short term, meaning that Union is not committed to compliance actions which cannot change if
20 or when legislative or regulation changes materialize.

21

22

1 **3. Longer Term Investments**

2 For the 2017 Compliance Plan, Union does not have any long term investment projects that will
3 impact its 2017 obligation within regulation. This is in part due to the infancy of the program
4 and the number of uncertainties that still remain. In addition, there has been insufficient time for
5 Union to bring forth long term investment opportunities and have their cost recovery assured
6 prior to their inclusion in the 2017 Compliance Plan. An interim solution for recovering the cost
7 of capital investments between 2017 and the next rebasing application would be required, since
8 the current mechanisms (including the Z-factor), may not be sufficient to recover the costs of
9 these initiatives. Assurance of cost recovery is required; otherwise, the utility will be absorbing
10 the cost of such investments, while customers realize the benefits of lower compliance costs.

11

12 **4. New Business Activities**

13 Union is not proposing any new business activities in its 2017 Compliance Plan. However,
14 Union has brought two specific proposals to government for CCAP funding that will reduce
15 GHG emissions in Ontario. These proposals are Renewable Natural Gas (“RNG”) and CNG for
16 heavy duty vehicles.

17

18 *Renewable Natural Gas (“RNG”)*

19 RNG is an alternative to conventional gas supply, is non-emitting, and can be stored, transmitted
20 and distributed using the existing natural gas infrastructure. RNG is produced by capturing
21 methane that results from the decay of any organic matter. Methane is captured at the source
22 (e.g. landfills, waste water, agriculture), where it is “cleaned” and then integrated into the natural

1 gas system. Union is examining how RNG can become part of the utility’s gas supply portfolio,
2 which will require regulatory approval. While it is not expected that this will be feasible for
3 2017, Union is expecting RNG to be part of the gas supply portfolio as early as 2018. Union
4 estimates that by 2020, up to 2% of system supply could be provided using RNG, increasing to
5 up to 10% of total supply by 2030. Replacing 10% of the province’s conventional natural gas
6 supply with RNG yields an estimated emissions reduction of up to 8 Mt CO₂e/ year by 2030.

7

8 *Compressed Natural Gas (“CNG”)*

9 CNG can replace high emitting fuels (such as diesel) for heavy-duty trucks, where electrification
10 is not an option because it is not practical or not technically feasible. The move to CNG for
11 these vehicles would yield an estimated 17% reduction in GHG emissions for each vehicle. It is
12 expected that CNG would reduce emissions by up to 3 Mt CO₂e/year by 2030. Although CNG
13 for large trucks does not reduce Union’s GHG emissions, it does significantly help Ontario
14 reduce GHG emissions.

15

16 Neither of these initiatives is in scope for the 2017 Compliance Plan. However, Union has
17 dedicated resources to evaluating and structuring programs given the significant impact they can
18 have to reduce provincial GHG emissions. Further details on these programs will be brought
19 forward in future compliance plans, to the extent applicable.

20

UNION GAS LIMITED
 Forecasted Compliance Cost
 For Activity In The 12 Month Period Ending December 31, 2017

Line No.	Compliance Option	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
		2017								
		Utility			Non-Utility			Total		
	Volume to be procured (tonnes of CO2e)	Forecasted Price (CAD/tonne of CO2e)	Forecasted Cost (CAD)	Volume to be procured (tonnes of CO2e)	Forecasted Price (CAD/tonne of CO2e)	Forecasted Cost (CAD)	Volume to be procured (tonnes of CO2e)	Forecasted Price (CAD/tonne of CO2e)	Forecasted Cost (CAD)	
Compliance Instruments										
1	Emission Allowances									
2	Offsets									
3	Derivatives									
4	Financing Costs									
5	Total/Weighted Average - Compliance Options	15,553,804	17.70	275,302,336	43,424	17.70	768,613	15,597,229	17.70	276,070,948
Abatement										
6	Customer Abatement Programs	6,908	-	-	-	-	-	6,908	-	-
7	Facility Abatement Programs	-	-	-	-	-	-	-	-	-
8	Total Abatement	6,908	-	-	-	-	-	6,908	-	-
9	Total/Weighted Average	15,560,712	17.69	275,302,336	43,424	17.70	768,613	15,604,137	17.69	276,070,948

UNION GAS LIMITED
Forecasted Cap and Trade Administrative Costs
for activity in the 12 month period ending December 31, 2017

	2017 Forecast ('000s)
Salaries and wages	\$ 2,542
Salaries and wages - customer contact centre ⁽¹⁾	275
Consulting	670
Bad debts related to cap-and-trade	600
Revenue requirement on capital costs (billing systems)	68
Other	68
Total administrative costs	<u>\$ 4,223</u>
2017 Budgeted FTE's	<u>13.50</u>

⁽¹⁾ The salaries and wages for the customer contact centre are temporary employees for part of 2017 only

Union Gas Compliance Plan Guiding Principles

Gas Supply Guiding Principles	Union Gas Compliance Plan Guiding Principles
<p><i><u>Objective:</u> Union’s gas supply portfolio is guided by a set of principles that are designed to ensure customers receive secure, diverse gas supply at a prudently incurred cost.</i></p>	<p><i><u>Objective:</u> The development and execution of a prudent compliance plan and process, which will result in reasonable costs for customers.</i></p>
<p>Ensure secure and reliable gas supply to Union’s service territory</p>	<p>Compliance - ensure compliance with legislative and regulatory obligations for natural gas utilities</p>
<p>Minimize risk by diversifying contract terms, supply basins and upstream pipelines</p>	<p>Diversification - minimize risk through diversification within the compliance portfolio</p>
<p>Encourage new sources of supply as well as new infrastructure to Union’s service territory</p>	<p>Flexibility - adapt to evolving market conditions and fluctuations in the compliance obligation</p>
<p>Meet planned peak day and seasonal gas delivery requirements</p>	
<p>Deliver gas to various receipt points on Union’s system to maintain system integrity</p>	



**CAP & TRADE COMPLIANCE INSTRUMENT
PROCUREMENT PROCEDURES**

GOVERNANCE AND OPERATING CONTROLS

January 2017

Compliance Instrument Procurement Procedures

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1 INTRODUCTION

In May of 2016, the Ontario government issued the *Climate Change Mitigation and Low Carbon Economy Act, 2016* and *Ontario Regulation 144/16, The Cap and Trade Program*. This legislation was introduced for the purposes of reducing Greenhouse Gas (“GHG”) emissions in the province. Under Ontario’s *Climate Change Mitigation and Low Carbon Economy Act, 2016*, Union Gas Limited (“Union”) as a natural gas distributor has the obligation to reduce GHG emissions or purchase compliance instruments to permit GHG emissions. Union as a distributor has GHG related obligations¹ for the following types of emissions:

- Facility-related emissions for facilities Union owns or operates; and,
- Customer-related emissions for natural gas-fired generators, and residential, commercial and industrial customers who are not Large Final Emitters or voluntary participants.

The purpose of this document is to provide clear and consistent directives in the identification, measurement and management of the risk exposures related to Union’s Cap & Trade Compliance Instrument Procurement Procedures (“Procurement Procedures”). This document establishes the accountabilities and responsibilities related to the Procurement Procedures, specifically the process of securing compliance instruments to meet Union’s customer and facility related obligations arising from Ontario’s Cap & Trade legislation.

This document applies to the procurement or sale of all Cap & Trade compliance instruments. This document does not apply to the development of GHG abatement projects or the development of projects which qualify for offset creation per Ontario’s applicable offset protocols. The governance related to development of offset and abatement projects will be documented separately.

¹ As defined by Ontario Regulation 452/09 Green House Gas Emissions Reporting issued December, 2015 and Ontario’s Guideline for Greenhouse Gas Emissions Reporting, issued May 19, 2016, or any subsequent updates to these regulations & guidelines.

2 OBJECTIVES

The following objectives provide the foundation for the activities that take place related to the procurement of compliance instruments. The objectives are as follows:

2.1 Implementation and maintenance of corporate governance and controls

Corporate Governance is an integral part of the procurement process. The procurement plans have oversight by senior management. All transactions are approved by senior management and have appropriate internal controls in place. Subject to the Internal Audit department's annual risk assessment, a periodic audit of transactions is performed to ensure compliance with the governance processes explained in this document.

2.2 Minimize exposure to risk

This objective is in place to recognize the need for prudent practices in compliance instrument procurement such that market, credit, legal, contractual and tax related risks are minimized.

3 CONTROLS

There are six independent controls built into the Procurement Procedures governance process. 1) Corporate Governance through Executive review of the procurement plans; 2) Transactions in the procurement plan approved by the Vice President or Director, and Manager presiding over the compliance instrument procurement function; 3) Segregation of the responsibilities between the Front Office (transactors) and the Back Office (transaction administration) functions; 4) Internal audits of the transactions; 5) Exception reporting; and 6) Standard contracts reviewed every second year, or as required by legislative changes, by Finance, Credit, Tax and Legal.

3.1 Corporate Governance

Union Gas Executive, at least annually, review and approve the Cap & Trade Compliance Plan, which includes the Procurement Procedures. The procurement plan executive review and approval is used to establish and guide the compliance instrument transactions executed by Union. In accordance with Delegation of Authority, the presiding Vice President, has full authority to implement the plan.

3.2 Procurement Plan Approval

Union's compliance instrument procurement function is managed within the Business Development Storage & Transportation group ("BDS&T"). Execution of the program is managed by the Director presiding over the compliance instrument procurement function with oversight by the Vice President, BDS&T.

The management duties relating to the Procurement Procedures include:

- Using historical information, market trends and future expectations, review the compliance instrument procurement plans annually and make any necessary changes to the plans;
- Oversee and monitor Union's risk exposure related to the acquisition of compliance instruments ;
- Ensure the risk exposure related to the acquisition of compliance instruments is managed in compliance with the governance procedures;
- Ensure proper procedures and controls are in place in order to comply with all policies applicable to the acquisition of compliance instruments;
- Seek approval from the Union Gas Executive of the annual compliance instrument procurement plan;
- Seek approval from the Spectra Energy RMC ('RMC') as needed for compliance with the Corporate Risk Management policy; and
- Report to the RMC on risk levels to ensure tolerances are regarded.

As part of Union's Procurement Procedures, the Front Office develops a procurement plan for the applicable compliance plan term. This term will generally cover the entire Cap & Trade compliance period, but exceptions for the first few years of the Ontario Cap & Trade program have been made according to the Ontario Energy Board ("OEB")

Framework which allows for initial Compliance Plan terms that do not cover an entire compliance period.

In addition to the longer term procurement plan included in Union's Cap & Trade Compliance Plan, the Front Office will also develop monthly procurement plan updates which update assumptions and information related to the total obligation forecast, market conditions which may have changed since the time of the Cap & Trade Compliance Plan, impacts of offset programs and abatement programs, and any other information relevant to the procurement of compliance instruments by Union.

The presiding Vice President or Director, and the Manager presiding over the compliance instrument procurement function or his /her delegate approve both the long term procurement plan included in the Compliance Plan and the monthly procurement plan updates including exceptions to both the plans and the governance procedures, if any. The approval of transactions could occur as they arise or be conditional upon a number of different metrics such as cover ratio, compliance position thresholds and relative market price levels. These approvals provide all necessary authorizations for the transactors to execute the transactions according to the procurement plans.

3.3 Segregation of Duties

3.3.1 Front Office

The Front Office is responsible for developing and executing (i.e. procurement activities such as participation in auctions, transacting on the secondary market, etc) both the annual procurement plan included as part of Union's Cap & Trade Compliance Plan and the monthly procurement plan updates. The Front Office is responsible for revising the plan, presenting the plan for appropriate approval, and presenting supporting information for any changes recommended. Once the procurement plan is approved, the Front Office is responsible for:

- Establishing and overseeing the business relationships associated with conducting the plans;
- Ensuring compliance with all credit guidelines provided by Credit;
- Recording all transactions and related terms and informing appropriate persons of all transactions;
- Management of the Compliance Instrument Tracking System Service (CITSS) to ensure Union's compliance with relevant account limits and user/entity information requirements established under the regulations;
- Maintaining price data;
- Providing first line checking of all transaction invoices received;
- Reporting of purchases and exceptions to the Procurement Procedures to Regulatory and other impacted internal groups as needed;
- Providing reports as requested by senior management or the OEB;
- Providing open communication to the Cap & Trade department and Regulatory on Procurement Procedures updates; and
- Initiating a review of the Procurement Procedures if market conditions warrant or at least every 3 years.

3.3.2 Back Office (Finance/Credit)

The Back Office consists of revenue and gas accounting, Credit and Accounts Payable (reporting through to the Vice President, Finance). The Back Office is responsible for the following primary functions:

- Physical deal settlements, posting of security and accounting;
- Financial accounting, month-end closing, and reporting;
- Account reconciliation with counterparties;
- Reconciliation and verification of account activity in CITSS;
- Providing counterparty credit support as detailed in the Credit Guidelines; and
- Reviewing standard contracts every second year, or as required by legislative changes.

3.4 Internal Audit of Transactions

Periodically, the Internal Audit department initiates and conducts an audit of transactions. The intent of the audit is to ensure the Procurement Procedures are being followed.

In the event that Audit discovers any discrepancies relating to transactions, settlements, etc. that could expose the company to legal liability, the Director presiding over the compliance instrument procurement function is notified immediately.

At a minimum, audit procedures will be designed to verify that:

- Transactions comply with the Procurement Procedures in addition to internal guidelines and regulatory requirements; and
- Transactions are accurately recorded and appropriately approved

3.5 Exception Reporting

The transactors adhere to the Procurement Procedures as completely as possible in all circumstances. However, Union recognizes that exceptions to the Procurement Procedures may be required in certain market situations and such exceptions are reported as required.

3.6 Review of Standard Contracts

All standard contracts relating to procurement activity are reviewed every second year, or as required by legislative changes, by Finance, Credit, Tax, Legal and Insurance.

4 CREDIT GUIDELINES

The credit guidelines apply to all compliance instrument transactions. The guidelines reflect the appropriate credit risk for the specific type of compliance instrument transaction. The intent of the guidelines is to maintain a prudent credit practice balanced with the need to maintain ample alternatives for acquiring compliance instruments.

Credit requirements apply to all transactions related to compliance instruments. This includes, but is not limited to:

- The purchase or sale of allowances, including the posting of security (through auction or secondary market)
- The purchase or sale of offsets, but not the development of offset projects
- The purchase or sale of forward or futures contracts related to allowances or offsets
- The purchase or sale of other derivative instruments such as options or swaps related to allowances or offsets

4.1 Credit Requirements

Counterparties require an investment grade rating by an acceptable rating agency (Standard & Poors (BBB- and above), Moody's (Baa3 and above), or DBRS(BBB/low and above) and / or an acceptable internal review by the Credit department. Alternatively, a counterparty without a rating, or below investment grade, may be approved as a counterparty provided a parent or affiliate that has an investment grade rating guarantees these transactions. Legal and Credit must approve any guarantee offered. A counterparty without an investment grade rating and without a parent or affiliate guarantee may be approved as a counterparty at the discretion of the Credit department in accordance with the Union Gas Credit guidelines.

Any approved counterparty receives a credit limit assigned by the Credit department. Upon request from the Front Office, the Credit department considers raising the credit limit for specific counterparties in accordance with Union Gas Credit guidelines and within the Credit department's Delegation of Authority.

If at any time counterparty's credit exposure is greater than the authorized credit limit, Credit informs the Director presiding over the compliance instrument procurement function and then he/she recommends a course of action to bring the counterparty within authorized credit limits by either raising the limit, if appropriate, or restricting transactions with the counterparty until they are within limits.

If Credit has reason to be concerned about the financial stability of any counterparty, Credit notifies the Director presiding over the compliance instrument procurement function, and Legal. Credit, Legal and the Director presiding over the compliance instrument procurement function will develop a course of action to limit Union's financial liability consistent with the provisions of the purchase agreement in place with the counterparty.

4.2 Responsibilities of the Front Office

- The Front Office requests that Credit review the creditworthiness of a new counterparty prior to commencement of transacting with the counterparty.

- The Front Office may request that Credit re-evaluate the credit limit of an existing counterparty if the counterparty is at the maximum credit limit and the Front Office wishes to conduct further business with that counterparty.

4.3 *Responsibilities of the Credit Department*

- Credit confirms in writing to the Front Office the credit rating and credit limit of any new counterparty.
- Credit conducts a formal annual credit review of all counterparties and reports to the Front Office any material change in the credit rating of a counterparty.
- If Credit has reason to be concerned about the financial stability of any counterparty, Credit notifies the Director presiding over the compliance instrument procurement function and Legal.
- The Credit department monitors and reports the current credit exposure and the maximum exposure for counterparties at least monthly with capability for weekly reporting if required. If the current credit exposure is greater than the authorized credit limit, Credit informs the Director presiding over the compliance instrument procurement function.

5 SUPPORT DEPARTMENTS

5.3 *Cap and Trade Department*

The Cap & Trade department facilitates the connection between the components of the Compliance Plan and the compliance instrument procurement requirements. This department will also be monitoring changes in legislation, regulations, and policies related to Cap & Trade and potentially compliance instrument procurement. In addition, this department will monitor CITSS account activity to ensure compliance with account limits.

5.4 *Tax Department*

Tax provides the Front Office and Finance with any updates or implications of any proposed or pending tax legislation that affects the Procurement Procedures or transactions. The Front Office and Finance seek the advice of Tax as required. Tax reviews the standard contracts every second year.

5.5 *Legal*

Legal is responsible for reviewing contractual terms and establishing Union's standard contracts with counterparties. Once a standard format of each of the documents has been approved by Legal, any future sign off by Legal is not required. If there are any subsequent changes to the formatting or the wording, or potential law changes then a proper review and sign off are required by Legal for any new documentation. Legal reviews the standard contracts every second year.

6 AFFILIATE TRANSACTIONS

All counterparties are treated equally and no preferential treatment is given to affiliated companies. Any transaction conducted with an affiliated company complies with the OEB's Affiliate Relationships Code for Gas Utilities.

Effective January 1, 2017

Cheryl Newbury, Director, Gas Supply & Customer Support

Jim Redford, Vice President,
Business Development, Storage & Transportation

GLOSSARY

Alternate Account Representative - A designated representative authorized to act on behalf of a participant. This representative must have undergone the Recognition as an Account Agent process in Ontario and have a valid CITSS User ID.

Back Office - The management and staff that have the primary responsibility for accounting, payables/receivables management, reporting and credit matters.

Cap & Trade Compliance Plan – The detailed plan a utility has for compliance with Cap & Trade legislation. The Cap & Trade Compliance Plan is required to be filed with the OEB by all gas utilities in Ontario, in accordance with the Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities.

Compliance Instrument – means an Ontario emission allowance or offset issued by the Ontario government for use in the Ontario Cap & Trade program. If the Ontario Cap & Trade program links with WCI Cap & Trade program or any other emission reduction program, this will also include any emission allowances, offsets, or other units issued by other jurisdictions included in the WCI or other linked emission reduction programs that are approved to satisfy emission compliance obligations for Ontario entities. Each compliance instrument currently can be used to fulfill a compliance obligation equivalent to up to one metric tonne of CO₂.

Compliance Instrument Tracking Service System (CITSS) - The web-based system used to register participants and track allowances and credits from issuance to retirement.

Counterparty – The person or institution standing on the opposite side of a transaction to Union.

Credit Risk – The risk of default by either counterparty in a transaction.

Executive - Union Gas Leadership group, this consists of the President of Union Gas, direct reports to the President of Union Gas and the VP, Finance, Director of Information Services, Director of Employee Relations & Business Services and the VP, General Counsel Canada.

Front Office - The management and staff that have the primary responsibility for counterparty contracting and transacting.

Primary Account Representative (PAR) - A designated representative authorized to act on behalf of a Cap & Trade participant. This representative must have undergone the Recognition as an Account Agent process in Ontario and have a valid CITSS User ID. The PAR must have Ontario residency.



ClearBlue Markets

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ClearBlue Markets Cap & Trade Services

About ClearBlue Markets and Team Resumes

August 10, 2016

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1. About ClearBlue Markets

ClearBlue Markets (“ClearBlue”) is a carbon market company whose team has pioneered the carbon markets since 2000. The ClearBlue team has unmatched practical experience in all aspects of Cap & Trade, ranging from policy, to strategy development, to compliance management and trading. The team developed their wide-ranging and unique experience working for leading carbon market entities, including:



Company/Organization highlights:

EcoSecurities (Sold to JP Morgan in 2009)

First and largest global developer of carbon offsets, having developed 10% of the global markets' 1.6 billion offsets.

Pioneering GHG Strategy, offset project development and carbon capacity building advisory firm.

Barclays Capital

Historically the largest trader of carbon compliance allowances globally.

Largest Investment Bank sales team providing products and structured transactions to EU-ETS compliance entities.

Leading Investment Bank offset sourcing team.

Vattenfall

Second largest EU-ETS entity compliance position (over 90,000,000 tCO₂ annually).

Large multi-national with numerous compliance installations.

Sourced, developed, and managed a portfolio of over 200 offset projects.

Eneco Energy Trading

Large Dutch EU-ETS compliance entity and offset purchaser.

Pioneer in the development and purchase of forestry offset projects.

Fortis Bank

Among the first banks to be involved in the carbon market, providing early support for the development of offset projects and sale of offsets and allowances to compliance entities and governments.

Developed innovative EU allowance contract structures.

UNFCCC

The United Nations Framework Convention on Climate Change Secretariat (“UNFCCC”) is charged with supporting the operation of the initial Convention, the Kyoto Protocol and now also the Paris Agreement. UNFCCC administers the CDM market, which is the world’s largest offset market issuing over 1.6 billion offset credits and developed hundreds of offset protocols.

Relevant ClearBlue expertise

ClearBlue provides Union with a strong team of technical experts with extensive practical experience in Cap & Trade policy and market trading, making ClearBlue well-suited for the development of a compliance instrument purchasing strategy, the development of an auction bidding strategy, the development for a process for ongoing governance and monitoring of the compliance plan, as well as any other requirements that the Ontario Energy Board may have that Union may require advisory or consulting services for. Furthermore, our team offers model-building services in quantitative and risk analysis. We have advised major governmental players, private sector players and international organizations on climate policies; Cap & Trade strategies; market developments; provided workshops and training of staff; and delivered technical assistance for risk management, compliance trading and carbon purchase programs.

Selected Organizations that the team has provided services for and transacted with:

Intergovernmental/NGO

- World Bank, Asian Development Bank, Greenpeace, EBRD, UN-FAO, WWF, UNFCCC,

Governmental

- EU, United Kingdom, Netherlands, Qatar, Bulgaria, Denmark, Malaysia, Jamaica, Saudi Arabia, Syria, Jordan, Egypt, Morocco, Tunisia, France, Romania

Corporate

- Gas Natural, Statoil, Eskom, Gasunie, Shell, Qatar Petroleum, Sappi, Statkraft, Haifa Chemicals, Sasol, Israel Corp, Aramco, Mitsubishi Corp, Mitsui & Co, Enel, Titan Cement, Q8, Itochu, Pan Ocean Petroleum, Rosneft, Lafarge, EDF, OCP, Rosneft, Anglo American, Rio Tinto, Corus, Port of Rotterdam, ONE, Deutsche Bank, EON, Enel, Sonatrach, Sumitomo, Repsol YPF, Coca Cola, Marubeni, Arcelor Mittal

2. Michiel ten Hoopen

Title: Head of Advisory and Offset Development

Date of Birth: June 8, 1976

PROFESSIONAL HIGHLIGHTS:

Michiel is the Head of Advisory at ClearBlue, with over 15 years of in-depth experience on all aspects of the carbon markets. His extensive policy and practical trading experience provides clients with a unique perspective that is unparalleled in the market.

Michiel brings the following areas of expertise to this project:

- **Direct Management of a Cap & Trade Compliance Position.** Michiel was Head of Global Emissions at Vattenfall, where he was responsible for managing the compliance and offset position. Vattenfall was the second largest emitter in the EU-ETS with annual emissions over 90,000,000 tCO₂.
- **Extensive Experience in Consultancy and Capacity Building.** Michiel had worked in consultancy, advising governments, industrials and other organizations on Cap & Trade and offsets. Michiel led EcoSecurities' consultancy division, where he developed various corporate greenhouse gas strategies and championed climate change policy studies. He also has extensive experience with corporate and government capacity building, including developing and presenting at many GHG Cap & Trade workshops. Working for governments on various emission trading related regulatory documents has provided him with a thorough, integrated understanding of the institutional, regulatory and policy environments that affect carbon markets. He represented Vattenfall in IETA, the International Emissions Trading Association. With IETA, he presented in capacity building workshops in China and Taiwan, informing companies on how to operate in Cap & Trade systems that were newly implemented.
- **Expert Knowledge of Offset Development.** Michiel has worked globally on emission reduction projects with a wide variety of technologies such as industrial energy efficiency, renewable energy, landfill gas and biogas. His expertise in this area was recognized in his appointment as a member of the UNFCCC CDM Small-Scale Working Group Methodologies Panel for seven consecutive years.

EDUCATION

- Masters Degree, Economics, 2000. University of Groningen. Areas of interest: Macroeconomic Policy, Environmental Economics, International Trade Market Liberalization
- Masters Degree, International and European Law, 2002. University of Groningen. Areas of interest: International relations, Environmental law, Trade law, European law.
- SII Level 3 Certificate in Investments, 2007. Securities & Investment Institute, London, United Kingdom. Areas of interest: Financial Regulations and Derivatives.

PREVIOUS PROFESSIONAL EXPERIENCE

Vattenfall Energy Trading (Amsterdam, the Netherlands)

Head of Global Emissions, 2008 - 2015

Michiel was hired by Nuon Energy Trade & Wholesale (“Nuon”), which after being taken over by Vattenfall AB, became a part of Vattenfall Energy Trading (“VET”), a division within Vattenfall AB. Michiel led the Global Emissions desk, where he was responsible for building and managing the emissions team. Among his many tasks, he developed internal purchasing strategies, hedging strategies and risk programs as part of the internal compliance plan and updated them on a yearly basis. Michiel reported on implementation of the plan and significant changes to the plan to both management and the board of directors. He developed the overall business plan and strategy for the division, coordinating with other corporate functions. He was responsible for the Origination of CDM projects and the purchasing of offsets directly from CDM projects, in the negotiations for all related contracts, as well as technical reviews and the overall due diligence processes.

Selected accomplishments:

- Successfully integrated the Nuon and Vattenfall emission teams after the takeover;
- Sourced and managed a portfolio of over 200 offset projects that generated over 100 million offsets;
- Renegotiated long term offset contracts leading to profits over 30 million euros; and
- Led the Vattenfall team to be the first foreign entity to successfully transact in the Chinese domestic carbon market.

UNFCCC (Bonn, Germany)

Member of the CDM Small Scale Working Group, 2006 – 2014

While working for EcoSecurities, Barclays Capital, and Vattenfall, Michiel was elected into the UNFCCC CDM Small Scale Working Group for seven consecutive years. This Working Group is responsible for the baseline and monitoring methodologies for simplified procedures for Small Scale projects such as efficient cook stove projects, biogas projects, small renewable power projects, and energy efficiency projects. As part of this group, Michiel was responsible for developing new methodologies and responding to questions from project developers. While working with this panel, Michiel assisted in approving approximately 40 projects and provided guidance to over 100 individual projects.

Barclays Capital (London, United Kingdom)

Associate Director, Emissions, 2007- 2008

Michiel joined Barclays Capital in 2007 as Associate Director Emissions at the Environmental Products desk in the Commodities Division. Michiel was part of a team joining Barclays to build emission reduction origination capabilities where he was responsible for managing the structuring of complex agreements, setting up the infrastructure for emission reduction origination, working with the global sales force to get the primary offset transactions, advising the traders on the benefits and risks associated with the purchase of primary CERs, developing risk management tools, and the business development in selling CERs as an offset product.

Selected accomplishments:

- Set up the Barclays offset sourcing team
- Developed the infrastructure and procedures for originating offsets
- Developed the risk management and valuation model for primary offsets

EcoSecurities B.V. (The Hague, The Netherlands)

Principal Consultant 2002 - 2007

Michiel joined EcoSecurities in 2003, as a principal consultant in EcoSecurities' The Hague office. He led all emission reduction consultancy activities and was responsible for the CDM baseline and monitoring methodology development within EcoSecurities. Michiel was responsible for developing CDM baseline methodologies and CDM projects in the industrial, energy, and waste management sectors, as well as providing capacity building to governments and providing strategic advice to industry.

Please see section 5 for relevant consultancy experience

Foundation Joint Implementation Network (Paterswolde, the Netherlands)

Consultant, researcher 2000 - 2002

Michiel worked for the Joint Implementation Network (JIN) as a researcher and consultant. JIN is a research foundation specializing in climate change policy and the Kyoto Mechanisms. Michiel was assistant editor of the Joint Implementation Quarterly (JIQ), an international magazine on the Kyoto Mechanisms and worked on several research and consultancy projects, including the pioneering Dutch government purchasing program for carbon credits.

Please see section 5 for relevant consultancy experience

PUBLICATIONS:

ten Hoopen, Michiel, & Boyee, Veronique. 2004. "Joint Implementation and the Clean Development Mechanism", in Cyriel de Jong and Kasper Walet, eds. *A Guide to Emissions Trading, Risk Management and Business Implications*, Risk Books, pp. 59-98.

ERUPT, Ministry of Economic Affairs of the Netherlands, October 2001. *Operational Guidelines for Baseline Studies, Validation, Monitoring and Verification of Joint Implementation Projects, Volume 1: Introduction A guide for project developers and validation/verification bodies*, Version 2.0.

ERUPT, Ministry of Economic Affairs of the Netherlands, October 2001. *Operational Guidelines for Baseline Studies, Validation, Monitoring and Verification of Joint Implementation Projects, Volume 2a: Baseline Studies, Monitoring and Reporting, A guide for project developers*, Version 2.0.,

ERUPT, Ministry of Economic Affairs of the Netherlands, October 2001. *Operational Guidelines for Baseline Studies, Validation, Monitoring and Verification of Joint Implementation Projects, Volume 2b: Baseline Studies for specific project categories, A guide for project developers*, Version 2.0.

3. Nicolas Girod

Title: Head of Trading

Date of Birth: August 11, 1983

PROFESSIONAL HIGHLIGHTS:

Nicolas is the Head of Trading at ClearBlue Markets and has over 10 years of experience in the carbon markets. He has an intricate and broad understanding of the integration of the energy and carbon markets, having worked for banks and utilities as a risk manager, market analyst and trader.

Nicolas brings the following areas of expertise to this project:

- **Risk Management.** Nicolas worked in the Commodities Risk Department of Barclays Capital, one of the largest commodity markets investment banks in the world. While at Barclays Capital, Nicolas was in charge of pricing the market risk associated with structured commodities transactions. In order to effectively perform this function, he liaised with different stakeholders within the bank, including front office, legal, credit risk, trading, and sales. He developed excel models with excel VBA using statistical analysis and mathematical price simulation models to ensure that the bank did not exceed its credit limits while trading OTC.
- **Market and Data Analysis.** Nicolas has also worked for two European utilities (Eneco, Vattenfall) as a market analyst, supporting and recommending trading decisions. While in this function, Nicolas created several models, not only to forecast prices but also to trade energy products on a proprietary basis. He has built fundamental and algorithmic models on European Emissions, Power and Gas. He was also responsible for enhancing the internal communication of these companies by creating reports on market developments including daily scorecards and monthly fundamental reports. Nicolas has also recently completed a course in Big Data and Machine learning, further enhancing his modelling abilities.
- **Trading and Auction Experience.** Nicolas was a senior trader for Vattenfall, one of the biggest compliance entities in the EU carbon market, in charge of procuring ~ 90,000,000 tonnes of emissions compliance allowances annually, as well as millions of offsets. He was in charge of the overall carbon hedging strategy of the company, as well as the execution. Nicolas has traded futures, OTC forwards, options and participated in auctions. He is certified as an EEX exchange trader in Europe for the purposes of participating in allowance auctions and transacting in commodity futures, and has also completed his Series 3 National Futures Association exam in the US. He also has extensive experience trading foreign, power, oil and gas, and coal on a proprietary basis.

EDUCATION

- Master of Science in Electrical Engineering and Environment, 2007. Grande Ecole ESME Sudria, PARIS. Areas of interest: Environmental Management, Electrical machines, Analog/Digital Electronics, Probability Models for Engineering, Computer Programming.
- Bootcamp in Data science, 2015. NYC Data Science Academy. Areas of interest: Statistics, Algorithms, Big data analysis and visualization, Machine learning, Artificial Intelligence.

CERTIFICATIONS

- Series 3 – National Futures Association, 2016. Financial Industry Regulatory Authority.
- EEX Exchange Trader, 2012. European Energy Exchange.

PREVIOUS PROFESSIONAL EXPERIENCE

Evolution Markets (New York)

Environment and Energy Broker, January 2016 - May 2016

Nicolas worked as a European and North American Energy broker by using his extensive network he developed in the European market. He brokered trades on emissions, renewable certificates, oil and gas, coal and offered risk management solutions to its various portfolio of customers spanning from utilities to trading houses and banks. He also contributed to business development by assisting Evolution Markets broker its first gas option trade in the UK.

Vattenfall Energy Trading (Amsterdam, the Netherlands)

Senior Emissions Trader / Cross Commodity Analyst, 2012 - 2015

Recruited first as an analyst to support the senior trader, Nicolas evolved quickly as the main market facing emissions trader within the company. Nicolas was part of a team of two, responsible for sourcing (via Exchange, Auctions, OTC) the hedging needs of Europe's second largest emitter in the EU-ETS. In this capacity, Nicolas was a key contributor in the overall strategy and compliance position management and participated in the design and ongoing monitoring of the annual compliance plan. He managed the submission of the different compliance instruments to the EU-ETS registry. Nicolas established and maintained relationships with different counterparties (banks, utilities, industrials, brokers and analysts) in the EU-ETS market in order to structure and execute transactions. He was also mandated to execute proprietary trades, not only in emissions but also in gas, power and coal, which yielded substantial profits for 3 years (in excess of 5M Euros per year) by using a mix of technical and fundamental strategies. He was responsible for development of the trading strategy, and the process of the evaluation of the risk embedded in the carbon positions.

Selected accomplishments:

- Developed a CO₂ fundamental model which was used for both compliance instrument purchasing decisions;
- Enhanced internal knowledge of carbon market developments by sending weekly updates of the CO₂ fundamental model;
- Improved existing models to monitor and hedge the large carbon position.
- Initiated the use of options as a way to mitigate risks; and
- Developed the model to monitor and better understand the risk associated with Vattenfall's carbon positions.

Eneco Energy Trade (Amsterdam, the Netherlands)

Cross Commodity Analyst / Proprietary Trader 2008 - 2012

Nicolas was hired as an analyst/trader to help open a European gas trading desk focusing on the most liquid hubs of the UK and Netherlands. Nicolas was tasked to strengthen the analytical power of the team in order to profit from trends in the market. The position then evolved to a more cross commodity role in charge of maintaining a joint desks trading book. In addition to his trading tasks, he was responsible for monitoring the overall position of the energy trading desk, which included oil and gas, power, emissions and coal. He was tasked to ensure that the overnight positions remained within the risk management parameters. In order to accomplish this, Nicolas used various different risk management tools and techniques, such as stress testing, value at risk (VAR), liquidity risk analysis and concentration risk analysis on all daily positions. Nicolas reported his risk analysis to the Head of Trading in order to modify risk positions to conform within approved parameters. Nicolas championed the change in the process of assessing credit across the organization by introducing Potential Future Exposure parameters (PFE) instead of Mark to Market.

Selected accomplishments:

- Created fundamental supply and demand models in gas and power in order to assist the decision making process for the proprietary positions;
- Set up and managed a cross commodity proprietary book which contributed positively to the division's segmented income;
- Designed and developed the reports and the risk reporting standards for the organization; and
- Led an organization wide study in credit risk monitoring, prepared a report and presented an internal document that instigated a fundamental change in the policy for credit risk monitoring.

Barclays Capital (London, United Kingdom)

Quantitative Risk Analyst 2007- 2008

As part of the Commodities Credit Risk team, Nicolas maintained and created new quantitative models in order to monitor the PFE of the bank against counterparties in the commodities markets. He worked closely with the sales and structuring teams to price the credit risk in commodity transactions, and was responsible for identifying alternatives to reduce credit risk for specific transactions. His main focus area while at Barclays Capital was to support emissions trading and its associated risks, however he also provided support for in different commodity markets – both soft commodity markets and energy. He was also responsible for the monitoring, reporting and communication as to how market risk in different commodity markets was evolving over time.

Selected accomplishments:

- Developed the organization reporting tools and prepare weekly reports that were used by front office to understand how risk in different commodities was evolving and how it would impact new transactions as it relates to credit risk with their customers;
- Developed Excel VBA spreadsheets to monitor calculate, and compare risk in different commodities for use in structured products; and
- Worked in collaboration with sales to create new credit risk mitigating structures.

Fortis Bank (Belgium)

Desk Trader Assistant 2005 - 2006

Nicolas spent his gap year as an intern at the commodities desk, where he assisted the emission and energy traders for the development of various different transaction structures by preparing financial models to support decision making. As this was in the infancy of the carbon market in Europe, Nicolas also assisted the emissions sales desk in understanding new developments in the market and developed strategies to help compliance customers mitigate their carbon risk exposure.

Selected accomplishments:

- Developed the model that would consolidate all the different methods for gas pricing formulas;
- Developed Excel VBA spreadsheets to help pricing and hedging oil options;
- Modelled products pricing for emissions, oil, coal, gas formulas and foreign exchange; and
- Modelled carbon positions of customers and proposed transactions to mitigate and reduce by the use of futures, forwards or offsets.

4. Michael Berends

Title: Head of Carbon Sales

Date of Birth: June 29, 1976

PROFESSIONAL HIGHLIGHTS:

Michael is the Head of Sales at ClearBlue and has over 12 years of experience in Carbon Markets, in particular with Cap & Trade strategy, offset development and trading. Michael has executed thousands of carbon product deals, structuring transactions for offsets, allowances, and allowance related products in the primary and secondary carbon markets in over fifty countries.

Michael brings the following areas of expertise to this project:

- **Carbon Market Capacity Building.** As senior consultant at EcoSecurities, Michael provided carbon market capacity building for numerous governments and corporates. After EcoSecurities, Michael was part of a team specifically hired by Barclays Capital to set-up its offset origination capabilities, expand the bank's secondary EUA/CER sales, and build its overall carbon market capacity. At Barclays, Michael contributed in setting up the emissions sales capabilities of the bank, including day-to-day interactions with the Global Sales, Emissions Traders, Legal, Compliance and Project Finance divisions. At Vattenfall, the second largest EU-ETS compliance buyer, Michael and his team developed the company's emission origination and sales strategy, as well as its procurement capabilities.
- **Cap & Trade Compliance Sales and Transactions.** As manager at both Vattenfall and Barclays Capital, Michael was responsible for overseeing ongoing relationships and sales with compliance entities in Europe. He was also responsible for the risk management of the EU-ETS exposures. This included a portfolio of more than 1,000 emission compliance clients across the EU, including in the United Kingdom, Ireland, Romania, Italy, Greece, Hungary, Czech Republic, Austria, France, Spain, and Bulgaria.
- **Carbon Offset Project Origination, Development and Commercialization.** At EcoSecurities and Vattenfall, Michael led the global origination and development of carbon offset projects, including high-level negotiations with clients on suitable structures for procuring carbon offsets, as well as price and terms & conditions of the complex sales agreements. He has structured offset transactions in excess of €160,000,000 in value.

EDUCATION

- Masters Degree, Environmental Management, 2005. University of Amsterdam. Areas of interest: Emissions Trading, Sustainable Development, Corporate Social Responsibility, Environmental law, Environmental Policy.
- Master of Science Degree in Conservation Biology, 2003. University of Toronto. Areas of interest: Conservation Biology, Evolution, Ecology.
- Bachelor of Science, Honours Degree in Biology, 2000. University of Toronto. Areas of interest: Biology, Chemistry, Genetics, Evolution.

PREVIOUS PROFESSIONAL EXPERIENCE

Israel Chemicals Limited Group (Amsterdam, the Netherlands)

Energy, Global Manager, 2015 - 2016

As a Global Manager of Energy at the ICL Group, Michael was responsible for the procurement of energy for ICL sites globally, with a main focus on European sites. This responsibility consisted of over 50 sites across 6 continents and included the procurement and hedging of emissions, electricity, natural gas, fuel oil, water, waste management and all other related commodities and services. Furthermore, Michael was responsible for the Global Emissions Trading for the ICL Group, which included the EU-ETS strategy and the related compliance position management of two sites in Europe, as well as sites within emerging emissions trading schemes (e.g. China, Israel, Mexico, Brazil and USA).

Selected accomplishments:

- Developed emissions trading strategy at ICL;
- Structured a significant EUA/CER swap transaction for UK and Spain EU-ETS sites;
- Developed the framework for European natural gas transactions;
- Led to the development of ICL's Global and USA natural gas hedging strategy;
- Successfully negotiated an E-Storage agreement and project at ICL Cleveland Potash Mine in the UK.

Vattenfall Energy Trading (Amsterdam, the Netherlands)

Head of Structured Sales and Origination, 2008 - 2015

Michael was hired by Nuon Energy Trade & Wholesale ("Nuon"), which after being taken over by Vattenfall AB, became a part of Vattenfall Energy Trading ("VET"), a division within Vattenfall AB. As Head of Origination at VET, Michael managed Vattenfall's Emissions Origination team. Michael was responsible for growing the company's infrastructure for originating and managing a compliance portfolio of emission reduction projects, with the goal of increasing the carbon market profile of the company as an experienced and strong carbon credit (CER, ERUs and VERs) purchasing counterparty. This task included the development of and execution of a compliance strategy, a business plan, and creating internal and

external workflows. Michael coordinated all emission reduction project and carbon credit origination (CDM Projects and CERS) activities globally and included working with company sustainability teams to ensure environmental integrity of projects. Michael was responsible for the complete assessment of projects, including due diligence, environmental sustainability and client reputation. Furthermore, he was also responsible for the EU compliance Emissions Sales and Voluntary Offsets. He played a key role in business development, including developing new client relationships and managing ongoing relationships with compliance entities in Europe, specifically for the risk management of their EU-ETS exposures. This task included identifying new structured carbon products and carbon product derivatives and structuring the sales processes.

Selected accomplishments:

- Executed various carbon compliance instrument related contracts in excess of €120 million in value;
- Successfully developed the Compliance Emissions Sales strategy for Vattenfall, building strong and fruitful relationships with the main market players;
- Signing of the Pan Ocean Gas Utilization Project, which is the largest operating registered project in Africa, valued at over €80 million;
- Developed an extensive business network in Japan, comprising the major Japanese trading houses and utilities (i.e. Mitsubishi Corp, Mitsui & Co, Sumitomo, Marubeni), executing transactions in excess of €50 million; and
- Initiated the expansion of Vattenfall's third party structured emission sales and origination business in Europe, leveraging Vattenfall's customer base, cross commodity offerings and structured products.

Barclays Capital (London, United Kingdom)

Manager, Emissions Sales; Environmental Markets, 2007 - 2008

Michael was part of the Environmental Markets desk sales team in the Commodities division of the investment bank. He joined Barclays Capital as part of the team that was acquired to set-up its Emissions origination capabilities, expand the bank's secondary EUA/CER coverage and build its overall carbon market capacity. Michael helped develop Emissions sales capabilities at the bank, including day-to-day working with the Global Sales, Emissions Traders, Legal, Compliance and Project Finance divisions. He was responsible for technical & economic pre-feasibility studies for emission reduction projects, CER pricing, delivery risk assessment, pre-payment evaluation, Term sheet & ERPA development and negotiations. In addition, Michael managed the EUA/CER compliance sales in Southern Europe, building and maintaining client relationships, focusing on the development of tailored Emission Risk Management Strategies (Swaps, Repos, Options etc.), and day-to-day flow sales.

Selected accomplishments:

- Led structured Sales Missions to Italy to meet EU compliance clients for EUA/CER sales, including negotiation and closing of CER deal valued at over €50million;
- Led emission reduction project origination mission to Tunisia, Algeria, Senegal and the Ivory Coast for CDM origination activities, resulting in transactions valued at over €30million;
- Performed project assessment, negotiated term sheet & ERPA, and pricing for biomass waste to energy project in Ivory Coast;
- Led structured sales missions to Greece to meet EU compliance clients for EUA/CER sales; and
- Performed project assessment, client management, pricing and term sheet & ERPA negotiation for an Israeli N₂O CDM Project (Haifa Chemicals).

EcoSecurities (The Hague, the Netherlands)

Senior Consultant, 2005 – 2007

Michael was Senior Consultant at EcoSecurities Consultancy Services, providing analytic, environmental and economic advisory services for private and public sector clients, as well as internally, supporting the development of GHG reduction projects and GHG management strategies. Michael's tasks included the identification of consultancy opportunities, the development of consultancy proposals, the implementation of consultancy services, including project assessment development, the identification of new business opportunities, strategic corporate advice, and marketing & business development activities.

Please see section 5 for relevant consultancy experience

PUBLICATIONS

- Berends, M, T. Choudhury, J.Wade-Murphy., and J. Parreno, EcoSecurities, UK. 2007. Environmental and financial benefits of creating carbon credits from oil and gas operations. Hydrocarbon Engineering
- Berends, M and P.J. Steenbergen. 2006. "How the CDM Can Give Biomass a Boost?". BIOENERGY EUROPE 2006 – MARKETS AND FINANCE FOR BIOFUELS AND BIOMASS: 16th and 17th March. Café Royal, Central London

5. Selected Relevant Consultancy Experience

Michiel ten Hoopen

Report for Gasunie on the consequences of liberalization of the market for natural gas transport. In 2000, Gasunie NV, the main gas distribution and gas sales company in the Netherlands, was confronted with new regulations from the Dutch regulator for the gas and electricity markets, forcing it to open its gas transmission network to competitors. Michiel worked on a research project for Gasunie with the aim of analysing the possible consequences of these new regulations on the security of supply of natural gas in the Netherlands. His responsibilities included performing a market analysis of gas markets in various EU countries, interviewing staff at Ofgem, the regulator for the gas and electricity markets in the UK, developing possible future scenarios for the Dutch gas market given the changes in the legal framework, and writing parts of the final report and interacting with the stakeholders on the results. This final report led to discussions in Dutch parliament, where it was used by Gasunie in proceedings against DTe before the Hoge Raad (Supreme Court of the Netherlands) and it led to significant changes in the regulations proposed by DTe.

EU ETS strategy advice for Port of Rotterdam. As the largest port in Europe, the Port of Rotterdam was concerned how the EU-ETS might affect their competitive position vis-à-vis other European ports. As project manager Michiel prepared a strategy paper which provided a comparison of EU-ETS regulations in different EU countries and included an assessment of possible trading strategies under the EU-ETS, as well as possible services to Port of Rotterdam clients.

Developing CDM projects for Gas Natural in Brazil and Mexico. As project manager, Michiel led the development of several CDM projects for Gas Natural in Brazil and Mexico. This included an emissions reduction project at CEG in Rio de Janeiro, a Gas Natural subsidiary, which replaced old pipelines of the gas distribution grid, thereby reducing methane leakages. For this project, Michiel led the development of a new baseline methodology, which was submitted to the Methodology Panel in January 2006 and approved by the EB as “AM0043 : *Leak reduction from a natural gas distribution grid by replacing old cast iron pipes with polyethylene pipes*”. This methodology was amended for a new Gas Natural project in Mexico. The services to Gas Natural also included monitoring.

Developing a baseline methodology for Greenfield Anaerobic Digestion projects. For emission reduction projects in Indonesia and Malaysia, Michiel led the development of a new CDM baseline methodology that accommodated projects that did not have a waste water treatment system. This new methodology accommodates both new facilities and waste water that is disposed of untreated.

National CDM capacity building workshops in North Africa and the Middle East. Under the World Bank Mediterranean Environmental Technical Assistance Program (METAP) Regional Solid Waste Management Project, EcoSecurities organized a series of CDM capacity building workshops. Michiel prepared several presentations on the CDM procedures and the carbon market and organized the case studies at the workshops in Jordan, Syria and Egypt.

Developing a baseline methodology and PDD for REPSOL in Argentina. For a project at a REPSOL YPF refinery in Argentina, Michiel developed a new CDM baseline methodology and PDD. The project reduced GHG emissions by utilizing waste gas from the refinery that was flared. The new methodology established the reduction of fuel oil and natural gas consumption at the refinery, which is dependant not only on the amount of gas from the project itself, but also on the availability of natural gas during the year.

Technical assistance and capacity building in Malaysia. As part of a project financed by the Danish government (DANIDA), Michiel organized several capacity building workshops in Malaysia. He developed case studies and organized several presentations on the workings of the CDM in general and CDM opportunities in specific sectors, such as renewable energy, the oil and gas sector, and waste water treatment in the palm oil industry.

Developing CDM methodology for composting projects and commercialization of CERs for World Wide Recycling B.V. Michiel was part of a team hired to commercialize the CERs of the Matuail landfill site in Dhaka, Bangladesh in which WWR is majority owner. The project comprised of the design and implementation of a composting facility according to proven standards. In addition, the project aim was to realize the landfill gas extraction to be used for electricity generation in order to reduce over 200,000 tCO₂ per year. As client manager, Michiel coordinated activities related to the sales of the carbon credits. In addition, Michiel coordinated the development of a new CDM baseline and monitoring methodology for the composting facility. That methodology was submitted as NM0090, and approved by CDM Executive Board as AM0025.

Linking project based GHG emission reductions to the UK-ETS. Michiel was part of a team that researched the possibilities to sell carbon credits from GHG emission reductions projects in sectors that were not included in the UK trading system to participants that were in the trading system. His tasks included analysing the different sectors and interviewing project developers interested in the scheme from various sectors such as waste management, coal mine methane electricity production and the construction sector.

Developing a JI PDD for a power plant in Romania. Michiel managed the development of a PDD and developing a new baseline methodology for a large coal-fired power plant. The project involved the refurbishment of several units within the plant, leading to a significant reduction of the carbon emission factor. As no JI methodologies existed at the time and the project did not fit under the existing CDM methodologies, Michiel led the development of a new baseline methodology that used a stand-alone plant specific baseline as opposed to the emission factor for the national grid.

Developing baseline methodology and PDD for OCP waste energy recovery project in Morocco. For Groupe Office Cherifien des Phosphates in Morocco, Michiel developed NM0088, “Baseline methodology for electricity production from waste energy recovery in an industrial manufacturing process”, which was later incorporated in ACM0004, “Consolidated baseline methodology for waste gas and/or heat and/or pressure for power”.

CDM project development in Armenia for EBRD. Michiel managed a project for EBRD to develop CDM projects in Armenia. This involved the development of two hydro projects under the CDM, including the baseline studies and monitoring plans, and the training of a local consultant in CDM project development. Michiel presented recommendations to EBRD on setting up a larger emission reduction project support facility.

GHG advisory services for Group Machiels in Chile and Malaysia. For Group Machiels, a waste management company from Belgium with operations in South America and Asia, Michiel was responsible for the development of the CDM project documentation for five landfill gas capture projects. As project and client manager, Michiel’s role was to oversee project implementation and ensure quality control for all stages in the CDM project development. He had developed two PDDs for projects in Chile that were validated. Michiel also advised in the contract negotiations between Group Machiels and the landfill owners. For the projects in Malaysia, he performed a CDM eligibility analysis and calculations on expected emission reductions. He also coordinated the monitoring and commercialization of the carbon credits. The verification of the credits were subsequently approved.

Developing JI Procedures Manual in Bulgaria. As part of a capacity building project for the Danish Environmental Protection Agency (DEPA), Michiel was the client manager responsible for Bulgarian JI guidelines. This involved the introduction of formal JI procedures for the Bulgarian government for the approval of JI projects. Moreover, it included the preparation of guidelines for investors to raise awareness on JI within Bulgaria and to explain the Bulgarian procedures. The main outputs were an internal Procedures Manual for the Bulgarian JI Unit and a brochure for JI project developers. The Procedures Manual is currently in use in the Bulgarian JI Unit and forms the basis of the approval process.

Developing a Baseline and Monitoring Methodology for Project in the Cement Industry. Michiel was part of a team that provided advisory services for Nesher Cement Enterprises (Israel) in a joint venture with EcoTraders. Michiel was tasked with evaluating, structuring and transacting the CERs generated by the project. The project involved technology improvement in the cement plant that led to reduction in emissions by lowering the percentage of clinker in the manufactured cement. Michiel developed a new baseline methodology for technology improvement projects in the cement sector (involving reduction of clinker content and energy efficiency, NM106), which was incorporated in the Consolidated Methodology for Increasing the Blend in Cement Production (ACM005).

GHG advisory services for Lihir Geothermal Power Plant in Papua New Guinea. EcoSecurities was subcontracted by SMEC Engineers from Sydney, Australia to provide GHG advisory services for the Lihir Geothermal Power Plant. The project involved the development of a 50 MW geothermal power plant which will provide power for the Lihir Goldmine, managed by Rio Tinto. The emission reductions of the project were in excess of 2.5 million tCO₂ in 10 years. Michiel worked on the PDD development and developed a new baseline and monitoring methodology for renewable projects replacing a stand-alone plant, which was approved by the CDM Executive Board as AM0019.

PDD and Methodology Development for the Wigton Wind Farm in Jamaica. Working as carbon advisors for the Petroleum Company of Jamaica (PCJ) and RES Ltd (a UK based wind development company), EcoSecurities evaluated, structured, and transacted the CERs generated by the 20 MW Wigton Wind Farm. Michiel worked on the development of the PDD for the project and developed a baseline methodology for grid-connected renewable project, NM0012-rev. This methodology was incorporated in the Approved Consolidated Methodology ACM0002.

PDD Essaouira wind energy project. For ONE (Office National d'Electricité) in Morocco, Michiel prepared the PDD for the Essaouira project, a 60 MW wind energy project located in Cap Sim, Morocco. In order to construct the baseline Michiel analyzed the characteristics of the existing grid-connected electricity generating capacity in Morocco and the Moroccan power expansion plans.

Feasibility assessments of CDM landfill projects. Michiel was involved in EcoSecurities' business development of waste to energy projects in South Africa, Asia and Latin America. His work included the assessment of the feasibility of CDM projects, including the review of business plans, technical feasibility, financial analysis and organization capabilities. Michiel was also involved in preparation of subsidy proposals. He coordinated the submission of the proposal to the Dutch PSOM programme of Senter and advised in the commercialization of the carbon credits generated.

Revision of the ERUPT Guidelines. Michiel coordinated the development of the revised Guidelines for baseline studies, validation, monitoring and verification of Joint Implementation Projects of the Dutch ERUPT programme. ERUPT is a tender that invites project developers to sell ERUs from JI projects to the Dutch government. Michiel was responsible for reviewing the five JI projects selected in the first tender round of ERUPT (in Romania, Poland and the Czech Republic), reviewing projects that were not selected, and interviewing project developers and validators on their experiences in the first ERUPT round. Based on various expert inputs and providing substantive input himself, Michiel was responsible for revising the Guideline text. After this project he also advised the Dutch Council for Accreditation in their work in developing the revised Guidelines for Validation and Verification bodies.

PROBASE. Michiel participated in the PROBASE research team. PROBASE is an EU funded research project aimed at standardization of Joint Implementation and CDM baselines. His tasks included reviewing existing baseline methodologies and developing possible methods and procedures for standardization of baselines, additionality and leakage for different project categories. Michiel participated in internal meetings in Paterswolde, Karlsruhe and Marrakech, and an international workshop on baseline standardization in Groningen, the Netherlands.

Michael Berends

Management of the Qatar DNA team and emission reduction projects development for the State of Qatar. Michael was the Team Leader for the EcoSecurities team seconded to the Qatar Designated National Authority and Qatar Petroleum in Doha, Qatar. His responsibilities included the strategy and policy development of the Qatar DNA, the identification of emission reduction projects in Qatar, and the development of PDDs for identified projects. He was tasked to identify sectors with emission reduction potential by analysing market research studies, monitoring new methodologies proposed for EB approval, researching CO₂ emission sources and new technologies to abate emissions and to assess the carbon potential and feasibility of specific sectors. He was responsible to quantify the carbon potential of specific sectors and technology and to and to develop business models and plans for high priority sectors. He did so by undertaking research studies aim to quantify the size and location of potential sectors, assessing technology feasibility and screening projects' development potential.

Carbon market technical assistance and capacity building for Saudi Arabia. As part of a project proposal financed by the British government (GOF), Michael organized several Carbon Market capacity building workshops in Saudi Arabia for the development of the Designated National Authority. Michael developed case studies and did several presentations on the workings of the CDM in general, and also on the CDM opportunities in specific sectors, such as the oil and gas sector, fertilizer, cement and water desalination industries.

Development of the Al-Shaheen emission reduction project for Qatar Petroleum in Qatar. Michael was the team leader for the PDD development of the Al-Shaheen Gas Recovery and Utilization CDM project (AM0009). His role was to administer project implementation for all stages in the CDM project development including PDD development (additionality assessment, baseline development, monitoring plan, and stakeholder consultation), host country approval, validation, and registration of the project. This project annually generates 2.5 million CERs and was registered in May 2007, becoming the first CDM project in the Gulf Region (GCC).

Development of an emission reduction project for a SAPPI South Africa. Michael was responsible for the development of the CDM project for a large multi-national pulp and paper producer. His role was to administer project implementation for all stages in the CDM project development including PDD development (additionality assessment, baseline development, monitoring plan, and stakeholder consultation), host country approval, validation, and registration of the project. The CDM project involved a fuel switch part from fossil fuel to biomass at a boiler in the plant. The project was registered at the UNFCCC on February, 2007.

Emission reduction projects portfolio scan and PDD development for ESKOM: South Africa. Michael was responsible to identify the most financially beneficial CDM opportunities at the South African National utility, Eskom. This led to the development of a Hydro CDM project, where Michael's role was Project Manager. He developed the PDD for the hydro CDM project (ACM0002).

Development of a new UN emission reduction methodology (AM0043) and emission reduction projects for Gas Natural in Brazil. Michael was part of the team for the development of several CDM projects for Gas Natural in Brazil. This includes a CDM project at CEG in Rio de Janeiro, a Gas Natural subsidiary, which replaced old pipelines of the gas distribution grid, thereby reducing methane leakages. For this project, he was part of the team for the development of a new baseline methodology, which was approved by the Methodology Panel in January 2007 (AM0043: "*Leak reduction from a natural gas distribution grid by replacing old cast iron pipes with polyethylene pipes*"). Additionally, Michael was the lead for the PDD development of the Quimvale small-scale fuel switch project, which was registered at the UNFCCC on March 9th, 2007.

Review of a JI PDD and methodology for a district heating provider in Russia. Michael managed the review and development of a PDD for a district heating provider. The PDD was for a rehabilitation project that consists of the installation of heat exchanger stations with modern control equipment in all served buildings, replacement of the distribution piping network and installation of control equipment and upgrades of the boilers at the power plant. The PDD has since been submitted to the JI Supervisory Committee for Determination.

GHG advisory services for PEEREA (International Energy Efficiency Working Group).

Michael was the lead author of a report which examined the opportunities related both to the Kyoto Protocol flexibility mechanisms and the European Union Emission Trading System in fostering energy efficiency projects.



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Canada

Filed: 2016-11-15
EB-2016-0296
Exhibit 3
Appendix D
Page 1 of 44

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ClearBlue Markets Cap & Trade Services

Compliance Instrument Purchasing Strategy

Internal paper for Union Gas

November, 2016

Executive Summary

On September 26, the Ontario Energy Board (the “OEB”) released its “*Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities*” (the “OEB Framework”). Natural gas utilities are the “point of regulation”, which means they have Cap & Trade compliance obligations for both their facility-related emissions and customer-related emissions. For the purposes of reviewing and approving cost consequences of these obligations, the OEB requires compliance plans, which provide robust information on how Utilities plan to meet these obligations. For the first Cap & Trade compliance period (2017-2020)¹, the OEB Framework requires a 1-year compliance plan for 2017, followed by either a 3-year plan, or another 1-year plan for 2018 followed by a 2-year plan for 2019 and 2020.²

ClearBlue is providing Union with advisory services related to Union’s development of a 1-year compliance plan, as defined by the OEB, to meet its compliance obligation. Advisory services that ClearBlue is providing include: 1) recommendation of a compliance instrument purchasing strategy, 2) recommendation of an auction bidding strategy, and 3) capacity building for ongoing governance and monitoring of the compliance plan. ☒

As stated in the OEB Framework, the OEB’s assessment of the reasonableness of Compliance Plan in the “costs for recovery in rates will be guided by the following six principles: *cost-effectiveness, rate predictability, cost recovery, transparency, flexibility, and continuous improvement*.”

Compliance obligations are incurred as greenhouse gases are emitted during the compliance period. The first compliance deadline, when sufficient compliance instruments need to be in Union’s cap & trade accounts to cover emissions for the calendar years 2017 - 2020, is November 1st, 2021.³ During the 4 years of the compliance period, Union will need to keep track of, and report on, its compliance instrument purchasing (for simplification we refer to allowance purchasing below, see Section 3 for more on other available compliance instruments).

This paper develops the recommendation of Union’s strategy for the purchase of compliance instruments for the Ontario Cap & Trade market and follows the guidance from the OEB Framework. The main focus of the paper is on preparing recommendations for the initial 2017 Compliance Plan, but longer term considerations are also provided.

¹ Pursuant to s.3 of O. Reg. 144/16: The Cap and Trade Program (the “Regulation”) under *the Climate Change Mitigation and Low-carbon Economy Act, 2016*, c. 7 (the “Act”).

² See s. 5.1 of the OEB Framework.

³ See s.11 (1) of the Regulation.

Introduction

The Ontario Climate Change Plan legislation was approved on May 18, 2016 and the Final Cap & Trade Regulation was released on May 19, 2016. The Ontario government will start the first compliance period of its Cap & Trade emission trading program on January 1, 2017.

The Final Ontario Cap & Trade Regulation placed the “point of regulation” at the natural gas utilities, which means they are responsible for the Cap & Trade compliance obligations for both their facility-related emissions and customer-related emissions. For the purposes of reviewing and approving cost consequences of these obligations, the OEB requires Compliance Plans which provide ‘robust information’ on how Utilities meet these obligations.

[Redacted text block]

[Redacted text block]

[Redacted text block]



1. GHG Forecast

1.1. Volume Forecast

The Volume Forecast Sensitivity Document (See Annex 1) was prepared by Union and provided to ClearBlue on October 20th. Union’s 2017 GHG volume forecast will be used as a benchmark volume amount, and the forecast sensitivities will be used to consider uncertainties around the volume forecast and how these may impact the strategy. Drivers for volume uncertainties would include:

- Weather risk and associated variances from forecast
- Opt-in/Opt-outs
- Compressor fuel usage variances from forecast
- Unaccounted for gas (“UFG”) variances from forecast
- Economic growth (growth in industrial or residential gas demand)
- Effects of Demand Side Management (DSM) and other GHG reduction measures
- Variation in power load
- Variation in usage from both general service and contract customer classes

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **MONITORING AND REPORTING**

3
4
5 As 2017 is the first year for which Union is filing a Compliance Plan there are no actuals to
6 report. This section is not applicable for this filing, but will be completed in future submissions.

7
8 Union recognizes the importance of monitoring and reporting forms in order to inform the Board
9 of the execution of its Compliance Plan. In order to facilitate effective and efficient review of
10 this activity, Union proposes to work with the other utilities, through the working group, to
11 develop a standardized set of monitoring and reporting templates that would be included in the
12 2018 Compliance Plan. As recognized in the Framework¹, the working group would be an
13 opportunity to define reporting requirements and establish performance metrics used to monitor
14 the utilities' Compliance Plans. This process will also allow the utilities the opportunity to reflect
15 any relevant feedback on the 2017 Compliance Plans from the Board into the monitoring and
16 reporting forms.

17
18 To assist in initiating this process, Union has examined monitoring forms that are included in
19 other jurisdictions, in particular California. Considering the applicability of these forms to
20 Ontario's cap-and-trade program and the requirements as outlined in the Framework, Union has

¹ Framework, p. 37

1 developed two samples which could be used as a starting point for developing standardized
2 reporting forms:

- 3 • Schedule 1 is a summary of compliance instrument purchases, total cost, cost per tonne,
4 and weighted average cost per tonne. This is similar to Exhibit 3, Schedule 1 which
5 provides the same information on a forecast basis. This schedule also allows for the
6 comparison of forecast to actual activity.
- 7 • Schedule 2 provides greater detail for the allowance auction component of Schedule 1,
8 and provides transaction date, bid quantity, bidding price, settlement quantity and price,
9 and total cost.

10

11 Union also expects that the content of the forms may be accompanied by qualitative analysis and
12 discussion unique to each utility, in order to provide greater context and explanation as to the
13 data reported.

14

15 In keeping with the Framework, Union believes the auction confidential and market confidential
16 information contained in the monitoring and reporting forms should be strictly confidential, and
17 will not be filed publicly.

18

19 Through discussion with the other utilities and the Board, Union would expect these samples to
20 change and evolve into a standardized template for future filings. Union also expects that these
21 standard reporting forms may change over time as the utilities gain greater experience in the cap-

- 1 and-trade program. This will be a reflection of the Board's guiding principle of continuous
- 2 improvement.

UNION GAS LIMITED
 Auction Transaction Summary
 for activity in the 12 month period ending December 31, 2017

	(a)	(b)	(c)	(d)	(e)	(f)
2017						
Line No.	Auction date *	Bid Quantity (tonne of CO2e)	Bid price (CAD)	Settlement Quantity (tonne of CO2e)	Settlement price (CAD/tonne of CO2e)	Cost (CAD) (f) = (d) x (e)
1	Mar, 2017	-	-	-	-	-
2	Mar, 2017	-	-	-	-	-
3	Mar, 2017	-	-	-	-	-
4	Total/Average	-	-	-	-	-
5	June, 2017	-	-	-	-	-
6	June, 2017	-	-	-	-	-
7	June, 2017	-	-	-	-	-
8	Total/Average	-	-	-	-	-
1	Sept, 2017	-	-	-	-	-
2	Sept, 2017	-	-	-	-	-
3	Sept, 2017	-	-	-	-	-
4	Total/Average	-	-	-	-	-
5	Dec, 2017	-	-	-	-	-
6	Dec, 2017	-	-	-	-	-
7	Dec, 2017	-	-	-	-	-
8	Total/Average	-	-	-	-	-
9	Grand Total/Average	-	-	-	-	-

* Auction dates are provided illustratively

1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **CUSTOMER OUTREACH**

3
4 Union has, and will continue, to place a strong emphasis on customer outreach and information
5 as these are essential in ensuring customers fully understand the provincial cap-and-trade
6 program, the impact of the program on their bills and how they can personally manage their
7 GHG emissions and resulting bill impacts. To achieve this, Union has created a cap-and-trade
8 communications plan that has been continually updated based on customer insight and feedback.
9 Union has gained insight and feedback through various sources including a survey that was
10 completed in October 2016 to assess customers' base understanding of cap-and-trade. This
11 survey indicated that 60% of Union's residential customers have heard about cap-and-trade but
12 that only 9% of all general service customers are aware that cap-and-trade is starting on January
13 1, 2017. Additional surveys are scheduled for both December 2016 and March 2017. Union's
14 cap-and-trade communications plan will continue to evolve as the cap-and-trade program is
15 implemented and further insight is gained.

16
17 As part of its communications plan, Union is using multiple targeted activities to reach each
18 customer group, including general service, contract rate customers and gas-fired generators.
19 Some examples of these targeted activities include cap-and-trade bill inserts, dedicated
20 webpages, and call centre representative training as well as using routine customer discussions
21 and meetings to provide relevant cap-and-trade information. Please see Exhibit 5, Appendix A,
22 for communication activity details.

1 For cap-and-trade communication activities included in Appendix A, Union uses messaging
2 selected from a set of key messages. The messaging chosen is based on both the purpose of the
3 communication activity as well as the target audience. The set of key messages was created and
4 discussed with Enbridge Gas Distribution (“Enbridge”) to ensure consistency across both
5 utilities, as well as across Union’s own communication activities. In addition, this set of key
6 messages helps ensure that the Board’s four key objectives are achieved. These four objectives
7 are listed below, and following are excerpts from messaging that Union has used or plans to use
8 within communication activities to achieve the objective. These key messages will evolve as
9 required during cap-and-trade implementation and beyond.

10

11 The Board’s Four Objectives and Union’s Messaging

12 *Objective 1: Build customers’ awareness of the government’s climate change actions, including*
13 *cap-and-trade*

14

15 *Union’s Key Messages:*

- 16 • The provincial government has introduced a cap-and-trade program effective January 1,
17 2017. The plan caps the amount of GHG emissions that Ontario homes and businesses
18 are allowed to emit, and lowers that limit over time.
- 19 • Funds generated by the cap-and-trade program will be used to support the Ontario
20 Government’s CCAP.
- 21 • Ontario's CCAP supports using funds generated by the cap-and-trade program to promote
22 low-carbon energy solutions.

1 *Objective 2: Explain the Utilities' role in obtaining emissions allowances and collection of*
2 *related costs, both for facility-related and customer-related emissions*

3

4 *Union's Key Messages:*

5 • Under Ontario's cap-and-trade program, Union is required to buy emission allowances for
6 the natural gas your home or business consumes, as applicable. This cap-and-trade cost
7 will be added to the delivery charge on your natural gas bill.

8 • In January 2017, the price will likely be about 3.3 cents per m³ of natural gas you use.
9 The cost will depend on how much gas you use, but for the average Ontario household,
10 the additional annual cost is estimated to be about \$70 to \$80 in 2017. Union expects the
11 cost could increase over the long term as the cap on GHG emissions is lowered.

12 • Messaging specific to large volume/contract customers:

13 ○ Some businesses will buy their own emission allowances (cover their own
14 obligation). Businesses emitting more than 25,000 tonnes of CO₂ equivalent
15 (CO₂e) annually (about 13 million m³ of natural gas, assuming natural gas is the
16 only source of emissions) will be required to buy their own emission allowances.

17 Those emitting between 10,000 tCO₂e and 25,000 tCO₂e (five million and 13
18 million m³ of natural gas emissions) have the option of purchasing their own
19 emission allowances or having Union buy emission allowances on their behalf
20 and recovering these costs on their natural gas bill.

- 1 ○ Mandatory participants: the delivery rate includes the Ontario government's cap-
2 and-trade costs related to carbon emissions from the natural gas that we use to
3 deliver natural gas to your business.

4

5 *Objective 3: Understanding of regulatory review/approval of Utility compliance costs that occur*
6 *before customers are charged*

7

8 *Union's Key Messages:*

- 9 • The Board will review and approve cap-and-trade costs.
- 10 • If the price of emissions allowances changes, the charge on your bill will be adjusted
11 accordingly, just as it is for other annual rate changes.
- 12 • Large volume/contract customers - Union has removed the cap-and-trade costs from its
13 2017 rates application (EB-2016-0245) and will file to recover them in its 2017
14 Compliance Plan (as per this Application).

15

16 *Objective 4: Customer information on how to manage GHG emissions and reduce bills by*
17 *reducing gas consumption*

18

19 *Union's Key Messages:*

- 20 • Because emission allowances are charged per cubic metre, a customer's total cost of cap-
21 and-trade depends on the amount of natural gas used. Union has a wide range of energy

1 saving programs and incentives to help homes and businesses improve their efficiency
2 and to cut costs.

- 3 ○ Residential customers can lessen the impact of cap-and-trade by taking advantage
4 of Union's energy efficiency incentives and rebates; details can be found at
5 uniongas.com/savemoney.
- 6 ○ Business customers can reduce the impact of cap-and-trade on their bottom line
7 by taking advantage of Union Gas rebates on high efficiency equipment; details
8 can be found at uniongas.com/savemoneyandenergy.

9
10 In addition to the above messaging, when cap-and-trade costs take effect, Union will include a
11 description on all general service customer bills and on rate schedules.

12
13 *General Service bills:* Union will include a static description similar to the following:

14 "Delivery includes the cost of delivering natural gas to you through our distribution pipe system.
15 It also includes the Ontario government's cap-and-trade costs related to carbon emissions from
16 the natural gas you use and that we use to deliver it to you. Visit uniongas.com/capandtrade for
17 more information."

18
19 *Rate Schedules:* Union has included a footnote on the delivery line item that describes that cap-
20 and-trade costs are included. Rate schedules are posted online and are updated whenever rate
21 changes occur. An example of the cap-and-trade footnote description included on the Union
22 South Rate M1 rate schedule is as follows:

1 *Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation

2 costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

3

Communication Activities Completed or Planned as of November 15, 2016

Activity	Description	Audience	Date of Execution
Bill Inserts Residential	<p>Residential Intouch newsletter bill insert</p> <p>This newsletter insert is included in the residential bill each month. It is used to educate customers on relevant energy related information.</p> <p><i>See Appendix B for bill inserts created as of Nov 15, 2016</i></p>	~1.4 million customers	<p>Sep 2016 Oct 2016 Nov 2016</p> <p>Dec 2016 to March 2017, inserts are planned</p> <p>Apr 2017 onward as required</p>
Bill Inserts Small/ Medium Business	<p>Business Energylink newsletter bill insert</p> <p>This newsletter insert is included in the small to medium business bill each month. It is used to educate customers on relevant energy information.</p> <p><i>See Appendix C for bill inserts created as of Nov 15, 2016</i></p>	~115,000 small and medium business customers	<p>Sep 2016 Oct 2016 Nov 2016</p> <p>Dec 2016 to March 2017, inserts are planned</p> <p>Apr 2017 onward as required</p>
Bill Message Residential and Small/ Medium business	<p>This monthly educational bill message is included on customers' paper and/or ebill, and it is used to inform customers of energy related information, such as cap-and-trade.</p> <p>There is both a targeted residential bill message and a targeted business bill message.</p>	<p>~1.4 million customers</p> <p>AND</p> <p>~115,000 small and medium business customers</p>	<p>Sep 2016 Oct 2016 Nov 2016</p> <p>Dec 2016 to March 2017 bill messages are planned</p> <p>Apr onward as required</p>
Website	The cap-and-trade section of Union's website was created to educate customers about cap-and-trade and how they can help mitigate costs.	~1.2 million residential customers AND	<p>Jul 2016 - cap-and-trade section on Union's website launched</p> <p>Ongoing – The cap-and-trade webpages have</p>

	A general cap-and-trade landing page, as well as a specific residential and business webpage, were created to provide more targeted messages to both of these customer groups.	~115,000 small and medium business customers	been, and will be continually updated with new content
Call centre	Call centre representatives answer calls/ questions about customers' account and bill, as well as questions about general energy related issues, such as cap-and-trade	~1.2 million residential customers AND ~115,000 small and medium business customers	Call centre staff received training on the key cap-and-trade messages to reference during conversations with customers; this set of key messages has evolved, and will continue to evolve as cap-and-trade is implemented
Social media: Facebook and Twitter	Facebook/Twitter posts are used to provide information on company and energy related issues, such as cap-and-trade. These posts typically direct customers to the appropriate URL for more details.	~Followers: Facebook: 2,200 Twitter: 2,550 ~Total impressions: 7,180	Sep 2016 Oct 2016 Nov 2016 Dec 2016 to Mar 2017 bill messages are planned Apr onward as required
Enerline / Factsline email newsletter	This email newsletter is sent, as required, to both large contract customers and energy marketers to inform them of relevant rate and service changes. This newsletter provides links through to Union's website for more details, as well as to the Board's website for any relevant rate applications.	Enerline North Newsletter: 138 recipients Enerline South Newsletter: 520 recipients Factsline Energy Marketer Newsletter: 245 recipients	Sep 29, 2016 – cap-and-trade notification Oct 18, 2016 – notification of refiling of rates application Additional newsletters will be sent as required
Ongoing Customer Discussions	In routine/ongoing customer discussions and meetings, Union's Account Managers will provide	~115,000 small and medium	Ongoing

and Meetings	customers with relevant cap-and-trade related information.	business customers	
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Residential Bill Inserts Created as of November 15, 2016

September 2016 Residential Bill Insert

The graphic is a newsletter insert for September 2016. It features a top banner with a forest scene on the left and a dog on the right. The dog is labeled 'Red' and 'SEPTEMBER 2016'. Below the banner is the 'intouch' logo with the tagline 'customer information newsletter'. To the right of the logo is a red box with the text 'What cap and trade means to you Dig safely – it's the law'. The main title is 'Understanding the cost of cap and trade'. Below this is a text block about the Ontario government's new cap-and-trade program starting on Jan. 1, 2017, accompanied by a small image of a lake. The text explains that the program is designed to fight climate change by putting a price on greenhouse gas (GHG) emissions. It states that Union Gas will recover the costs on your natural gas bill, and that the total increase to your natural gas bill is expected to be about \$70 to \$80* in 2017. It also provides a link to uniongas.com/capandtrade for more information. At the bottom, there is a section titled 'Reduce the cost of cap and trade' which suggests taking advantage of energy efficiency rebates and provides a link to uniongas.com/savemoney. A small footnote at the bottom states: '*Based on typical residential household use of 2,200 m³ of natural gas/year and an expected emission allowances cost of 3.3 cents per m³'. The 'uniongas' logo is at the bottom left, with the tagline 'A Spectra Energy Company'.

SEPTEMBER 2016

Red

What cap and trade means to you Dig safely – it's the law

intouch
customer information newsletter

Understanding the cost of cap and trade

The Ontario government's new cap-and-trade program will come into effect on Jan. 1, 2017.

The program is designed to fight climate change by putting a price on greenhouse gas (GHG) emissions which are created when natural gas is burned. The total amount of emissions allowed in Ontario will be capped and reduced over time.

Union Gas is required to purchase emission allowances for the natural gas you use when heating your home and water. Union Gas will recover the costs on your natural gas bill. **The total increase to your natural gas bill is expected to be about \$70 to \$80* in 2017.** This incremental cost will depend on how much gas you use. We expect the cost could increase over time as the cap on GHG emissions is lowered. The Ontario Energy Board will review and approve cap and trade costs.

You can find out more about how cap and trade will affect you at uniongas.com/capandtrade.

Reduce the cost of cap and trade
You can lessen the impact of cap and trade on your household budget and reduce your natural gas bill by taking advantage of Union Gas energy efficiency rebates. Visit uniongas.com/savemoney for more details.

*Based on typical residential household use of 2,200 m³ of natural gas/year and an expected emission allowances cost of 3.3 cents per m³

uniongas
A Spectra Energy Company

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1

October 2016 Residential Bill Insert



The graphic features a top banner with two images: on the left, a family of four (a man, a woman, and two children) is shown in a park-like setting with many fallen yellow and orange leaves, suggesting autumn. On the right, there are several pumpkins, one of which is white and prominent. The text 'OCTOBER 2016' is printed in white on a dark red background in the top right corner of the banner.

 **intouch**
customer information newsletter

Cap and trade facts
.....
Check fuel-burning
equipment
.....
Call before clearing
the sewer

Cap and trade comes into effect on January 1, 2017



A photograph of a family of four sitting on a green sofa in a living room. A man is on the left, a woman on the right, and two children are in the middle. They are all looking towards the camera.

- The provincial government's cap-and-trade program puts a price on greenhouse gases (GHG) emitted by Ontario homes and businesses.
- Union Gas is required to buy emission allowances for the natural gas you use in your home and to pass this cost on to you. These costs will be included on your natural gas bill.
- The added cost is expected to be about **\$70 to \$80 per household in 2017*** and to increase over the long term as the cap on GHG emissions is lowered.
- The actual incremental cost will depend on how much natural gas you use.
- This additional cost will be included in the Delivery charge on your natural gas bill.
- Union Gas can help you reduce the cost of cap and trade, and lower your natural gas bill, by improving the energy efficiency of your home. Visit uniongas.com/savemoney to find out how.

To learn more about cap and trade, please go to uniongas.com/capandtrade.

*Based on typical residential household use of 2,200 cubic metres (m³) of natural gas/year and an expected emission allowance cost of 3.3 cents/m³ of gas.


 **uniongas**
A Spectra Energy Company

2


3

1

November 2016 Residential Bill Insert



NOVEMBER 2016



Manage cap-and-trade costs
.....
Keep your meter clear

How to reduce the impact of cap and trade on your bill

A quick recap

The Ontario government's cap-and-trade program is starting on Jan. 1, 2017. Union Gas is required to buy emission allowances for the natural gas you use in your home and will recover these costs on your gas bill.

This means that you'll see an annual increase of about \$70 to \$80 in your natural gas costs for 2017* – an added cost that's expected to increase in the long term as the cap on greenhouse gas emissions is lowered.

To find out more about how cap and trade will affect you, visit uniongas.com/capandtrade.

Keeping costs down


The actual impact of cap and trade on your bill will depend on how much natural gas you use. You can reduce the cost by improving the energy efficiency of your home.


- Change or clean your furnace filter every month or two to keep it running efficiently.
- Install a programmable thermostat, which could save you up to \$100 every year.
- Caulk and weather strip your windows and doors. It's an easy way to increase your home's energy efficiency by 10 to 15 per cent.

Remember: even with the added costs of the Ontario government's cap-and-trade program, you're still saving up to \$2,500 a year by using natural gas rather than electricity, propane or oil to heat your home and water.

To learn more about Union Gas money-saving tips, energy-efficiency programs and rebates, visit uniongas.com/savemoney.

*Based on typical residential household use of 2,200 cubic metres (m³) of natural gas/year and an expected emission allowance cost of 3.3 cents/m³ of gas



 uniongas
A Spectra Energy Company

2

1 **Small Business Bill Inserts Created as of November 15, 2016**

2 **September 2016 Small Business Bill Insert**

3
4 **Front**

Back

5
6 **energylink**

SMART IDEAS
FOR BUSINESS
SEPTEMBER 2016

7
8 **What to expect
9 with cap and trade**



14 The Ontario government's cap-and-trade program comes into effect on Jan. 1, 2017. The program is designed to fight climate change by putting a price on greenhouse gas (GHG) emissions, which are created as a result of burning natural gas. The total amount of emissions allowed in Ontario will be capped and reduced over time.

15 Union Gas is required to purchase emission allowances for the natural gas your business consumes. Union Gas will recover the costs on your natural gas bill. The price is estimated to be about 3.3 cents per m³ in 2017, and we expect the cost could increase over time as the cap on GHG emissions is lowered.

16 The total incremental cost to your business will depend on how much gas you use. The Ontario Energy Board will review and approve cap and trade costs.

17
18
19
20
21
22 **Cap and trade will add about 3.3 cents per m³ to your Union Gas bill in 2017. The total cost to your business will depend on how much gas you use.**

 **uniongas**
A Spectra Energy Company

5
6 **Reduce the impact
7 of cap and trade on
8 your bottom line**



You can lessen the impact of cap and trade and reduce your energy bills by taking advantage of Union Gas rebates on high efficiency equipment. Find the full range of incentives that pay you to save at uniongas.com/savemoneyandenergy.

**FIND OUT MORE ABOUT
THE CAP-AND-TRADE PROGRAM.**

Visit uniongas.com/capandtrade
for more information.

enersmartBUSINESS

Visit uniongas.com/business
and profit from our expertise.

1 **October 2016 Small Business Bill Insert**

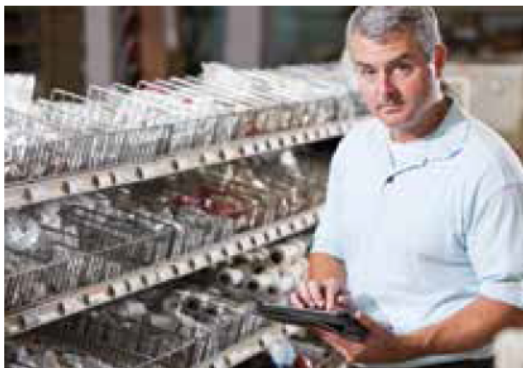
2 Front

Back

3 **energylink**

SMART IDEAS
FOR BUSINESS
OCTOBER 2016

4
5
6 **Cap and trade**
7 **comes into effect**
8 **on Jan. 1, 2017**



15 **Understanding cap and trade**

- 16
- The Ontario government's cap-and-trade program will put a price on greenhouse gases (GHG) emitted by homes, businesses and industries.
 - Union Gas is required to buy emission allowances for the natural gas you use. Union Gas will recover these costs on your natural gas bill.
 - This additional cost will be included in the Delivery charge on your natural gas bill.
- 17
18
19

20  **uniongas**
A Spectra Energy Company

What will cap and trade cost you?

- In 2017, emission allowances are expected to cost about 3.3 cents per cubic metre of natural gas you use.
- Customers buying gas from energy marketers will also pay this charge.
- The price for emission allowances is expected to increase over the long term, as the cap on GHG emissions is lowered.
- The total cost of cap and trade to your business will depend on the amount of natural gas you use.
- You can lessen the impact on your energy bill by taking advantage of efficiency rebates and incentives at uniongas.com/savemoneyandenergy.

To find out more, go to uniongas.com/capandtrade.

21 **Fuelling a strong,
low-carbon economy**



Natural gas is an important part of a balanced solution for a cleaner, stronger Ontario. Access to a reliable and plentiful supply of low-cost, low-emission energy is essential to commercial and

Industrial operations that support thousands of direct and indirect jobs. As a dependable partner to renewable energies such as wind and solar, natural gas meets both our growing energy needs and environmental targets.

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November 2016 Small Business Bill Insert

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SMART IDEAS
 FOR BUSINESS
 NOVEMBER 2016

What cap and trade means for your business



- The Ontario government's cap-and-trade program comes into effect Jan. 1, 2017.
- Union Gas is required to buy emission allowances for the natural gas you use and will recover these costs on your gas bill.
- Emission allowances are expected to cost about 3.3 cents per cubic metre of natural gas next year, and increase long-term as the cap on greenhouse gas (GHG) emissions is lowered.
- All cap-and-trade costs are reviewed and approved by the Ontario Energy Board.
- The amount you pay will depend on how much natural gas you use.
- You can reduce its impact – take advantage of energy efficiency rebates and incentives at uniongas.com/savemoneyandenergy.

Learn more about cap and trade at
uniongas.com/capandtrade.

uniongas
 A Spectra Energy Company

Reading your Union Gas bill

uniongas		Your Union Gas bill	
A Spectra Energy Company		August 21, 2016 to September 20, 2016	
JANE CUSTOMER			
New Union Gas charges			
For questions about the charges below, call Union Gas at 1-800-774-3111.			
Charges for the period August 21, 2016 to September 20, 2016			
1 Gas used	1119.051 cubic metres @	10.1666¢	113.77
2 Gas price adjustment	1119.051 cubic metres @	-0.4420¢	-4.95
3 Transportation to Union Gas	1119.051 cubic metres @	4.0983¢	45.86
4 Storage	1119.051 cubic metres @	0.6161¢	6.89
5 Delivery	1119.051 cubic metres @	4.0221¢	45.01
6 Delivery price adjustment:	1119.051 cubic metres @	0.6649¢	7.44
Monthly charge			70.00
Total new charges this billing period			\$284.02

Your cap-and-trade cost will be included in the Delivery charge every month. Here's a quick overview of the items on your bill:

- 1 Gas used:** The commodity cost for the natural gas your business consumed in the past month, passed on to you without mark-up. You pay what we pay.
- 2 Price Adjustment lines:** A credit or charge to account for differences in forecast and actual costs.
- 3 Transportation:** The cost to transport natural gas from where it's produced to our facilities in Ontario.
- 4 Storage:** The cost of storing natural gas so it's available when you need it.
- 5 Delivery:** The cost of delivering natural gas to your business through our distribution pipe system.
Starting in January, this will also include the cap-and-trade costs.
- 6 Monthly charge:** A fixed rate that partially covers operational costs of maintaining a safe gas distribution system and includes meter readings, customer service and 24-hour emergency response.

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1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **DEFERRAL AND VARIANCE ACCOUNTS**

3
4 Existing Deferral and Variance Accounts

5 Union has an existing deferral account, the Greenhouse Gas Emissions Impact Deferral
6 Account (Account No. 179-152). It was approved by the Board on April 7, 2016 in EB-2015-
7 0367. The account enables Union to record costs that it incurs related to the Ontario
8 Government's Cap-and-Trade program.

9
10 Deferral and Variance Account Balances

11 Union will bring forward the 2016 balance in Account No. 179-152 for disposition with its
12 2016 non-commodity deferral account disposition proceeding in 2017. As of October 31,
13 2016 the balance in the account was approximately \$1.3 million of costs to prepare for cap-
14 and-trade implementation.

15
16 New Deferral and Variance Account Request

17 Union requests approval of the following deferral accounts to separately track the variance
18 between the actual costs incurred related to the customer-related GHG obligation cost and the
19 facility-related GHG obligation cost and the amount collected through rates:

- 20 • Greenhouse Gas Emissions Compliance Obligation – Customer-Related Deferral
21 Account (Account No. 179-154)

- 1 • Greenhouse Gas Emissions Compliance Obligation – Facility-Related Deferral Account
2 (Account No. 179-155)

3
4 Please see Exhibit 6, Appendix A, for the new draft accounting orders.

5
6 Union is requesting the new deferral accounts in addition to the Greenhouse Gas Emissions
7 Impact Deferral Account. At the time of Union’s initial deferral account request, the details of
8 the cap-and-trade regulations were not known. Since receiving Board approval for the deferral
9 account, the cap-and-trade regulations have been finalized and the Board has provided its July
10 28, 2016 determination of the treatment of customer-related and facility-related costs as well as
11 the Framework. Accordingly, Union is requesting the new deferral accounts to independently
12 track the customer-related and facility-related obligation costs, of which the balances will be
13 subject to different allocation methodologies. Union will continue to use the existing account to
14 record administrative costs associated with cap-and-trade until such time as those costs are
15 incorporated into rates and the updated Greenhouse Gas Emissions Impact Deferral Account
16 accounting order in Exhibit 6, Appendix A, reflects this.

17
18
19

DRAFT

UNION GAS LIMITED

**Accounting Entries for
Greenhouse Gas Emissions Compliance Obligation – Customer-Related
Deferral Account No. 179-154**

Account numbers are from the Uniform System of Accounts for Gas Utilities, Class A prescribed under the Ontario Energy Board Act.

Debit	-	Account No.179-154 Other Deferred Charges – Greenhouse Gas Emissions Compliance Obligation – Customer-Related
Credit	-	Account No. 579 Miscellaneous Operating Revenue

To record, as a debit (credit) in Deferral Account No. 179-154, the variance between actual customer-related obligation costs and customer-related obligation costs recovered in rates as approved by the Board.

Debit	-	Account No.179-154 Other Deferred Charges – Greenhouse Gas Emissions Compliance Obligation – Customer-Related
Credit	-	Account No. 323 Other Interest Expense

To record, as a debit (credit) in Deferral Account No. 179-154, interest on the balance in Deferral Account No. 179-154. Simple interest will be computed monthly on the opening balance in the said account in accordance with the methodology approved by the Board in EB-2006-0117.

DRAFT

UNION GAS LIMITED

**Accounting Entries for
Greenhouse Gas Emissions Compliance Obligation – Facility-Related
Deferral Account No. 179-155**

Account numbers are from the Uniform System of Accounts for Gas Utilities, Class A prescribed under the Ontario Energy Board Act.

Debit	-	Account No.179-155 Other Deferred Charges – Greenhouse Gas Emissions Compliance Obligation – Facility-Related
Credit	-	Account No. 579 Miscellaneous Operating Revenue

To record, as a debit (credit) in Deferral Account No. 179-155, the variance between actual facility-related obligation costs and facility-related obligation costs recovered in rates as approved by the Board.

Debit	-	Account No.179-155 Other Deferred Charges – Greenhouse Gas Emissions Compliance Obligation – Facility-Related
Credit	-	Account No. 323 Other Interest Expense

To record, as a debit (credit) in Deferral Account No. 179-155, interest on the balance in Deferral Account No. 179-155. Simple interest will be computed monthly on the opening balance in the said account in accordance with the methodology approved by the Board in EB-2006-0117.

UPDATED

UNION GAS LIMITED

**Accounting Entries for
Greenhouse Gas Emissions Impact Deferral Account
Deferral Account No. 179-152**

Account numbers are from the Uniform System of Accounts for Gas Utilities, Class A prescribed under the Ontario Energy Board Act.

Debit - Account No.179-152
 Other Deferred Charges – Greenhouse Gas Emissions Impact Deferral Account

Credit - Account No. 728
 General Expense

To record, as a debit (credit) in Deferral Account No. 179-152, the administrative costs associated with the impacts of provincial and federal regulations related to greenhouse gas emission requirements.

Debit - Account No.179-152
 Other Deferred Charges – Greenhouse Gas Emissions Impact Deferral Account

Credit - Account No. 323
 Other Interest Expense

To record, as a debit (credit) in Deferral Account No. 179-152, interest on the balance in Deferral Account No. 179-152. Simple interest will be computed monthly on the opening balance in the said account in accordance with the methodology approved by the Board in EB-2006-0117.

1 **UNION GAS LIMITED 2017 CAP-AND-TRADE COMPLIANCE PLAN**

2 **COST RECOVERY**

3
4 The purpose of this evidence is to address the proposed changes to Union's delivery and
5 transportation rates associated with the cap-and-trade program.

6
7 Union proposes to incorporate customer-related obligation costs and facility-related obligation
8 costs in rates effective January 1, 2017, per the Board's Framework. Union has not incorporated
9 administrative costs associated with the cap-and-trade program in its 2017 rates. Union will use
10 the previously approved Greenhouse Gas Emissions Impact Deferral Account discussed in
11 further detail in Exhibit 6 to record administrative costs associated with cap-and-trade until such
12 time as the costs are incorporated into rates.

13
14 This exhibit of evidence is organized as follows:

- 15 1. Customer-Related Obligation Costs
16 2. Facility-Related Obligation Costs
17 3. Parkway Delivery Commitment Incentive
18 4. Summary of Proposed Rate Changes
19 5. Customer Bill Impacts

20
21

1 1. Customer-Related Obligation Costs

2 Union is responsible for the GHG emissions obligation for most of its end-use distribution
3 customers, excluding mandatory, voluntary participants and wholesale customers¹. In order to
4 recover the customer-related obligation costs from the appropriate customers beginning January
5 1, 2017, Union proposes two sets of delivery rates for each rate class: one that includes a
6 customer-related obligation rate (applicable to customers for whom Union is responsible for the
7 GHG emissions obligation) and one that excludes the customer-related obligation rate
8 (applicable to customers responsible for their own GHG emissions obligation or for customers to
9 whom the GHG emissions obligation does not relate). Delivery rates that include the customer-
10 related obligation rate incorporate a volumetric unit rate of 3.3181 cents/m³, which is based on
11 the customer-related compliance cost, as described in further detail in Exhibit 3.

12

13 Details on the customer-related obligation total cost, allocation factor and unit rate can be found
14 at Exhibit 7, Schedule 1, p.1.

15

16 Union will track the difference between the amount collected through rates and the actual costs
17 incurred in the Greenhouse Gas Emissions Compliance Obligation – Customer-Related Deferral
18 Account as described in Exhibit 6.

19

20

¹ The obligation refers to the obligation of natural gas distributors to cover applicable GHG customer emissions through the procurement of compliance instruments and does not refer to the GHG emissions reporting obligations which applicable customers need to comply with themselves.

1 2. Facility-Related Obligation Costs

2 Union is also responsible for the GHG emissions obligation associated with its own operations.

3 Union's facility-related obligation is expected to be generated largely from GHG emissions
4 associated with UFG, compressor fuel and blowdowns, buildings and line heaters (company use

5 gas). In order to recover the cost of the facility-related obligation from customers beginning

6 January 1, 2017, Union has estimated the obligation cost based on Union's 2017 forecast of

7 facility-related emission obligations and the weighted average cost of compliance options

8 described in further detail in Exhibit 2 and Exhibit 3. Union is proposing to allocate the facility-

9 related obligation costs related to UFG and compressor fuel (including blowdowns) based on the

10 2013 Board-approved forecast, updated for compressor fuel changes associated with the Parkway

11 Delivery Obligation ("PDO") Settlement Agreement (EB-2013-0365). Union is proposing to

12 allocate the facility-related obligation costs for company use gas to rate classes based on the

13 2013 Board-approved admin and general costs. The facility-related obligation costs will be

14 recovered volumetrically in delivery and transportation commodity rates, as appropriate. All

15 customers in each rate class will be responsible for the facility-related obligation costs,

16 regardless of whether Union is responsible for the customer-related GHG emissions obligation.

17

18 Details on the facility-related obligation total cost, allocation factor and unit rate by rate class can

19 be found at Exhibit 7, Schedule 1.

20

1 Union will track the difference between the amount collected through rates and the actual costs
2 incurred in the Greenhouse Gas Emissions Compliance Obligation – Facility-Related Deferral
3 Account as described in Exhibit 6.

4

5 3. Parkway Delivery Commitment Incentive Cost

6 Union’s recovery of the cap-and-trade facility-related program costs increases the cost associated
7 with the payment of the Parkway Delivery Commitment Incentive (“PDCI”) for any continued
8 obligated DCQ quantities at Parkway, as compared to the amount included in Union’s 2017
9 Rates application (EB-2016-0245). The PDCI credit is set at the M12 Dawn to Parkway toll at
10 100% load factor including fuel, which increased from \$0.149/GJ to \$0.158/GJ, as a result of the
11 facility-related GHG emission obligation recovery in the M12 fuel and commodity rate. By
12 including cap-and-trade program costs in the M12 fuel and commodity rate, the PDCI cost
13 increases from \$16.6 million as filed in Union’s 2017 Rates application to \$17.6 million, for total
14 increase of \$1.0 million effective January 1, 2017. The calculation of \$17.6 million of PDCI
15 costs to be included in 2017 rates is provided at Exhibit 7, Schedule 2.

16

17 4. Summary of Proposed Rate Changes

18 The unit rate impacts of the cap-and-trade program are detailed at Exhibit 7, Schedule 3.

19

20 The proposed changes to rates and the summary of interruptible rate changes are provided at
21 Exhibit 7, Appendix A and Exhibit 7, Appendix C, respectively. Union has updated its rate
22 schedules to incorporate the impacts of the cap-and-trade program including identifying the

1 customer-related obligation rate and facility-related obligation rate within each rate schedule.

2 Blackline versions of Union's rate schedules are provided at Exhibit 7, Appendix B.

3

4 The impact to the supplemental charges and ex-franchise fuel rates are also provided at Schedule
5 4 and Schedule 5, respectively.

6

7 5. Customer Bill Impacts

8 Including the impacts of the customer-related obligation costs of the cap-and-trade program,
9 the bill impact for a typical residential customer consuming 2,200 m³ annually in the Union
10 South and Union North area is an increase of \$74 per year.

11

12 Excluding the impacts of the customer-related obligation costs of the cap-and-trade program,
13 the bill impact of the cap-and-trade program for a residential customer consuming 2,200 m³
14 annually in the Union South and Union North area is an increase of \$1 per year.

15

16 Exhibit 7, Schedule 6 provides customer bill impacts, both including and excluding customer-
17 related GHG obligations, for general service rate classes Rate M1, Rate M2, Rate 01 and Rate

18 10. Exhibit 7, Schedule 7 provides the customer bill impacts, both including and excluding
19 customer-related GHG obligations, for all in-franchise rate classes.

20

- 1 Bill impacts do not reflect proposed changes included in Union's 2017 Rates application (EB-
- 2 2016-0245) or changes to Union's gas commodity and fuel rates that will be implemented
- 3 with Union's January 1, 2017 QRAM application.

UNION GAS LIMITED
Derivation of 2017 Cap-and-Trade Forecast Compliance Cost Unit Rates

Line No.	Particulars	Customer-Related GHG Emission Obligation (a)	Facility-Related GHG Emission Obligation (a)	Total GHG Emission Obligation (c) = (a + b)
1	Forecast Emissions (tCO ₂ e) (1)	14,993,040	560,764	15,553,804
2	Weighted Average Forecast Price (\$/tCO ₂ e) (2)	<u>17.70</u>	<u>17.70</u>	<u>17.70</u>
3	Total Forecast Cost of Compliance Instruments (\$000's) (line 1 x line 2 / 1000)	265,377	9,926	275,302
4	Total Forecast Cost of Abatement (\$000's) (3)	<u>-</u>	<u>-</u>	<u>-</u>
5	Total Forecast Cost of Compliance (\$000's) (line 3 + line 4)	265,377	9,926	<u><u>275,302</u></u>
6	Forecast Volumes (10 ³ m ³) (4)	<u>7,997,879</u>	<u>289,882</u>	
7	Compliance Cost Unit Rate (cents/m ³) (line 5/ line 6 x 100)	<u><u>3.3181</u></u>	<u><u>3.4240</u></u>	

Notes:

- (1) Exhibit 2, Schedule 1, column (c), lines 21 and 22.
- (2) Exhibit 3, Schedule 1, column (b), line 5.
- (3) Exhibit 3, Schedule 1, column (c), lines 6 and 7.
- (4) Exhibit 2, Schedule 1, column (c), lines 7 and 12.

UNION GAS LIMITED
Derivation of Facility-Related Greenhouse Gas Compliance Costs and Unit Rates by Rate Class
Effective January 1, 2017

Line No.	Rate Class	UFG Volumes (1) (10 ³ m ³) (a)	Compressor Fuel Volumes (1) (10 ³ m ³) (b)	Company Use Volumes (2) (10 ³ m ³) (c)	Total Facility GHG Emission Volumes (10 ³ m ³) (d) = (a+b+c)	Total Facility Compliance Cost (\$000's) (e)=(d x 3.4240¢/m ³)	Current Approved Volumes (10 ³ m ³) (f)	Proposed Unit Rate (cents / m ³) (g) = (e / f)
<u>Union South In-Franchise - Delivery</u>								
1	Rate M1	9,184	9,435	6,532	25,151	861	2,897,179	0.0297
2	Rate M2	3,048	3,213	612	6,873	235	1,127,028	0.0209
3	Rate M4	1,250	1,378	228	2,856	98	349,263	0.0280
4	Rate M5	1,668	1,469	255	3,392	116	465,451	0.0249
5	Rate M7	460	527	64	1,051	36	124,828	0.0288
6	Rate M9	190	242	9	441	15	60,750	0.0248
7	Rate M10	1	1	0	1	0	189	0.0258
8	Rate T1	1,290	1,030	166	2,486	85	511,234	0.0167
9	Rate T2	9,835	5,202	458	15,495	531	4,597,268	0.0115
10	Rate T3	807	1,015	51	1,874	64	272,712	0.0235
11	Total South In-Franchise	<u>27,733</u>	<u>23,513</u>	<u>8,375</u>	<u>59,621</u>	<u>2,041</u>	<u>10,405,902</u>	
<u>Union North In-Franchise - Delivery</u>								
12	Rate 01	2,145	8,785	2,592	13,522	463	909,690	0.0509
13	Rate 10	727	2,765	225	3,717	127	337,112	0.0378
14	Rate 20	269	982	193	1,445	49	606,176	0.0082
15	Rate 25	-	-	78	78	3	159,555	0.0017
16	Rate 100	4	31	170	205	7	1,814,867	0.0004
17	Total Union North In-Franchise - Delivery	<u>3,145</u>	<u>12,564</u>	<u>3,258</u>	<u>18,966</u>	<u>649</u>	<u>3,827,400</u>	
18	Total In-Franchise	<u>30,877</u>	<u>36,076</u>	<u>11,633</u>	<u>78,587</u>	<u>2,691</u>	<u>14,233,302</u>	

Notes:

- (1) 2017 forecast facility-related greenhouse gas emission obligation related to UFG and compressor fuel (including blowdowns) allocated to rate classes in proportion to the 2013 Board-approved allocation of UFG and compressor fuel (EB-2011-0210), updated for PDO-related compressor fuel volumes per EB-2016-0245, Rate Order, Working Papers, Schedule 20, Page 3.
- (2) 2017 forecast facility-related greenhouse gas emission obligation related to company-use gas allocated to rate classes in proportion to the 2013 Board-approved admin and general costs.

UNION GAS LIMITED
Derivation of Facility-Related Greenhouse Gas Compliance Costs and Unit Rates by Rate Class
Effective January 1, 2017

Line No.	Rate Class	UFG Volumes (1) (10 ³ m ³) (a)	Compressor Fuel Volumes (1) (10 ³ m ³) (b)	Company Use Volumes (2) (10 ³ m ³) (c)	Total Facility GHG Emission Volumes (10 ³ m ³) (d) = (a+b+c)	Total Facility Compliance Cost (\$000's) (e)=(d x 3.4240¢/m ³)	Current Approved Volumes (GJ) (f)	Proposed Unit Rate (\$/GJ) (g) = (e / f)
<u>Ex-Franchise</u>								
Rate M12 - Firm Transportation								
1	Dawn to Kirkwall/Parkway (Cons)/Lisgar	12,253	31,727	422	44,401	1,520	246,989,954	0.006
2	Kirkwall to Parkway (TCPL/EGT)	2,368	3,948	82	6,397	219	47,726,097	0.005
3	Dawn to Parkway (TCPL/EGT) (3)	20,378	86,787	702	107,867	3,693	410,783,848	0.009
4	Parkway to Dawn/Kirkwall (3)	45	38	2	84	3	905,475	0.003
5	Kirkwall to Dawn	250	-	9	258	9	5,031,274	0.002
6	Total Rate M12	<u>35,293</u>	<u>122,500</u>	<u>1,215</u>	<u>159,008</u>	<u>5,444</u>	<u>711,436,648</u>	
7	Rate M13	<u>294</u>	<u>-</u>	<u>0</u>	<u>294</u>	<u>10</u>	<u>5,934,507</u>	0.002
Rate M16								
8	East of Dawn - To Dawn	106	-	0	106	4	2,137,619	0.002
9	East of Dawn - To Pool	106	20	0	126	4	2,137,619	0.002
10	West of Dawn - To Dawn	203	-	1	204	7	4,098,775	0.002
11	West of Dawn - To Pool	203	377	1	581	20	4,098,775	0.005
12	Total Rate M16	<u>619</u>	<u>397</u>	<u>2</u>	<u>1,018</u>	<u>35</u>	<u>12,472,788</u>	
Rate C1 - Firm Transportation								
13	St. Clair/Ojibway/Bluewater & Dawn	495	665	1	1,161	40	9,968,577	0.004
14	Parkway to Dawn/Kirkwall (3)	198	167	0	366	13	3,990,264	0.003
15	Dawn to Parkway (TCPL) (3)	120	467	0	588	20	2,423,295	0.009
16	Dawn to Dawn-Vector	907	736	2	1,645	56	18,280,703	0.003
17	Dawn to Dawn-TCPL	248	308	1	557	19	5,000,000	0.004
18	Interruptible and Short Term Transportation	8,807	27,139	22	35,968	1,232	177,529,686	0.007
19	Total Rate C1	<u>10,775</u>	<u>29,483</u>	<u>26</u>	<u>40,284</u>	<u>1,379</u>	<u>217,192,525</u>	
20	Excess Utility Storage Space	<u>2,523</u>	<u>8,120</u>	<u>49</u>	<u>10,691</u>	<u>366</u>		
21	Total Ex-Franchise	<u>49,504</u>	<u>160,500</u>	<u>1,292</u>	<u>211,295</u>	<u>7,235</u>		
22	Total In-Franchise & Ex-Franchise (4)	<u>80,381</u>	<u>196,576</u>	<u>12,925</u>	<u>289,882</u>	<u>9,926</u>		

Notes:

- (1) 2017 forecast facility-related greenhouse gas emission obligation related to UFG and compressor fuel (including blowdowns) allocated to rate classes in proportion to the 2013 Board-approved allocation of UFG and compressor fuel (EB-2011-0210), updated for PDO-related compressor fuel volumes per EB-2016-0245, Rate Order, Working Papers, Schedule 20, Page 3.
- (2) 2017 forecast facility-related greenhouse gas emission obligation related to company-use gas allocated to rate classes in proportion to the 2013 Board-approved admin and general costs.
- (3) The common Rate M12 and Rate C1 proposed unit rate is derived by using the combined Rate C1 and Rate M12 total facility costs.
- (4) Page 2, line 18 + Page 3, line 21.

UNION GAS LIMITED
2017 Rate Adjustment Summary based on
Changes to the Parkway Delivery Commitment Incentive (PDCI) Costs for Cap-and-Trade

Line No.	Particulars (\$000's)	PDCI Costs per EB-2016-0245 (1)			Updated PDCI Costs			Difference		
		Dawn-Parkway Demand Costs (a)	Compressor Fuel Costs (b)	Total PDCI Costs (c) = (a + b)	Dawn-Parkway Demand Costs (2) (d)	Compressor Fuel Costs (3) (e)	Total PDCI Costs (f) = (d + e)	Dawn-Parkway Demand Costs (g) = (d - a)	Compressor Fuel Costs (h) = (e - f)	Total Costs (i) = (h - g)
1	Rate M1	6,315	1,460	7,775	6,315	1,815	8,130	-	355	355
2	Rate M2	2,122	517	2,638	2,122	642	2,764	-	126	126
3	Rate M4	617	235	852	617	293	910	-	57	57
4	Rate M5 - Firm	6	6	12	6	7	13	-	1	1
5	Rate M5 - Interruptible	-	163	163	-	203	203	-	40	40
6	Rate M7 - Firm	284	95	379	284	118	402	-	23	23
7	Rate M7 - Interruptible	-	-	-	-	-	-	-	-	-
8	Rate M9	102	49	150	102	60	162	-	12	12
9	Rate M10	3	0	3	3	0	3	-	0	0
10	Rate T1 - Firm	305	215	519	305	267	572	-	52	52
11	Rate T1 - Interruptible	-	23	23	-	28	28	-	6	6
12	Rate T2 - Firm	1,977	1,105	3,083	1,977	1,374	3,351	-	269	269
13	Rate T2 - Interruptible	-	26	26	-	32	32	-	6	6
14	Rate T3	716	218	935	716	271	988	-	53	53
15	Total Costs	12,447	4,112	16,559	12,447	5,112	17,559	-	1,000	1,000

Notes:

- (1) EB-2016-0245, Rate Order, Working Papers, Schedule 20, p.1.
- (2) Exhibit 7, Schedule 2, p.2, column (b) + Exhibit 7, Schedule 2, p.3, column (b).
- (3) Exhibit 7, Schedule 2, p.3, column (d) + Exhibit 7, Schedule 2, p.3, column (d).

UNION GAS LIMITED
Derivation of the 2017 Sales Service PDCI Costs

Line No.	Particulars	Demand Costs		Commodity Costs		Total Sales Service PDCI Costs (\$000's) (e) = (b + d)
		2013 Approved Design Day Demands (1) (10 ³ m ³ /d) (a)	19 TJ Sales Service Demand Costs (2) (\$000's) (b)	2013 Approved Delivery Volumes East of Dawn (4) (10 ³ m ³) (c)	19 TJ Sales Service Fuel and UFG Costs (5) (\$000's) (d)	
1	Rate M1	22,132	394	1,823,853	113	507
2	Rate M2	7,435	132	645,259	40	172
3	Rate M4	2,162	38	294,126	18	57
4	Rate M5 Firm	20	0	7,501	0	1
5	Rate M5 Interruptible	-	-	203,891	13	13
6	Rate M7 Firm	997	18	118,324	7	25
7	Rate M7 Interruptible	-	-	-	-	-
8	Rate M9	356	6	60,750	4	10
9	Rate M10	11	0	189	0	0
10	Rate T1 Firm	1,068	19	267,950	17	36
11	Rate T1 Interruptible	-	-	28,552	2	2
12	Rate T2 Firm	6,931	123	1,380,265	86	209
13	Rate T2 Interruptible	-	-	32,431	2	2
14	Rate T3	2,511	45	272,712	17	62
15	Total	<u>43,624</u>	<u>777</u> (3)	<u>5,135,803</u>	<u>319</u> (6)	<u>1,096</u>

Notes:

- (1) Union South In-franchise Design Day Demand allocation factor per EB-2011-0210, Exhibit G3, Tab 5, Schedule 23, p. 7, line 2, Updated for Board Decision.
- (2) Allocated in proportion to column (a).
- (3) Calculated as 19 TJ x \$0.112/GJ/d x 365 = \$0.777 million. Rate represents the M12 Dawn to Parkway demand rate per EB-2016-0296.
- (4) Union South in-franchise volumes east of Dawn per EB-2011-0210, Exhibit G3, Tab 5, Schedule 21, pp. 13 & 14, Updated for Board Decision.
- (5) Allocated in proportion to column (c).
- (6) Calculated as 19 TJ x \$0.046/GJ/d x 365 = \$0.319 million. Rate represents the average Dawn to Parkway (TCPL, EGT) fuel and commodity rate per EB-2016-0296 Rate M12 Schedule 'C'.

UNION GAS LIMITED
Derivation of the 2017 Direct Purchase (DP) PDCI Costs

Line No.	Particulars	Demand Costs		Commodity Costs		Total DP PDCI Costs (\$000's) (e) = (b + d)
		2013 Approved Design Day Demands (1) (10 ³ m ³ /d) (a)	285 TJ DP Demand Costs (2) (\$000's) (b)	2013 Approved Delivery Volumes East of Dawn (4) (10 ³ m ³) (c)	285 TJ DP Fuel and UFG Costs (5) (\$000's) (d)	
1	Rate M1	22,132	5,921	1,823,853	1,702	7,623
2	Rate M2	7,435	1,989	645,259	602	2,591
3	Rate M4	2,162	578	294,126	275	853
4	Rate M5 Firm	20	5	7,501	7	12
5	Rate M5 Interruptible	-	-	203,891	190	190
6	Rate M7 Firm	997	267	118,324	110	377
7	Rate M7 Interruptible	-	-	-	-	-
8	Rate M9	356	95	60,750	57	152
9	Rate M10	11	3	189	0	3
10	Rate T1 Firm	1,068	286	267,950	250	536
11	Rate T1 Interruptible	-	-	28,552	27	27
12	Rate T2 Firm	6,931	1,854	1,380,265	1,288	3,142
13	Rate T2 Interruptible	-	-	32,431	30	30
14	Rate T3	2,511	672	272,712	255	926
15	Total	<u>43,624</u>	<u>11,670</u> (3)	<u>5,135,803</u>	<u>4,793</u> (6)	<u>16,464</u>

Notes:

- (1) Union South In-franchise Design Day Demand Allocation Factor per EB-2011-0210, Exhibit G3, Tab 5, Schedule 23, p. 7, line 2, Updated for Board Decision.
- (2) Allocated in proportion to column (a).
- (3) Calculated as 285 TJ x \$0.112/GJ/d x 365 = \$11.670 million. Rate represents the M12 Dawn to Parkway demand rate per EB-2016-0296.
- (4) Union South in-franchise volumes east of Dawn per EB-2011-0210, Exhibit G3, Tab 5, Schedule 21, pp. 13 & 14, Updated for Board Decision.
- (5) Allocated in proportion to column (c).
- (6) Calculated as 285 TJ x \$0.046/GJ/d x 365 = \$4.793 million. Rate represents the average Dawn to Parkway (TCPL, EGT) fuel and commodity rate per EB-2016-0296 Rate M12 Schedule 'C'.

UNION GAS LIMITED
 Union North
 In-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	Adjustments to 2017 Rates		Proposed Revenue (f) = (b+d+e)	Proposed Forecast Usage (g) = (a)	Proposed Rates				
						2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)			Excluding Customer-Related GHG Obligation Rates (h) = (f / g)	Rate Change (i)	Customer-Related GHG Unit Rate (j)	Including Customer-Related GHG Obligation (7) Rates (k) = (h+j)	Rate Change (l)
			(a)	(\$000s) (b)	(cents / m ³) (c)	(\$000's) (d)	(\$000's) (e)	(\$000's) (f)		(cents / m ³) (h)	(%) (i)	(cents / m ³) (j)	(cents / m ³) (k)	(%) (l)
1	Rate 01 General Service Monthly Charge	bills	3,839,732	80,634	\$21.00	-	-	80,634	3,839,732	\$21.00	-	-	\$21.00	-
2	Monthly Delivery Charge - All Zones													
3	First 100 m ³	10 ³ m ³	268,242	24,832	9.2574	137	-	24,969	268,242	9.3083	-	3.3181	12.6264	-
4	Next 200 m ³	10 ³ m ³	304,582	27,487	9.0244	155	-	27,642	304,582	9.0753	-	3.3181	12.3934	-
5	Next 500 m ³	10 ³ m ³	132,871	11,502	8.6567	68	-	11,570	132,871	8.7076	-	3.3181	12.0257	-
6	Over 1,000 m ³	10 ³ m ³	90,752	7,550	8.3192	46	-	7,596	90,752	8.3701	-	3.3181	11.6882	-
7	Delivery Commodity charge - 01		113,243	9,105	8.0404	58	-	9,163	113,243	8.0913	-	3.3181	11.4094	-
			<u>909,690</u>	<u>80,476</u>	<u>8.8466</u>	<u>463</u>	<u>-</u>	<u>80,939</u>	<u>909,690</u>	<u>8.8975</u>		<u>3.3181</u>	<u>12.2156</u>	
8	Total Delivery - 01		<u>909,690</u>	<u>161,111</u>	<u>17.7105</u>	<u>463</u>	<u>-</u>	<u>161,574</u>	<u>909,690</u>	<u>17.7614</u>	<u>0.3%</u>	<u>3.3181</u>	<u>21.0795</u>	<u>19.0%</u>
	Gas Transportation													
14	Union North West	10 ³ m ³	267,830	18,023	6.7292	-	-	18,023	267,830	6.7292	-	-	6.7292	-
15	Union North East	10 ³ m ³	659,134	19,546	2.9655	-	-	19,546	659,134	2.9655	-	-	2.9655	-
16	Transportation - 01		<u>926,963</u>	<u>37,569</u>	<u>4.0529</u>	<u>-</u>	<u>-</u>	<u>37,569</u>	<u>926,963</u>	<u>4.0529</u>	<u>0.0%</u>	<u>-</u>	<u>4.0529</u>	<u>0.0%</u>
	Storage													
22	Union North West	10 ³ m ³	262,839	5,412	2.0589	-	-	5,412	262,839	2.0589	-	-	2.0589	-
23	Union North East	10 ³ m ³	646,851	42,834	6.6220	-	-	42,834	646,851	6.6220	-	-	6.6220	-
24	Storage - 01		<u>909,690</u>	<u>48,246</u>	<u>5.3035</u>	<u>-</u>	<u>-</u>	<u>48,246</u>	<u>909,690</u>	<u>5.3035</u>	<u>0.0%</u>	<u>-</u>	<u>5.3035</u>	<u>0.0%</u>
25	Total Rate 01		<u>909,690</u>	<u>246,926</u>	<u>27.1439</u>	<u>463</u>	<u>-</u>	<u>247,389</u>	<u>909,690</u>	<u>27.1948</u>	<u>0.2%</u>	<u>3.3181</u>	<u>30.5129</u>	<u>12.4%</u>

Notes:

- (1) EB-2016-0245, Rate Order, Working Papers, Schedule 4, column (t).
- (2) EB-2016-0245, Rate Order, Working Papers, Schedule 4, column (r).
- (3) EB-2016-0245, Appendix A, rates effective January 1, 2017 (excludes Price Adjustments).
- (4) Exhibit 7, Schedule 1, p. 2, column (e).
- (5) Exhibit 7, Schedule 2, p. 1, column (i).
- (6) Exhibit 7, Schedule 1, p. 1, column (a), line 7.
- (7) Rates including customer-related GHG obligation will be applied to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
 Union North
 In-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Adjustments to 2017 Rates							Proposed Rates				
			Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)	Proposed Revenue (6)	Proposed Forecast Usage (7)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (6)	Including Customer-Related GHG Obligation (7)	
										Rates (cents / m³)	Rate Change (%)		Rates (cents / m³)	Rate Change (%)
		(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(g) = (a)	(h) = (f / g)	(i)	(j)	(k) = (h+i)	(l)	
1	Rate 10 General Service Monthly Charge	bills	24,629	1,724	\$70.00	-	-	1,724	24,629	\$70.00	-	\$70.00		
2	Monthly Delivery Charge - All Zones													
3	First 1,000 m³	10³m³	24,725	1,918	7.7571	9	-	1,927	24,725	7.7949	3.3181	11.1130		
4	Next 9,000 m³	10³m³	133,487	8,442	6.3246	50	-	8,493	133,487	6.3624	3.3181	9.6805		
5	Next 20,000 m³	10³m³	84,909	4,800	5.6530	32	-	4,832	84,909	5.6908	3.3181	9.0089		
6	Next 70,000 m³	10³m³	64,380	3,294	5.1162	24	-	3,318	64,380	5.1540	3.3181	8.4721		
7	Over 100,000 m³	10³m³	29,612	913	3.0825	11	-	924	29,612	3.1203	3.3181	6.4384		
7	Delivery Commodity charge - 10		337,112	19,367	5.7450	127	-	19,494	337,112	5.7827	3.3181	9.1008		
8	Total Delivery - 10		337,112	21,091	6.2564	127	-	21,218	337,112	6.2941	0.6%	3.3181	9.6122	53.6%
	Gas Transportation													
14	Union North West	10³m³	82,150	4,841	5.8929	-	-	4,841	82,150	5.8929	-	5.8929		
15	Union North East	10³m³	261,380	7,137	2.7303	-	-	7,137	261,380	2.7303	-	2.7303		
16	Transportation - 10		343,530	11,978	3.4866	-	-	11,978	343,530	3.4866	0.0%	3.4866	0.0%	
	Storage													
22	Union North West	10³m³	80,615	1,249	1.5495	-	-	1,249	80,615	1.5495	-	1.5495		
23	Union North East	10³m³	256,497	11,994	4.6762	-	-	11,994	256,497	4.6762	-	4.6762		
24	Storage - 10		337,112	13,243	3.9285	-	-	13,243	337,112	3.9285	0.0%	3.9285	0.0%	
25	Total Rate 10		337,112	46,312	13.7379	127	-	46,439	337,112	13.7756	0.3%	3.3181	17.0937	24.4%

Notes:

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UNION GAS LIMITED
 Union North
 In-Franchise Customers
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Line No.	Particulars	Billing Units	Adjustments to 2017 Rates							Proposed Rates				
			Proposed Forecast Usage (1)	Proposed Revenue (\$000's) (2)	Proposed Rates (cents / m³) (3)	2017 Facility-Related GHG Obligation (\$000's) (4)	2017 Parkway Delivery Commitment Incentive (\$000's) (5)	Proposed Revenue (\$000's) (f) = (b+d+e)	Proposed Forecast Usage (g) = (a)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (8) (cents / m³) (j)	Including Customer-Related GHG Obligation (7)	
										Rates (cents / m³) (h) = (f / g)	Rate Change (%) (i)		Rates (cents / m³) (k) = (h+j)	Rate Change (%) (l)
1	Rate 20 Medium Volume Firm Service Monthly Charge	bills	748	662	\$884.46	-	-	662	748	\$884.46	-	-	\$884.46	-
2	Monthly Demand Charge													
2	First 70,000 m³	10³m³/d	23,260	6,660	28.6326	-	-	6,660	23,260	28.6326	-	-	28.6326	-
3	All over 70,000 m³	10³m³/d	19,701	3,317	16.8374	-	-	3,317	19,701	16.8374	-	-	16.8374	-
4	Monthly Commodity Charge													
4	First 852,000 m³	10³m³	318,773	1,801	0.5649	26	-	1,827	318,773	0.5731	3.3181	3.8912	3.8912	-
5	All over 852,000 m³	10³m³	287,403	1,180	0.4106	23	-	1,203	287,403	0.4188	3.3181	3.7369	3.7369	-
6	Delivery (Commodity/Demand)		606,176	12,958	2.1376	49	-	13,007	606,176	2.1457	0.4%	3.3181	5.4638	155.6%
7	Transportation Account Charge	10³m³	460	104	\$225.61	-	-	104	460	\$225.61	-	-	\$225.61	-
8	Total Delivery - 20		606,176	13,723	2.2638	49	-	13,772	606,176	2.2720	0.4%	3.3181	5.5901	146.9%
13	Gas Supply Demand Charge													
13	Union North West	10³m³	2,962	1,654	55.8485	-	-	1,654	2,962	55.8485	-	-	55.8485	-
14	Union North East	10³m³	3,911	1,945	49.7267	-	-	1,945	3,911	49.7267	-	-	49.7267	-
	Gas Supply Demand - 20		6,873	3,599	52.3650	-	-	3,599	6,873	52.3650	0.0%	-	52.3650	0.0%
19	Commodity Transportation 1													
19	Union North West	10³m³	28,383	1,011	3.5625	-	-	1,011	28,383	3.5625	-	-	3.5625	-
20	Union North East	10³m³	45,073	1,175	2.6079	-	-	1,175	45,073	2.6079	-	-	2.6079	-
	Commodity Transportation 1 - 20		73,456	2,187	2.9767	-	-	2,187	73,456	2.9767	0.0%	-	2.9767	0.0%
25	Commodity Transportation 2													
25	Union North West	10³m³	14,503	-	-	-	-	-	14,503	-	-	-	-	-
26	Union North East	10³m³	33,976	-	-	-	-	-	33,976	-	-	-	-	-
	Commodity Transportation 2 - 20		48,479	-	-	-	-	-	48,479	-	0.0%	-	-	0.0%
29	Storage (GJ's)													
29	Demand	GJ/d	99,288	1,997	20.111	-	-	1,997	99,288	20.111	-	-	20.111	-
30	Commodity	GJ	639,477	132	0.206	-	-	132	639,477	0.206	-	-	0.206	-
31	Gas Supply Transportation - 20		121,935	7,914	6.4904	-	-	7,914	121,935	6.4904	0.0%	-	6.4904	0.0%
32	Total Rate 20		606,176	21,637	3.5694	49	-	21,686	606,176	3.5776	0.2%	3.3181	6.8957	93.2%

Notes:

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UNION GAS LIMITED
 Union North
 In-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Adjustments to 2017 Rates							Proposed Rates				
			Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	2017 Facility-Related GHG		Proposed Revenue (5)	Proposed Forecast Usage (6)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (7)	Including Customer-Related GHG Obligation (7)	
						Obligation (4)	Commitment Incentive (5)			Rates (cents / m³)	Rate Change (%)		Rates (cents / m³)	Rate Change (%)
			(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(g) = (a)	(h) = (f / g)	(i)	(j)	(k) = (h+j)	(l)
1	Rate 25 Large Volume Interruptible Service Monthly Charge	bills	842	258	\$306.75	-	-	258	842	\$306.75	-	-	\$306.75	-
2	Monthly Delivery Charge	10³m³	159,555	4,074	2.5531	3	-	4,076	159,555	2.5548	3.3181	-	5.8729	
3	Transportation Account Charge	bills	36	8	\$225.61	-	-	8	36	\$225.61	-	-	\$225.61	
4	Total Delivery - 25		159,555	4,340	2.7201	3	-	4,343	159,555	2.7217	0.1%	3.3181	6.0398	122.0%
5	Gas Supply Transportation	10³m³	42,913	688	1.6030	-	-	688	42,913	1.6030	-	-	1.6030	
6	Total Rate 25		159,555	5,028	3.1512	3	-	5,031	159,555	3.1529	0.1%	3.3181	6.4710	105.4%
7	Rate 100 Large Volume Firm Service Monthly Charge	bills	226	310	\$1,372.75	-	-	310	226	\$1,372.75	-	-	\$1,372.75	-
8	Demand	10³m³/d	71,975	10,874	15.1083	-	-	10,874	71,975	15.1083	-	-	15.1083	
9	Commodity	10³m³	1,814,867	4,002	0.2205	7	-	4,009	1,814,867	0.2209	3.3181	-	3.5390	
10	Delivery (Commodity/Demand)		1,814,867	15,186	0.8368	7	-	15,193	1,814,867	0.8372	0.0%	3.3181	4.1553	396.6%
11	Transportation Account Charge	bills	226	51	\$225.61	-	-	51	226	\$225.61	-	-	\$225.61	
12	Total Delivery - 100		1,814,867	15,237	0.8396	7	-	15,244	1,814,867	0.8400	0.0%	3.3181	4.1581	395.2%
17	Gas Supply Demand Charge Union North West	10³m³	-	-	112.0994	-	-	-	-	112.0994	-	-	112.0994	
18	Union North East	10³m³	-	-	158.4424	-	-	-	-	158.4424	-	-	158.4424	
23	Commodity Transportation 1 Union North West	10³m³	-	-	6.2885	-	-	-	-	6.2885	-	-	6.2885	
24	Union North East	10³m³	-	-	9.0613	-	-	-	-	9.0613	-	-	9.0613	
29	Commodity Transportation 2 Union North West	10³m³	-	-	-	-	-	-	-	-	-	-	-	
30	Union North East	10³m³	-	-	-	-	-	-	-	-	-	-	-	
33	Storage (GJ's) Demand	GJ/d	15,600	314	20.111	-	-	314	15,600	20.111	-	-	20.111	
34	Commodity	GJ	100,000	21	0.206	-	-	21	100,000	0.206	-	-	0.206	
35	Gas Supply - 100		-	334	-	-	-	334	115,600	-	-	-	-	
36	Total Rate 100		1,814,867	15,572	0.8580	7	-	15,579	1,814,867	0.8584	0.0%	3.3181	0.8584	0.0%

Notes:

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UNION GAS LIMITED
Union South
In-Franchise Customers
Effective January 1, 2017

Line No.	Particulars	Billing Units	Adjustments to 2017 Rates							Proposed Rates				
			Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)	Proposed Revenue (\$000's)	Proposed Forecast Usage (g) = (a)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (6)	Including Customer-Related GHG Obligation (7)	
										Rates (cents / m³)	Rate Change (%)		Rates (cents / m³)	Rate Change (%)
		(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(g) = (a)	(h) = (f / g)	(i)	(j)	(k) = (h+j)	(l)	
M1														
1	Monthly Charge	bills	12,706,802	266,843	\$21.00	-	-	266,843	12,706,802	\$21.00	-	\$21.00		
Monthly Delivery Commodity Charge														
2	First 100 m³	10³m³	872,593	41,366	4.7406	259	118	41,743	872,593	4.7838	3.3181	8.1019		
3	Next 150 m³	10³m³	774,838	34,869	4.5002	230	99	35,199	774,838	4.5427	3.3181	7.8608		
4	All over 250 m³	10³m³	1,249,748	48,477	3.8790	371	138	48,987	1,249,748	3.9197	3.3181	7.2378		
5	Total Delivery - M1		2,897,179	391,556	13.5151	861	355	392,772	2,897,179	13.5571	0.3%	3.3181	16.8752	24.9%
6	Storage	10³m³	2,897,179	20,723	0.7153	-	-	20,723	2,897,179	0.7153	0.0%	-	0.7153	0.0%
7	Total Rate M1		2,897,179	412,278	14.2303	861	355	413,495	2,897,179	14.2723	0.3%	3.3181	17.5904	23.6%
M2														
8	Monthly Charge	bills	81,451	5,702	\$70.00	-	-	5,702	81,451	\$70.00	-	\$70.00		
Monthly Delivery Commodity Charge														
9	First 1,000 m³	10³m³	61,283	2,889	4.7134	13	7	2,909	61,283	4.7464	3.3181	8.0645		
10	Next 6,000 m³	10³m³	298,234	13,796	4.6259	62	35	13,894	298,234	4.6587	3.3181	7.9768		
11	Next 13,000 m³	10³m³	336,990	14,961	4.4396	70	38	15,069	336,990	4.4718	3.3181	7.7899		
12	All over 20,000 m³	10³m³	430,521	17,742	4.1211	90	45	17,877	430,521	4.1524	3.3181	7.4705		
13	Total Delivery - M2		1,127,028	55,090	4.8880	235	126	55,451	1,127,028	4.9201	0.7%	3.3181	8.2382	68.5%
14	Storage	10³m³	1,127,028	7,046	0.6252	-	-	7,046	1,127,028	0.6252	0.0%	-	0.6252	0.0%
15	Total Rate M2		1,127,028	62,135	5.5132	235	126	62,496	1,127,028	5.5452	0.6%	3.3181	8.8633	60.8%

Notes:

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- (7) Rates including customer-related GHG obligation will be applied to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
 Union South
 In-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	Adjustments to 2017 Rates		Proposed Revenue (\$000's)	Proposed Forecast Usage (g) = (a)	Proposed Rates						
						(\$000's)	(cents / m ³)			2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (6)	Including Customer-Related GHG Obligation (7)	
												Rates (cents / m ³)	Rate Change (%)		Rates (cents / m ³)	Rate Change (%)
(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(h) = (f / g)	(i)	(j)	(k) = (h+j)	(l)						
M4 Firm Commercial/Industrial Contract Rate																
Monthly Demand Charge																
1	First 8,450 m ³	10 ³ m ³ /d	12,905	7,331	56.8027	-	24	7,355	12,905	56.9923	-	56.9923				
2	Next 19,700 m ³	10 ³ m ³ /d	7,864	2,003	25.4689	-	7	2,009	7,864	25.5539	-	25.5539				
3	All over 28,150 m ³	10 ³ m ³ /d	4,507	964	21.3974	-	3	968	4,507	21.4688	-	21.4688				
Monthly Delivery Commodity Charge																
4	First Block	10 ³ m ³	341,905	4,869	1.4240	96	23	4,987	341,905	1.4586	3.3181	4.7767				
5	All remaining use	10 ³ m ³	7,358	45	0.6061	2	0	47	7,358	0.6369	3.3181	3.9550				
7	Total Rate M4		349,263	15,211	4.3552	98	57	15,366	349,263	4.3996	1.0%	3.3181	7.7177	77.2%		
M5A Interruptible Commercial/Industrial Contract Rate																
Firm contracts																
8	Monthly Demand Charge	10 ³ m ³ /d	626	199	31.7959	-	-	199	626	31.7959	-	31.7959				
9	Monthly Delivery Commodity Charge	10 ³ m ³	15,121	359	2.3718	4	1	364	15,121	2.4064	3.3181	5.7245				
10	Total Delivery - Firm M5A		15,121	558	3.6872	4	1	563	15,121	3.7218	0.9%	3.3181	7.0399	90.9%		
Interruptible contracts																
11	Monthly Charge	bills	1,692	1,107	\$654.15	-	-	1,107	1,692	\$654.15	-	\$654.15				
12	Delivery Commodity Charge (Avg Price)	10 ³ m ³	450,329	12,277	2.7261	112	40	12,429	450,329	2.7599	3.3181	6.0780				
13	Total Delivery -Interruptible M5A		450,329	13,383	2.9719	112	40	13,535	450,329	3.0057	1.1%	3.3181	6.3238	112.8%		
14	Total Rate M5A		465,451	13,941	2.9952	116	41	14,098	465,451	3.0289	1.1%	3.3181	6.3470	111.9%		

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UNION GAS LIMITED
Union South
In-Franchise Customers
Effective January 1, 2017

Line No.	Particulars	Billing Units	Adjustments to 2017 Rates							Proposed Rates				
			Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)	Proposed Revenue (\$000's)	Proposed Forecast Usage (g) = (a)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (6)	Including Customer-Related GHG Obligation (7)	
										Rates (cents / m ³)	Rate Change (%)		Rates (cents / m ³)	Rate Change (%)
(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(g) = (a)	(h) = (f / g)	(i)	(j)	(k) = (h+j)	(l)			
M7 Special Large Volume Contract Rate Firm Contracts														
1	Monthly Demand Charge	10 ³ m ³ /d	14,220	4,383	30.8246	-	-	4,383	14,220	30.8246	-	30.8246		
2	Monthly Delivery Commodity Charge	10 ³ m ³	120,879	543	0.4496	35	23	601	120,879	0.4975	3.3181	3.8156		
3	Total Delivery - Firm M7		120,879	4,927	4.0757	35	23	4,985	120,879	4.1237	1.2%	3.3181	7.4418	
Interruptible / Seasonal Contracts														
4	Monthly Delivery Commodity Charge	10 ³ m ³	3,949	52	1.3162	1	-	53	3,949	1.3450	2.2%	3.3181	4.6631	
5	Total Rate M7		124,828	4,979	3.9884	36	23	5,038	124,828	4.0357	1.2%	3.3181	7.3538	
M9 Large Wholesale Service														
6	Monthly Demand Charge	10 ³ m ³ /d	3,993	891	22.3154	-	-	891	3,993	22.3154	-	22.3154		
7	Monthly Delivery Commodity Charge	10 ³ m ³	60,750	164	0.2703	15	12	191	60,750	0.3146	3.3181	3.6327		
8	Total Rate M9		60,750	1,055	1.7370	15	12	1,082	60,750	1.7813	2.6%	3.3181	5.0994	
M10 Small Wholesale Service														
9	Monthly Delivery Commodity Charge	10 ³ m ³	189	13	6.8119	0	0	13	189	6.8572		3.3181	10.1753	
10	Total Rate M10		189	13	6.8119	0	0	13	189	6.8572	0.7%	3.3181	10.1753	

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UNION GAS LIMITED
Union South
In-Franchise Customers
Effective January 1, 2017

Line No.	Particulars	Billing Units	Proposed Rates											
			Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	Adjustments to 2017 Rates		Proposed Revenue (f) = (b+d+e)	Proposed Forecast Usage (g) = (a)	Excluding Customer-Related GHG Obligation		Including Customer-Related GHG Obligation (7)		
						2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)			Rates (cents / m ³) (h) = (f / g)	Rate Change (%) (i)	Unit Rate (cents / m ³) (j)	Rates (cents / m ³) (k) = (h+j)	Rate Change (%) (l)
T1 Storage and Transportation														
Storage (\$/GJ's)														
Demand:														
Firm injection / withdrawal														
1	Union provides deliverability inventory	GJ/d.mo.	492,360	769	1.561	-	-	769	492,360	1.561	-	1.561		
2	Customer provides deliverability inventory	GJ/d.mo.	166,800	199	1.186	-	-	199	166,800	1.186	-	1.186		
3	Incremental firm injection right	GJ/d.mo.	-	-	1.186	-	-	-	-	1.186	-	1.186		
4	Interruptible	GJ/d.mo.	62,244	77	1.186	-	-	77	62,244	1.186	-	1.186		
5	Space	GJ/d.mo.	22,396,680	245	0.011	-	-	245	22,396,680	0.011	-	0.011		
6	Commodity (Customer Provides)	GJ	2,750,300	21	0.008	-	-	21	2,750,300	0.008	-	0.008		
7	Commodity (Union Provides)	GJ	-	-	0.028	-	-	-	-	0.028	-	0.028		
8	Customer supplied fuel	GJ	16,442	54	-	-	-	54	16,442	-	-	-		
Transportation (cents/ m3)														
Demand														
9	First 28,150 m ³	10 ³ m ³ /d/mo	12,448	4,411	35.4376	-	-	4,411	12,448	35.4376	-	35.4376		
10	Next 112,720 m ³	10 ³ m ³ /d/mo	13,002	3,183	24.4833	-	-	3,183	13,002	24.4833	-	24.4833		
Commodity														
Firm														
11	All Volumes	10 ³ m ³	452,300	563	0.1245	75	52	690	452,300	0.1527	3.3181	3.4708		
12	Interruptible	10 ³ m ³	58,934	784	1.3298	10	6	799	58,934	1.3559	3.3181	4.6740		
13	Monthly Charges	Meter/mo.	528	1,006	\$1,905.94	-	-	1,006	528	\$1,905.94	-	\$1,905.94		
14	Customer supplied fuel	10 ³ m ³	2,979	299	-	-	-	299	2,979	-	-	-		
15	Total Rate T1		<u>511,234</u>	<u>11,611</u>	<u>2.2711</u>	<u>85</u>	<u>58</u>	<u>11,753</u>	<u>511,234</u>	<u>2.2990</u>	<u>1.2%</u>	<u>3.3181</u>	<u>5.6171</u>	<u>147.3%</u>
T2 Storage and Transportation														
Storage (\$/GJ's)														
Demand:														
Firm injection / withdrawal														
16	Union provides deliverability inventory	GJ/d.mo.	1,516,920	2,367	1.561	-	-	2,367	1,516,920	1.561	-	1.561		
17	Customer provides deliverability inventory	GJ/d.mo.	1,336,556	1,588	1.186	-	-	1,588	1,336,556	1.186	-	1.186		
18	Incremental firm injection right	GJ/d.mo.	-	-	1.186	-	-	-	-	1.186	-	1.186		
19	Interruptible	GJ/d.mo.	415,704	512	1.186	-	-	512	415,704	1.186	-	1.186		
20	Space	GJ/d.mo.	106,645,056	1,167	0.011	-	-	1,167	106,645,056	0.011	-	0.011		
21	Commodity (Customer Provides)	GJ	7,869,782	60	0.008	-	-	60	7,869,782	0.008	-	0.008		
22	Commodity (Union Provides)	GJ	-	-	0.028	-	-	-	-	0.028	-	0.028		
23	Customer supplied fuel	GJ	47,061	154	-	-	-	154	47,061	-	-	-		
Transportation (cents/ m3)														
Demand														
24	First 140,870 m ³	10 ³ m ³ /d/mo	49,971	13,215	26.4455	-	-	13,215	49,971	26.4455	-	26.4455		
25	All Over 140,870 m ³	10 ³ m ³ /d/mo	167,088	23,373	13.9884	-	-	23,373	167,088	13.9884	-	13.9884		
Commodity														
Firm														
26	All Volumes	10 ³ m ³	4,259,573	1,460	0.0343	492	269	2,220	4,259,573	0.0521	3.3181	3.3702		
27	Interruptible	10 ³ m ³	337,695	3,387	1.0028	39	6	3,432	337,695	1.0162	3.3181	4.3343		
28	Monthly Charges	Meter/mo.	444	2,448	\$5,513.81	-	-	2,448	444	\$5,513.81	-	\$5,513.81		
29	Customer supplied fuel	10 ³ m ³	23,922	2,134	-	-	-	2,134	23,922	-	-	-		
30	Total Rate T2		<u>4,597,268</u>	<u>51,863</u>	<u>1.1281</u>	<u>531</u>	<u>275</u>	<u>52,669</u>	<u>4,597,268</u>	<u>1.1457</u>	<u>1.6%</u>	<u>3.3181</u>	<u>4.4638</u>	<u>295.7%</u>

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UNION GAS LIMITED
 Union South
 In-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Adjustments to 2017 Rates					Proposed Rates						
			Proposed Forecast Usage (1)	Proposed Revenue (2)	Proposed Rates (3)	2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)	Proposed Revenue (\$000's)	Proposed Forecast Usage (g) = (a)	Excluding Customer-Related GHG Obligation		Customer-Related GHG Unit Rate (6)	Including Customer-Related GHG Obligation (7)	
										Rates (cents / m ³)	Rate Change (%)		Rates (cents / m ³)	Rate Change (%)
			(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(g) = (a)	(h) = (f / g)	(i)	(j)	(k) = (h+i)	(l)
T3														
Storage (\$/GJ's)														
Demand:														
Firm injection / withdrawal														
1	Union provides deliverability inventory	GJ/d/mo.	-	-	1.561	-	-	-	-	1.561	-	-	1.561	-
2	Customer provides deliverability inventory	GJ/d/mo.	679,320	802	1.186	-	-	802	679,320	1.186	-	-	1.186	-
3	Incremental firm injection right	GJ/d/mo.	-	-	1.186	-	-	-	-	1.186	-	-	1.186	-
4	Interruptible	GJ/d/mo.	-	-	1.186	-	-	-	-	1.186	-	-	1.186	-
5	Space	GJ/d/mo.	36,614,256	400	0.011	-	-	400	36,614,256	0.011	-	-	0.011	-
6	Commodity (Customer Provides)	GJ	4,459,672	34	0.008	-	-	34	4,459,672	0.008	-	-	0.008	-
7	Commodity (Union Provides)	GJ	-	-	0.028	-	-	-	-	0.028	-	-	0.028	-
8	Customer supplied fuel	GJ	26,668	87	-	-	-	87	26,668	-	-	-	-	-
Transportation (cents/ m3)														
9	Demand	10 ³ m ³ /d/mo	28,200	4,715	16.7213	-	-	4,715	28,200	16.7213	-	-	16.7213	-
10	Commodity	10 ³ m ³	272,712	248	0.0909	64	53	365	272,712	0.1339	3.3181	-	3.4520	-
11	Monthly Charges	Meter/mo.	12	240	\$19,968.19	-	-	240	12	\$19,968.19	-	-	\$ 19,968.19	-
12	Customer supplied fuel	10 ³ m ³	1,972	189	-	-	-	189	1,972	-	-	-	-	-
13	Total Rate T3		<u>272,712</u>	<u>6,715</u>	<u>2.4625</u>	<u>64</u>	<u>53</u>	<u>6,833</u>	<u>272,712</u>	<u>2.5055</u>	<u>1.7%</u>	<u>3.3181</u>	<u>5.8236</u>	<u>136.5%</u>
14	Total In-franchise (excluding Gas Supply Admin Charge)			<u>915,276</u>		<u>2,691</u>	<u>1,000</u>	<u>918,967</u>						

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UNION GAS LIMITED
 Union South
 Ex-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Current Proposed Forecast Usage (1)	Current Proposed Revenue (2)	Current Proposed Rates (3)	Adjustment to 2017 Rates		Proposed Revenue (f) = (b+d+e)	Proposed Rates		Rate Change (%) (i)
						2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Incentive (5)		Usage including Adjustment (g) = (a)	Rates (\$/ GJ) (h) = (f / g)	
M12 Transportation Service											
Demand:											
Dawn to Kirkwall											
1	- 12 months	GJ/d/mo	419,318	16,118	2.865	-	-	16,118	419,318	2.865	
2	- 10 months	GJ/d/mo	304,563	8,726	2.865	-	-	8,726	304,563	2.865	
3	- 2 months	GJ/d/mo	18,365	105	2.865	-	-	105	18,365	2.865	
4	- F24-T - 12 months	GJ/d/mo	49,500	41	0.070	-	-	41	49,500	0.070	
Dawn to Parkway											
5	- 12 months	GJ/d/mo	3,920,130	172,578	3.402	-	-	172,578	3,920,130	3.402	
6	- 10 months	GJ/d/mo	65,000	2,211	3.402	-	-	2,211	65,000	3.402	
7	- 3 months	GJ/d/mo	2,000	20	3.402	-	-	20	2,000	3.402	
8	- F24-T - 12 months	GJ/d/mo	307,000	328	0.070	-	-	328	307,000	0.070	
M12-X Easterly (between Dawn, Kirkwall and Parkway)											
9	- 12 months	GJ/d/mo	391,011	15,963	3.402	-	-	15,963	391,011	3.402	
M12-X Westerly (between Dawn, Kirkwall and Parkway)											
10	- 12 months	GJ/d/mo	391,011	3,926	0.837	-	-	3,926	391,011	0.837	
Kirkwall to Parkway											
11	- 12 months	GJ/d/mo	138,940	896	0.537	-	-	896	138,940	0.537	
12	- 2 months	GJ/d/mo	174,752	188	0.537	-	-	188	174,752	0.537	
Fuel and Commodity Charges:											
Fuel											
13	Easterly - Providing Own Fuel	GJ	705,499,899	23,914	-	-	-	23,914	705,499,899	-	
14	Westerly - Providing Own Fuel	GJ	5,936,749	50	-	-	-	50.35	5,936,749	-	
Commodity Charges											
15	Dawn to Kirkwall / Parkway (Cons) / Lisgar	GJ	246,989,954	-	0.000	1,520	-	1,520	246,989,954	0.006	
16	Kirkwall to Parkway	GJ	47,726,097	-	0.000	219	-	219	47,726,097	0.005	
17	Dawn to Parkway (TCPL / EGT)	GJ	410,783,848	-	0.000	3,693	-	3,693	410,783,848	0.009	
18	Parkway to Dawn / Kirkwall	GJ	905,475	-	0.000	3	-	3	905,475	0.003	
19	Kirkwall to Dawn	GJ	5,031,274	-	0.000	9	-	9	5,031,274	0.002	
20	Total Rate M12		<u>711,436,648</u>	<u>245,065</u>		<u>5,444</u>	<u>-</u>	<u>250,510</u>	<u>711,436,648</u>		<u>2.2%</u>

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UNION GAS LIMITED
 Union South
 Ex-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Current Proposed Forecast Usage (1)	Current Proposed Revenue (2)	Current Proposed Rates (3)	Adjustment to 2017 Rates		Proposed Revenue (\$000's)	Proposed Rates		
						2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Incentive (5)		Usage including Adjustment (g) = (a)	Rates (\$/ GJ) (h) = (f / g)	Rate Change (%) (i)
			(a)	(b)	(c)	(d)	(e)	(f) = (b+d+e)	(g) = (a)	(h) = (f / g)	(i)
M13 Transportation of Locally Produced Gas											
1	Monthly Fixed Charge	monthly	15	171	\$952.72	-	-	171	15	\$952.72	
2	Transmission Commodity Charge	GJ	5,934,507	203	0.035	-	-	203	5,934,507	0.035	
3	Commodity - Providing Own Fuel	GJ	5,934,507	46	0.008	-	-	46	5,934,507	0.010	
4	Commodity - Shipper Providing Own Fuel	GJ	5,934,507	-	0.000	10	-	10	5,934,507	0.002	
5	Total Rate M13		<u>5,934,507</u>	<u>420</u>		<u>10</u>	<u>-</u>	<u>430</u>	<u>5,934,507</u>		<u>2.4%</u>
M16 Transportation Service											
6	Monthly Fixed Charge	monthly	4	73	\$1,515.67	-	-	73	4	\$1,515.67	
7	Transmission Commodity Charge	GJ	6,236,394	217	0.035	-	-	217	6,236,394	0.035	
Charges West of Dawn:											
8	Firm Demand Charge	GJ/d	17,846	224	\$1.045	-	-	224	17,846	\$1.045	
9	Fuel & UFG to Dawn	GJ	4,098,775	31	0.008	-	-	31	4,098,775	0.010	
10	Fuel & UFG to Pool	GJ	4,098,775	89	0.022	-	-	89	4,098,775	0.027	
11	Commodity Charge - To Dawn	GJ	4,098,775	-	0.000	7	-	7	4,098,775	0.002	
12	Commodity Charge - To Pool	GJ	4,098,775	-	0.000	20	-	20	4,098,775	0.005	
Charges East of Dawn:											
13	Firm Demand Charge	GJ/d	9,067	84	\$0.770	-	-	84	9,067	\$0.770	
14	Fuel & UFG to Dawn	GJ	2,137,619	16	0.008	-	-	16	2,137,619	0.010	
15	Fuel & UFG to Pool	GJ	2,137,619	20	0.009	-	-	20	2,137,619	0.011	
16	Commodity Charge - To Dawn	GJ	2,137,619	-	0.000	4	-	4	2,137,619	0.002	
17	Commodity Charge - To Pool	GJ	2,137,619	-	0.000	4	-	4	2,137,619	0.002	
18	Total Rate M16		<u>12,472,788</u>	<u>755</u>		<u>35</u>	<u>-</u>	<u>790</u>	<u>12,472,788</u>		<u>4.6%</u>

Notes:

- (1) EB-2016-0245, Rate Order, Working Papers, Schedule 4, column (t).
- (2) EB-2016-0245, Rate Order, Working Papers, Schedule 4, column (q).
- (3) EB-2016-0245, Appendix A, rates effective January 1, 2017.
- (4) Exhibit 7, Schedule 1, p.3, columns (e).

UNION GAS LIMITED
 Union South
 Ex-Franchise Customers
 Effective January 1, 2017

Line No.	Particulars	Billing Units	Current Proposed Forecast Usage (1)	Current Proposed Revenue (2)	Current Proposed Rates (3)	Adjustment to 2017 Rates		Proposed Revenue (f) = (b+d+e)	Proposed Rates	
						2017 Facility-Related GHG Obligation (4)	2017 Parkway Delivery Commitment Incentive (5)		Usage including Adjustment (g) = (a)	Rates (\$/ GJ) (h) = (f / g)
C1 Cross Franchise Transportation Service										
Storage Service:										
1	Peak Storage (Short-term) Commodity	GJ	22,489,337	7,665	-	-	7,665	22,489,337		
2	Off Peak Storage/ Balancing / Loans	GJ		2,500	-	-	2,500			
Transportation Service:										
Demand:										
3	St.Clair & Dawn / Ojibway & Dawn - 12 months	GJ/mo	85,460	3,246	1.045	-	3,246	85,460	1.045	
4	Parkway to Dawn / Kirkwall - 12 months	GJ/mo	347,371	3,488	0.837	-	3,488	347,371	0.837	
5	- 3 months	GJ/mo	54,357	136	0.837	-	136	54,357	0.837	
6	Kirkwall to Dawn	GJ/mo	-	-	1.475	-	-	-	1.475	
7	Dawn to Parkway - 12 months	GJ/mo	7,065	424	3.402	-	424	7,065	3.402	
8	- 12 months North T-Service	GJ/mo	30,111	1,229	3.402	-	1,229	30,111	3.402	
9	Kirkwall to Parkway	GJ/mo	-	-	0.537	-	-	0	0.537	
10	Dawn to Dawn-Vector - 12 months	GJ/mo	92,845	33	0.029	-	33	92,845	0.029	
11	Dawn to Dawn-TCPL - 12 months	GJ/mo	500,000	828	0.138	-	828	500,000	0.138	
Firm Commodity										
Easterly										
12	Union Providing Fuel Dawn to Parkway (TCPL)	GJ	2,423,295	94	-	-	94	2,423,295		
13	Providing Own Fuel Dawn to Dawn-TCPL	GJ	5,000,000	85	-	-	85	5,000,000		
14	Dawn to Dawn-Vector	GJ	18,280,703	251	-	-	251	18,280,703		
15	Ojibway to Dawn	GJ	9,968,577	169	-	-	169	9,968,577		
Westerly - Providing Own Fuel										
16	Parkway to Kirkwall	GJ	-	-	-	-	-	-		
17	Parkway to Dawn	GJ	3,990,264	53	-	-	53	3,990,264		
18	Short-term Transportation	GJ	177,529,686	11,218	-	-	11,218	177,529,686		
19	Exchanges			14,918	-	-	14,918			
20	Other Transactional			1,067	-	-	1,067			
Commodity Charges:										
21	Dawn to Parkway (TCPL)	GJ	2,423,295		0.000	20	20	2,423,295	0.009	
22	Dawn to Dawn-TCPL	GJ	5,000,000		0.000	19	19	5,000,000	0.004	
23	Dawn to Dawn-Vector	GJ	18,280,703		0.000	56	56	18,280,703	0.003	
24	St. Clair / Ojibway / Bluewater & Dawn	GJ	9,968,577		0.000	40	40	9,968,577	0.004	
25	Parkway to Dawn / Kirkwall	GJ	3,990,264		0.000	13	13	3,990,264	0.003	
26	Short-term Transportation		177,529,686			1,232	1,232	177,529,686		
27	Total Rate C1		<u>217,192,525</u>	<u>47,403</u>		<u>1,379</u>	<u>48,783</u>	<u>217,192,525</u>		<u>2.9%</u>
28	Total Ex-Franchise			<u>293,643</u>		<u>6,869</u>	<u>300,512</u>			

Notes:

- (1) EB-2016-0245, Rate Order, Working Papers, Schedule 4, column (t).
- (2) EB-2016-0245, Rate Order, Working Papers, Schedule 4, column (q).
- (3) EB-2016-0245, Appendix A, rates effective January 1, 2017.
- (4) Exhibit 7, Schedule 1, p.3, columns (e).

UNION GAS LIMITED
Union North
Calculation of Supplemental Service Charges
Commissioning and Decommissioning Rates
Effective January 1, 2017

Line No.	Particulars	Including Customer-Related GHG Obligation (3)		Excluding Customer-Related GHG Obligation	
		Union North West (a)	Union North East (b)	Union North West (c)	Union North East (d)
Rate 20 - At 50% Load Factor					
<u>Delivery (cents / m³)</u>					
1	Monthly Demand (1)	28.6326	28.6326	28.6326	28.6326
2	Line 1 x 12 months	343.5912	343.5912	343.5912	343.5912
3	Line 2 / 365 days	0.9413	0.9413	0.9413	0.9413
4	Line 3 @ 50% Load Factor	1.8827	1.8827	1.8827	1.8827
5	Delivery Commodity Charge (1)	3.8912	3.8912	0.5731	0.5731
6	Total Delivery Commissioning and Decommissioning	<u>5.7739</u>	<u>5.7739</u>	<u>2.4558</u>	<u>2.4558</u>
<u>Gas Supply (cents / m³)</u>					
7	Monthly Demand (1)	55.8485	49.7267	55.8485	49.7267
8	Gas Supply Demand - Price Adjustment (1)	-	-	-	-
9	(Line 7 + Line 8) x 12 months	670.1820	596.7204	670.1820	596.7204
10	Line 9 / 365 days	1.8361	1.6349	1.8361	1.6349
11	Line 10 @ 50% Load Factor	<u>3.6722</u>	<u>3.2697</u>	<u>3.6722</u>	<u>3.2697</u>
12	Commodity Transportation 1 (1)	3.5625	2.6079	3.5625	2.6079
13	Commodity Transportation 1 - Price Adjustment	-	-	-	-
14	(Line 12 + Line 13) x (4/5)	<u>2.8500</u>	<u>2.0863</u>	<u>2.8500</u>	<u>2.0863</u>
15	Commodity Transportation 2 (1)	-	-	-	-
16	Line 15 * (1/5)	-	-	-	-
17	Total Commodity Transportation Charge for Commissioning and Decommissioning Rate	<u>6.5222</u>	<u>5.3560</u>	<u>6.5222</u>	<u>5.3560</u>
Rate 100 - At 70% Load Factor					
<u>Delivery (cents / m³)</u>					
18	Monthly Demand (2)	15.1083	15.1083	15.1083	15.1083
19	Line 18 x 12 months	181.2996	181.2996	181.2996	181.2996
20	Line 19 / 365 days	0.4967	0.4967	0.4967	0.4967
21	Line 20 @ 70% Load Factor	0.7096	0.7096	0.7096	0.7096
22	Commodity Charge (2)	3.5390	3.5390	0.2209	0.2209
23	Total Delivery Commissioning and Decommissioning	<u>4.2486</u>	<u>4.2486</u>	<u>0.9305</u>	<u>0.9305</u>
<u>Gas Supply (cents / m³)</u>					
24	Monthly Demand (2)	112.0994	158.4424	112.0994	158.4424
25	Line 24 x 12 months	1,345.1928	1,901.3088	1,345.1928	1,901.3088
26	Line 25 / 365 days	3.6855	5.2091	3.6855	5.2091
27	Line 26 @ 70% Load Factor	<u>5.2649</u>	<u>7.4415</u>	<u>5.2649</u>	<u>7.4415</u>
28	Commodity Transportation 1 (2)	6.2885	9.0613	6.2885	9.0613
29	Line 28 * (3/7)	<u>2.6951</u>	<u>3.8834</u>	<u>2.6951</u>	<u>3.8834</u>
30	Commodity Transportation 2 (2)	-	-	-	-
31	Line 30 * (4/7)	-	-	-	-
32	Total Commodity Transportation Charge for Commissioning and Decommissioning Rate	<u>7.9600</u>	<u>11.3249</u>	<u>7.9600</u>	<u>11.3249</u>

Notes:

- (1) Appendix A, p.3.
- (2) Appendix A, p.4.
- (3) Rates including customer-related GHG obligation will be applied to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
 Union South
 Calculation of Supplemental Service Charges
 Effective January 1, 2017

Line No.	Particulars	cents / m ³ (a)	\$ / GJ (b)
<u>Minimum annual gas supply commodity charge - Rate M4, Rate M5A</u>			
1	Compressor Fuel	0.4662	
2	Transportation Tolls	4.2031	
3	Administration Charge	0.1902	
4	Minimum annual gas supply commodity charge	4.8595	1.252
<u>Gas Supply Commodity Charges</u>			
5	Commodity Cost of Gas	10.9134	
6	FT Transportation Commodity	-	
7	FT Fuel	0.4662	
8	Total Gas Supply Commodity Charge	11.3796	2.932
<u>Firm Gas Supply Service Monthly Demand Charge</u>			
9	FT Demand Charge	230.0635	59.279
<u>Firm Backstop Gas:</u>			
Demand:			
10	Monthly space charge	0.0427	
11	Units required (1)	43	
12	Number of months	12	
			22.0286 (a)
Inventory carrying costs:			
13	Sales WACOG	15.7729	
14	Overrun storage withdrawal	0.3920	
15		16.1649	
16	Units required (m ³)	43	
17	Pre-tax return (%)	8.170%	
			56.7888 (b)
18	Annual demand charge		78.8174 (a) + (b)
19	Number of months		12
20	Monthly demand charge		6.5681
			1.692
Commodity:			
21	Sales WACOG	15.7729	
22	Overrun storage withdrawal	0.3920	
23	Overrun transportation	1.3756	
24	Commodity charge	17.5405	4.520

Notes:

(1) Each unit of added delivery requires 43 m³ of additional inventory.

UNION GAS LIMITED
 Union South
 Calculation of Supplemental Service Charges
 Effective January 1, 2017

Line No.	Particulars	cents / m ³ (a)	\$ / GJ (b)
<u>Reasonable Efforts Backstop Gas:</u>			
1	Rate M1 Block 1 delivery rate plus Rate M1 storage rate	5.4991	
2	Sales WACOG	15.7729	
3		<u>21.2720</u>	<u>5.481</u>
<u>Supplemental Inventory:</u>			
4	Sales WACOG	15.7729	
5	Injection commodity	0.1941	
6	Space charge (p.2, line 10 x 12)	0.5123	
7		<u>16.4793</u>	<u>4.246</u>
	Carrying costs (1/2 year)		
8	(line 7 x p.2, line 17) / 2	0.6732	
9	Total (line 7 + line 8)	<u>17.1525</u>	<u>4.420</u>
<u>Supplemental Gas Sales:</u>			
10	Supplemental inventory	17.1525	
11	Overrun storage withdrawal	0.3920	
12	Overrun transportation	1.3756	
13	Total	<u>18.9201</u>	
<u>Failure to Deliver:</u>			
14	Rate M1 Block 1 delivery rate plus Rate M1 storage rate	5.4991	1.417
15	Failure to Deliver Adjustment	5.1708	1.332
16	Failure to Deliver Charge	<u>10.6699</u>	<u>2.749</u>
<u>Parkway Delivery Commitment Incentive ("PDCI")</u>			
17	Rate M12 Dawn to Parkway demand rate (1)		3.402
18	Line 17 x 12 months		40.8240
19	Line 18 / 365 days		0.1118
20	Rate M12 average Dawn to Parkway (TCPL, EGT) fuel and commodity rate (2)		<u>0.0461</u>
21	Total (-1*(line 19 + line 20))		<u>(0.158)</u>

Notes:

- (1) Appendix A, p.14, line 2, column (c).
- (2) Rate M12 Rate Schedule, Appendix C, p.1, average of Dawn to Parkway (TCPL, EGT) monthly fuel rates.

UNION GAS LIMITED
Union South
Calculation of Supplemental Service Charges
Calculation of Minimum & Maximum Charges
Effective January 1, 2017

Line No.	Particulars	Including Customer-Related GHG Obligation (1) cents / m ³ (b)	Excluding Customer-Related GHG Obligation cents / m ³ (a)
<u>Minimum Charges</u>			
1	Rate M4 (F) Minimum annual delivery commodity charge:		
2	Monthly delivery commodity charge (Rate M4 1st Block)	1.4586	1.4586
3	Gas Supply Admin Charge	0.1902	0.1902
	Minimum annual delivery commodity charge	<u>1.6488</u>	<u>1.6488</u>
4	Rate M4 (I) / M5 Minimum annual delivery commodity charge:		
5	Monthly delivery commodity charge (Rate M5 1st Block)	3.0651	3.0651
6	Gas Supply Admin Charge	0.1902	0.1902
	Minimum annual delivery commodity charge	<u>3.2553</u>	<u>3.2553</u>
<u>Maximum Charges</u>			
7	Rate 25 Interruptible Average Rate 10 Firm Delivery Charge		5.7827
8	Percent of Average Firm Delivery Price		<u>90%</u>
9	Rate 25 Maximum interruptible delivery commodity charge (Excluding Customer-related GHG Obligation)	5.2044	5.2044
10	Customer-related GHG Unit Rate	<u>3.3181</u>	
11	Rate 25 Maximum interruptible delivery commodity charge (Including Customer-related GHG Obligation)	<u>8.5225</u>	
12	Rate M7 Interruptible Maximum interruptible delivery commodity charge:		
13	Rate M7 firm commodity charge	3.8156	0.4975
14	Rate M7 firm demand charge commoditized at a Load Factor of 19.56%	5.1802	5.1802
	Rate M7 maximum interruptible charge	<u>8.9958</u>	<u>5.6777</u>
15	Rate T1 Interruptible Maximum interruptible delivery commodity charge	<u>8.9958</u>	<u>5.6777</u>
16	Rate T2 Interruptible Maximum interruptible delivery commodity charge	<u>8.9958</u>	<u>5.6777</u>
<u>Rate M7 - Commissioning and Decommissioning Rate</u>			
17	Delivery (cents / m ³) Monthly Demand (2)	30.8246	30.8246
18	Annual Demand (line 15 x 12 months)	369.8952	369.8952
19	Daily Demand (line 16 / 365 days)	1.0134	1.0134
20	@ Class Average Firm Load Factor of 27.95%	3.6262	3.6262
21	Delivery Commodity Charge (2)	3.8156	0.4975
22	Delivery - Price Adjustment	-	-
23	Total Delivery Commissioning and Decommissioning (line 18 + line 19 + line 20)	<u>7.4418</u>	<u>4.1237</u>

Notes:

- (1) Rates including customer-related GHG obligation will be applied to customers for whom Union is required to fulfill cap-and-trade obligations.
(2) Appendix A, p.9.

UNION GAS LIMITED
Union South
Calculation of Supplemental Service Charges
Effective January 1, 2017

Line No.	Particulars	Including Customer-Related GHG Obligation (9)		Excluding Customer-Related GHG Obligation	
		Union Supplies Fuel (a)	Customer Supplies Fuel (b)	Union Supplies Fuel (c)	Customer Supplies Fuel (d)
<u>Rate T1 / Rate T2 / Rate T3 - At 100% Load Factor</u>					
Authorized Storage Overrun (\$ / GJ)					
1	Monthly Demand (1)	1.561	1.561	1.561	1.561
2	Annual Demand (line 1 x 12 months)	18.732	18.732	18.732	18.732
3	Daily Demand (line 2 / 365 days)	0.051	0.051	0.051	0.051
4	@ 100% Load Factor	0.051	0.051	0.051	0.051
5	Commodity Charge (2)	0.050	0.008	0.050	0.008
6	Total Storage Overrun (line 4 + line 5)	<u>0.101</u>	<u>0.059</u>	<u>0.101</u>	<u>0.059</u>
 <u>Rate T1 - At 100% Load Factor</u>					
Authorized Transportation Overrun (cents / m ³)					
7	Monthly Demand (3)	35.4376	35.4376	35.4376	35.4376
8	Annual Demand (line 7 x 12 months)	425.2512	425.2512	425.2512	425.2512
9	Daily Demand (line 8 / 365 days)	1.1651	1.1651	1.1651	1.1651
10	@ 100% Load Factor	1.1651	1.1651	1.1651	1.1651
11	Commodity Charge (4)	3.5286	3.4708	0.2105	0.1527
12	Total Transportation Overrun (line 10 + line 11)	<u>4.6937</u>	<u>4.6359</u>	<u>1.3756</u>	<u>1.3178</u>
 <u>Rate T2 - At 100% Load Factor</u>					
Authorized Transportation Overrun (cents / m ³)					
13	Monthly Demand (5)	26.4455	26.4455	26.4455	26.4455
14	Annual Demand (line 13 x 12 months)	317.3460	317.3460	317.3460	317.3460
15	Daily Demand (line 14 / 365 days)	0.8694	0.8694	0.8694	0.8694
16	@ 100% Load Factor	0.8694	0.8694	0.8694	0.8694
17	Commodity Charge (6)	3.4239	3.3702	0.1058	0.0521
18	Total Transportation Overrun (line 16 + line 17)	<u>4.2933</u>	<u>4.2396</u>	<u>0.9752</u>	<u>0.9215</u>
 <u>Rate T3 - At 100% Load Factor</u>					
Authorized Transportation Overrun (cents / m ³)					
19	Monthly Demand (7)	16.7213	16.7213	16.7213	16.7213
20	Annual Demand (line 19 x 12 months)	200.6556	200.6556	200.6556	200.6556
21	Daily Demand (line 20 / 365 days)	0.5497	0.5497	0.5497	0.5497
22	@ 100% Load Factor	0.5497	0.5497	0.5497	0.5497
23	Commodity Charge (8)	3.5240	3.4520	0.2059	0.1339
24	Total Transportation Overrun (line 22+ line 23)	<u>4.0737</u>	<u>4.0017</u>	<u>0.7556</u>	<u>0.6836</u>

Notes:

- (1) Appendix A, p.10.
- (2) Column (a) calculated as WACOG / Heat Value * Overrun Fuel Ratio + Injection Commodity = \$189.432 /10³m³ / 38.81 GJ/10³m³ * 0.861% + \$0.008/GJ.
- (3) Appendix A, p.10.
- (4) Column (a) calculated as WACOG / 10 * Transportation Fuel Ratio + Firm Commodity Transport + Customer-Related GHG Obligation = \$189.432 /10³m³ / 10 * 0.305% + 0.1527 cents/m³ + 3.3181 cents/m³.
- (5) Appendix A, p.11.
- (6) Column (a) calculated as WACOG / 10 * Transportation Fuel Ratio + Firm Commodity Transport + Customer-Related GHG Obligation = \$189.432 /10³m³ / 10 * 0.283% + 0.0521 cents/m³ + 3.3181 cents/m³.
- (7) Appendix A, p.12.
- (8) Column (a) calculated as WACOG / 10 * Transportation Fuel Ratio + Firm Commodity Transport + Customer-Related GHG Obligation = \$189.432 /10³m³ / 10 * 0.380% + 0.1339 cents/m³ + 3.3181 cents/m³.
- (9) Rates including customer-related GHG obligation will be applied to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
Union South
Calculation of Union Supplied Fuel Rates for
In-Franchise Semi-Unbundled Rate T1, Rate T2 and Rate T3
Effective January 1, 2017

Line No.	Particulars	Including Customer-Related GHG Obligation		Excluding Customer-Related GHG Obligation	
		Union Supplies Fuel (a)	Customer Supplies Fuel (b)	Union Supplies Fuel (c)	Customer Supplies Fuel (d)
<u>Rate T1 Transportation Service (cents/m³)</u>					
1	Ontario Landed Reference Price as per EB-2016-0247	18.9432		18.9432	
2	2017 Fuel Ratio as per EB-2016-0245	0.305%		0.305%	
3	Fuel Rate (line 1 x line 2)	0.0578		0.0578	
4	Firm Transportation Commodity Charge	3.4708	3.4708	0.1527	0.1527
5	All Volumes	3.5286	3.4708	0.2105	0.1527
6	Interruptible Transportation Commodity Charge - Maximum	8.9958	8.9380	5.6777	5.6199
<u>Rate T2 Transportation Service (cents/m³)</u>					
7	Ontario Landed Reference Price as per EB-2016-0247	18.9432		18.9432	
8	2017 Fuel Ratio as per EB-2016-0245	0.283%		0.283%	
9	Fuel Rate (line 7 x line 8)	0.0537		0.0537	
10	Firm Transportation Commodity Charge	3.3702	3.3702	0.0521	0.0521
11	All Volumes	3.4239	3.3702	0.1058	0.0521
12	Interruptible Transportation Commodity Charge - Maximum	8.9958	8.9421	5.6777	5.6240
<u>Rate T3 Transportation Service (cents/m³)</u>					
13	Ontario Landed Reference Price as per EB-2016-0247	18.9432		18.9432	
14	2017 Fuel Ratio as per EB-2016-0245	0.380%		0.380%	
15	Fuel Rate (line 13 x line 14)	0.0720		0.0720	
16	Firm Transportation Commodity Charge	3.4520	3.4520	0.1339	0.1339
17	All Volumes	3.5240	3.4520	0.2059	0.1339
<u>Rate T1, Rate T2 & Rate T3 Storage Service (\$/GJ)</u>					
18	Ontario Landed Reference Price as per EB-2016-0247	4.881		4.881	
19	2017 Fuel Ratio as per EB-2016-0245	0.406%		0.406%	
20	Fuel Rate (line 18 x line 19)	0.020		0.020	
21	Storage Commodity Charge	0.0080	0.0080	0.0080	0.0080
22	All Volumes	0.0280	0.0080	0.0280	0.0080
<u>Rate T1, Rate T2 & Rate T3 Annual Firm Injection/Withdrawal Right</u>					
				\$/ GJ (c)	
23	Customer provides deliverability Inventory Rate			1.186 (1)	
	Inventory Carrying Costs				
24	Space			75,177,124 (2)	
25	Inventory Percentage			20%	
26	Inventory (line 24 x line 25)			15,035,425	
27	Ontario Landed Reference Price as per EB-2016-0245			4.881	
28	ICC %			8.2%	
29	Inventory Carrying Costs (line 26 * line 27 * line 28)			5,996	
30	Deliverability Demand Allocation Units			1,332,764 (3)	
31	Line 29 / line 30 x 1000 / 12			0.375	
32	Union provides deliverability Inventory as per EB-2016-0245 (line 23 + line 31)			1.561	

Notes:

- (1) Exhibit 7, Schedule 3, p.8, line 2, column (k).
- (2) EB-2011-0210, Rate Order, Working Papers, Schedule 19, p.2, line 8, column (b).
- (3) EB-2011-0210, Rate Order, Working Papers, Schedule 19, p.1, line 5, column (e).
- (4) Rates including customer-related GHG obligation will be applied to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
Continuity of M13, M16 Monthly Transportation Fuel Ratios and Fuel and Commodity Rates including Parkway Delivery Obligation (PDO) Pass-through
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Line No.	Particulars	VT1 Easterly Dawn to Parkway (TCPL / EGT) With Dawn Compression				VT1 Easterly Dawn to Kirkwall, Lisgar, Parkway (Consumers) With Dawn Compression				VT3 Westerly Parkway to Kirkwall, Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		(a)	(b)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)	
1	April	0.862	0.042	0.009	0.051	0.545	0.027	0.006	0.033	0.157	0.008	0.003	0.011
2	May	0.612	0.030	0.009	0.039	0.370	0.018	0.006	0.024	0.157	0.008	0.003	0.011
3	June	0.508	0.025	0.009	0.034	0.271	0.013	0.006	0.019	0.398	0.019	0.003	0.022
4	July	0.494	0.024	0.009	0.033	0.259	0.013	0.006	0.019	0.396	0.019	0.003	0.022
5	August	0.393	0.019	0.009	0.028	0.158	0.008	0.006	0.014	0.396	0.019	0.003	0.022
6	September	0.389	0.019	0.009	0.028	0.158	0.008	0.006	0.014	0.392	0.019	0.003	0.022
7	October	0.739	0.036	0.009	0.045	0.464	0.023	0.006	0.029	0.157	0.008	0.003	0.011
8	November	0.882	0.043	0.009	0.052	0.622	0.030	0.006	0.036	0.157	0.008	0.003	0.011
9	December	0.995	0.049	0.009	0.058	0.733	0.036	0.006	0.042	0.157	0.008	0.003	0.011
10	January	1.147	0.056	0.009	0.065	0.870	0.042	0.006	0.048	0.157	0.008	0.003	0.011
11	February	1.089	0.053	0.009	0.062	0.820	0.040	0.006	0.046	0.157	0.008	0.003	0.011
12	March	1.018	0.050	0.009	0.059	0.736	0.036	0.006	0.042	0.157	0.008	0.003	0.011

Line No.	Particulars	M12-X Easterly Kirkwall to Parkway (TCPL / EGT)				M12-X Easterly Kirkwall to Lisgar, Parkway (Consumers)				M12-X Westerly Parkway to Kirkwall, Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		(a)	(b)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)	
13	April	0.474	0.023	0.005	0.028	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
14	May	0.399	0.019	0.005	0.024	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
15	June	0.394	0.019	0.005	0.024	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
16	July	0.392	0.019	0.005	0.024	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
17	August	0.392	0.019	0.005	0.024	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
18	September	0.388	0.019	0.005	0.024	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
19	October	0.432	0.021	0.005	0.026	0.157	0.008	0.002	0.010	0.293	0.014	0.003	0.017
20	November	0.418	0.020	0.005	0.025	0.157	0.008	0.002	0.010	0.157	0.008	0.003	0.011
21	December	0.420	0.020	0.005	0.025	0.157	0.008	0.002	0.010	0.157	0.008	0.003	0.011
22	January	0.434	0.021	0.005	0.026	0.157	0.008	0.002	0.010	0.157	0.008	0.003	0.011
23	February	0.426	0.021	0.005	0.026	0.157	0.008	0.002	0.010	0.157	0.008	0.003	0.011
24	March	0.439	0.021	0.005	0.026	0.157	0.008	0.002	0.010	0.157	0.008	0.003	0.011

Notes:
(1) EB-2016-0245, Rate Order, Working Papers, Schedule 21.
(2) Exhibit 7, Schedule 1, p.3, column (g).

UNION GAS LIMITED
 Continuity of M12 Monthly Transportation Authorized Overrun Fuel Ratios and Fuel and Commodity Rates including Parkway Delivery Obligation (PDO) Pass-through
 Firm or Interruptible Transportation Commodity
 Effective January 1, 2017

Line No.	Particulars	VT1 Easterly Dawn to Parkway (TCPL / EGT) With Dawn Compression				VT1 Easterly Dawn to Kirkwall, Lisgar, Parkway (Consumers) With Dawn Compression				VT3 Westerly Parkway to Kirkwall, Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)
1	April	1.479	0.184	0.009	0.193	1.162	0.151	0.006	0.157	0.774	0.150	0.003	0.153
2	May	1.228	0.172	0.009	0.181	0.987	0.142	0.006	0.148	0.774	0.150	0.003	0.153
3	June	1.125	0.167	0.009	0.176	0.888	0.138	0.006	0.144	1.015	0.161	0.003	0.164
4	July	1.111	0.166	0.009	0.175	0.876	0.137	0.006	0.143	1.013	0.161	0.003	0.164
5	August	1.010	0.161	0.009	0.170	0.775	0.132	0.006	0.138	1.013	0.161	0.003	0.164
6	September	1.005	0.161	0.009	0.170	0.775	0.132	0.006	0.138	1.009	0.161	0.003	0.164
7	October	1.356	0.178	0.009	0.187	1.081	0.147	0.006	0.153	0.774	0.150	0.003	0.153
8	November	1.499	0.185	0.009	0.194	1.239	0.155	0.006	0.161	0.774	0.150	0.003	0.153
9	December	1.612	0.191	0.009	0.200	1.350	0.160	0.006	0.166	0.774	0.150	0.003	0.153
10	January	1.764	0.198	0.009	0.207	1.486	0.167	0.006	0.173	0.774	0.150	0.003	0.153
11	February	1.706	0.195	0.009	0.204	1.437	0.164	0.006	0.170	0.774	0.150	0.003	0.153
12	March	1.635	0.192	0.009	0.201	1.353	0.160	0.006	0.166	0.774	0.150	0.003	0.153
Line No.	Particulars	M12-X Easterly Kirkwall to Parkway (TCPL / EGT)				M12-X Easterly Kirkwall to Lisgar, Parkway (Consumers)				M12-X Westerly Parkway to Kirkwall, Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)
13	April	1.091	0.193	0.005	0.198	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
14	May	1.016	0.189	0.005	0.194	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
15	June	1.011	0.189	0.005	0.194	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
16	July	1.009	0.189	0.005	0.194	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
17	August	1.009	0.189	0.005	0.194	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
18	September	1.005	0.188	0.005	0.193	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
19	October	1.049	0.191	0.005	0.196	0.774	0.177	0.002	0.179	0.910	0.184	0.003	0.187
20	November	1.035	0.190	0.005	0.195	0.774	0.177	0.002	0.179	0.774	0.177	0.003	0.180
21	December	1.037	0.190	0.005	0.195	0.774	0.177	0.002	0.179	0.774	0.177	0.003	0.180
22	January	1.051	0.191	0.005	0.196	0.774	0.177	0.002	0.179	0.774	0.177	0.003	0.180
23	February	1.043	0.190	0.005	0.195	0.774	0.177	0.002	0.179	0.774	0.177	0.003	0.180
24	March	1.056	0.191	0.005	0.196	0.774	0.177	0.002	0.179	0.774	0.177	0.003	0.180

Notes:
 (1) EB-2016-0245, Rate Order, Working Papers, Schedule 21.
 (2) Exhibit 7, Schedule 1, p.3, column (g).

UNION GAS LIMITED

Continuity of M13, M16 Monthly Transportation Fuel Ratios and Fuel and Commodity Rates including Parkway Delivery Obligation (PDO) Pass-through Firm or Interruptible Transportation Commodity Effective January 1, 2017

Line No.	Particulars	M13 Delivery Commodity Charge				M13 Authorized overrun - Delivery Commodity Charge			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)
1		0.157	0.008	0.002	0.010	0.157	0.077	0.002	0.079

Line No.	Particulars	M16 Fuel Charges to Dawn				M16 Fuel Charges to Pool			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)
2	East	0.157	0.008	0.002	0.010	0.186	0.009	0.002	0.011
3	West	0.157	0.008	0.002	0.010	0.447	0.022	0.005	0.027

Line No.	Particulars	M16 Authorized overrun - Fuel Charges to Dawn				M16 Authorized Overrun - Fuel Charges to Pool			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)
4	East	0.157	0.067	0.002	0.069	0.186	0.034	0.002	0.036
5	West	0.157	0.077	0.002	0.079	0.447	0.056	0.005	0.061

Note:

- (1) EB-2016-0245, Rate Order, Working Papers, Schedule 21.
- (2) Exhibit 7, Schedule 1, p.3, column (g).

UNION GAS LIMITED

Continuity of C1 Monthly Transportation Fuel Ratios and Fuel and Commodity Rates including Parkway Delivery Obligation (PDO) Pass-through
Firm or Interruptible Transportation Commodity
Effective January 1, 2017

Line No.	Particulars	C1 St. Clair / Dawn				C1 Ojibway / Dawn				C1 Bluewater / Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (l) = (j+k)
		2017 Fuel Ratio (%) (1) (a)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (b)			2017 Fuel Ratio (%) (1) (e)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (f)			2017 Fuel Ratio (%) (1) (i)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (j)		
1	Summer	0.207	0.010	0.004	0.014	0.447	0.022	0.004	0.026	0.207	0.010	0.004	0.014
2	Winter	0.266	0.013	0.004	0.017	0.303	0.015	0.004	0.019	0.266	0.013	0.004	0.017
		C1 Dawn to Dawn-TCPL				C1 Dawn to Dawn-Vector							
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (c)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (g)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)				
		2017 Fuel Ratio (%) (1) (a)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (b)			2017 Fuel Ratio (%) (1) (e)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (f)						
3	Summer	0.157	0.008	0.004	0.012	0.339	0.017	0.003	0.020				
4	Winter	0.351	0.017	0.004	0.021	0.157	0.008	0.003	0.011				
		C1 Parkway to Kirkwall				C1 Parkway to Dawn				C1 Kirkwall to Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (c)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (g)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (k)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (l) = (j+k)
		2017 Fuel Ratio (%) (1) (a)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (b)			2017 Fuel Ratio (%) (1) (e)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (f)			2017 Fuel Ratio (%) (1) (i)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (j)		
5	Summer	0.293	0.014	0.003	0.017	0.293	0.014	0.003	0.017	0.157	0.008	0.002	0.010
6	Winter	0.157	0.008	0.003	0.011	0.157	0.008	0.003	0.011	0.157	0.008	0.002	0.010
		C1 Dawn to Kirkwall				C1 Dawn to Parkway (TCPL)				C1 Kirkwall to Parkway (TCPL)			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (c)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (d) = (b+c)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (g)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (h) = (f+g)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2) (k)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ) (l) = (j+k)
		2017 Fuel Ratio (%) (1) (a)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (b)			2017 Fuel Ratio (%) (1) (e)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (f)			2017 Fuel Ratio (%) (1) (i)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1) (j)		
7	Summer	0.318	0.016	0.006	0.022	0.571	0.028	0.009	0.037	0.410	0.020	0.005	0.025
8	Winter	0.756	0.037	0.006	0.043	1.026	0.050	0.009	0.059	0.427	0.021	0.005	0.026

Note:

- (1) EB-2016-0245, Rate Order, Working Papers, Schedule 21.
- (2) Exhibit 7, Schedule 1, p.3, column (g).

UNION GAS LIMITED
Continuity of C1 Monthly Transportation Authorized Overrun Fuel Ratios and Fuel and Commodity Rates including Parkway Delivery Obligation (PDO) Pass-through
Firm or Interruptible Transportation Commodity
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Line No.	Particulars	C1 Authorized Overrun - St. Clair / Dawn				C1 Authorized Overrun - Ojibway / Dawn				C1 Authorized Overrun - Bluewater / Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)
1	Summer	0.207	0.044	0.004	0.048	0.447	0.056	0.004	0.060	0.207	0.044	0.004	0.048
2	Winter	0.266	0.047	0.004	0.051	0.303	0.049	0.004	0.053	0.266	0.047	0.004	0.051

Line No.	Particulars	C1 Authorized Overrun - Dawn to Dawn-TCPL				C1 Authorized Overrun - Dawn to Dawn-Vector			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)
3	Summer	0.157	0.008	0.004	0.012	0.339	0.017	0.003	0.020
4	Winter	0.351	0.017	0.004	0.021	0.157	0.008	0.003	0.011

Line No.	Particulars	C1 Authorized Overrun - Parkway to Kirkwall				C1 Authorized Overrun - Parkway to Dawn				C1 Authorized Overrun - Kirkwall to Dawn			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)
5	Summer	0.910	0.156	0.003	0.159	0.910	0.156	0.003	0.159	0.157	0.056	0.002	0.058
6	Winter	0.774	0.150	0.003	0.153	0.774	0.150	0.003	0.153	0.157	0.056	0.002	0.058

Line No.	Particulars	C1 Authorized Overrun - Dawn to Kirkwall				C1 Authorized Overrun - Dawn to Parkway (TCPL)				C1 Authorized Overrun - Kirkwall to Parkway (TCPL)			
		EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)	EB-2016-0245		Facility-related GHG Obligation Rate (\$/GJ) (2)	Proposed 2017 Fuel and Commodity Rate (incl. GHG) (\$/GJ)
		2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)			2017 Fuel Ratio (%) (1)	2017 Fuel and Commodity Rate (excl. GHG) (\$/GJ) (1)		
		(a)	(b)	(c)	(d) = (b+c)	(e)	(f)	(g)	(h) = (f+g)	(i)	(j)	(k)	(l) = (j+k)
7	Summer	0.935	0.140	0.006	0.146	1.188	0.170	0.009	0.179	1.027	0.068	0.005	0.073
8	Winter	1.373	0.161	0.006	0.167	1.643	0.192	0.009	0.201	1.044	0.069	0.005	0.074

Note:
(1) EB-2016-0245, Rate Order, Working Papers, Schedule 21.
(2) Exhibit 7, Schedule 1, p.3, column (g).

UNION GAS LIMITED
Union South
General Service Customer Bill Impacts

Line No.		Rate M1 - Residential (Annual Consumption of 2,200 m ³)			Rate M2 - Commercial (Annual Consumption of 73,000 m ³)		
		EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1) (a)	EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1) (b)	Impact (\$) (c) = (b) - (a)	EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1) (d)	EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1) (e)	Impact (\$) (f) = (e) - (d)
	<u>Delivery Charges</u>						
1	Monthly Charge	252.00	252.00	-	840.00	840.00	-
	Delivery Commodity Charge						
2	Customer-Related GHG Obligation	-	73.00	73.00	-	2,422.23	2,422.23
3	Other Delivery Commodity	98.84	99.80	0.96	3,354.03	3,377.89	23.86
4	Storage Services	15.75	15.75	-	456.38	456.38	-
5	Total Delivery Charge	366.59	440.55	73.96	4,650.41	7,096.50	2,446.09
	<u>Supply Charges</u>						
6	Transportation to Union	92.45	92.45	-	3,068.27	3,068.27	-
7	Commodity & Fuel (2)	254.54	254.54	-	8,445.98	8,445.98	-
8	Total Gas Supply Charge	346.99	346.99	-	11,514.25	11,514.25	-
	<u>Total Bill</u>						
9	Including Customer-Related GHG Obligation	713.58	787.54	73.96	16,164.66	18,610.75	2,446.09
10	Excluding Customer-Related GHG Obligation	713.58	714.54	0.96	16,164.66	16,188.52	23.86
	<u>Impacts</u>						
	Sales Service						
11	Including Customer-Related GHG Obligation (line 9)			73.96			2,446.09
12	Excluding Customer-Related GHG Obligation (line 10)			0.96			23.86
	Direct Purchase						
13	Including Customer-Related GHG Obligation (line 5)			73.96			2,446.09
14	Excluding Customer-Related GHG Obligation (line 5 - line 2)			0.96			23.86

Notes:

(1) Excludes temporary charges/(credits) and prospective recovery.

(2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
 Union North
 General Service Customer Bill Impacts

Line No.	Union North West Zone Rate 01 - Residential (Annual Consumption of 2,200 m ³)			Union North West Zone Rate 01 - Residential (Annual Consumption of 2,200 m ³)			
	Fort Frances District EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1)	Union North West Zone EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1)	Impact (\$) (c) = (b) - (a)	Western Zone EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1)	Union North West Zone EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1)	Impact (\$) (f) = (e) - (d)	
	(a)	(b)		(d)	(e)		
	<u>Delivery Charges</u>						
1	Monthly Charge	252.00	252.00	-	252.00	252.00	-
	Delivery Commodity Charge						
2	Customer-Related GHG Obligation	-	73.00	73.00	-	73.00	73.00
3	Other Delivery Commodity	200.35	201.47	1.12	200.35	201.47	1.12
4	Total Delivery Charge	452.35	526.47	74.12	452.35	526.47	74.12
	<u>Supply Charges</u>						
5	Transportation to Union	148.04	148.04	-	148.04	148.04	-
6	Storage Services	45.29	45.29	-	45.29	45.29	-
7	Subtotal	193.33	193.33	-	193.33	193.33	-
8	Commodity (2)	247.98	247.98	-	249.78	249.78	-
9	Total Gas Supply Charge	441.31	441.31	-	443.11	443.11	-
	<u>Total Bill</u>						
10	Including Customer-Related GHG Obligation	893.66	967.78	74.12	895.46	969.58	74.12
11	Excluding Customer-Related GHG Obligation	893.66	894.78	1.12	895.46	896.58	1.12
	<u>Impacts</u>						
	<u>Sales Service</u>						
12	Including Customer-Related GHG Obligation (line 10)			74.12			74.12
13	Excluding Customer-Related GHG Obligation (line 11)			1.12			1.12
	<u>Direct Purchase</u>						
14	Including Customer-Related GHG Obligation (line 4 + line 7)			74.12			74.12
15	Excluding Customer-Related GHG Obligation (line 4 + ine 7 - line 2)			1.12			1.12

Notes:

(1) Excludes temporary charges/(credits) and prospective recovery.

(2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
 Union North
General Service Customer Bill Impacts

Line No.		Union North West Zone Rate 01 - Residential (Annual Consumption of 2,200 m ³)			Union North East Zone Rate 01 - Residential (Annual Consumption of 2,200 m ³)		
		Northern Zone (Union SSMDA) EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1) (a)	Union North West Zone EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1) (b)	Impact (\$) (c) = (b) - (a)	Northern Zone (Union NDA) EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1) (d)	Union North East Zone EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1) (e)	Impact (\$) (f) = (e) - (d)
	<u>Delivery Charges</u>						
1	Monthly Charge	252.00	252.00	-	252.00	252.00	-
	Delivery Commodity Charge						
2	Customer-Related GHG Obligation	-	73.00	73.00	-	73.00	73.00
3	Other Delivery Commodity	200.35	201.47	1.12	200.35	201.47	1.12
4	Total Delivery Charge	452.35	526.47	74.12	452.35	526.47	74.12
	<u>Supply Charges</u>						
5	Transportation to Union	148.04	148.04	-	65.24	65.24	-
6	Storage Services	45.29	45.29	-	145.67	145.67	-
7	Subtotal	193.33	193.33	-	210.91	210.91	-
8	Commodity (2)	252.54	252.54	-	252.54	252.54	-
9	Total Gas Supply Charge	445.87	445.87	-	463.45	463.45	-
	<u>Total Bill</u>						
10	Including Customer-Related GHG Obligation	898.22	972.34	74.12	915.80	989.92	74.12
11	Excluding Customer-Related GHG Obligation	898.22	899.34	1.12	915.80	916.92	1.12
	<u>Impacts</u>						
	Sales Service						
12	Including Customer-Related GHG Obligation (line 10)			74.12			74.12
13	Excluding Customer-Related GHG Obligation (line 11)			1.12			1.12
	Direct Purchase						
14	Including Customer-Related GHG Obligation (line 4 + line 7)			74.12			74.12
15	Excluding Customer-Related GHG Obligation (line 4 + ine 7 - line 2)			1.12			1.12

Notes:

- (1) Excludes temporary charges/(credits) and prospective recovery.
 (2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
Union North
General Service Customer Bill Impacts

Line No.	Union North East Zone Rate 01 - Residential (Annual Consumption of 2,200 m ³)			
	Eastern Zone EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1)	Union North East Zone EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1)	Impact (\$) (c) = (b) - (a)	
	(a)	(b)	(c) = (b) - (a)	
	<u>Delivery Charges</u>			
1	Monthly Charge	252.00	252.00	-
	Delivery Commodity Charge			
2	Customer-Related GHG Obligation	-	73.00	73.00
3	Other Delivery Commodity	200.35	201.47	1.12
4	Total Delivery Charge	452.35	526.47	74.12
	<u>Supply Charges</u>			
5	Transportation to Union	65.24	65.24	-
6	Storage Services	145.67	145.67	-
7	Subtotal	210.91	210.91	-
8	Commodity (2)	254.77	254.77	-
9	Total Gas Supply Charge	465.68	465.68	-
	<u>Total Bill</u>			
10	Including Customer-Related GHG Obligation	918.03	992.15	74.12
11	Excluding Customer-Related GHG Obligation	918.03	919.15	1.12
	<u>Impacts</u>			
12	Sales Service			
13	Including Customer-Related GHG Obligation (line 10)			74.12
	Excluding Customer-Related GHG Obligation (line 11)			1.12
	Direct Purchase			
14	Including Customer-Related GHG Obligation (line 4 + line 7)			74.12
15	Excluding Customer-Related GHG Obligation (line 4 + ine 7 - line 2)			1.12

Notes:

(1) Excludes temporary charges/(credits) and prospective recovery.

(2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
Union North
General Service Customer Bill Impacts

Line No.		Union North West Rate 10 - Commercial / Industrial (Annual Consumption of 93,000 m ³)			Union North West Rate 10 - Commercial / Industrial (Annual Consumption of 93,000 m ³)		
		Fort Frances District EB-2016-0245 Proposed 01-Jan-17 Bill (\$) (1)	Union North West Zone EB-2016-0296 Proposed 01-Jan-17 Bill (\$) (1)	Impact (\$) (c) = (b) - (a)	Western Zone EB-2016-0245 Proposed 01-Jan-17 Bill (\$) (1)	Union North West Zone EB-2016-0296 Proposed 01-Jan-17 Bill (\$) (1)	Impact (\$) (f) = (e) - (d)
		(a)	(b)	(c) = (b) - (a)	(d)	(e)	(f) = (e) - (d)
	<u>Delivery Charges</u>						
1	Monthly Charge	840.00	840.00	-	840.00	840.00	-
	Delivery Commodity Charge						
2	Customer-Related GHG Obligation	-	3,085.83	3,085.83	-	3,085.83	3,085.83
3	Other Delivery Commodity	5,974.97	6,010.11	35.14	5,974.97	6,010.11	35.14
4	Total Delivery Charge	6,814.97	9,935.94	3,120.97	6,814.97	9,935.94	3,120.97
	<u>Supply Charges</u>						
5	Transportation to Union	5,480.39	5,480.39	-	5,480.39	5,480.39	-
6	Storage Services	1,441.05	1,441.05	-	1,441.05	1,441.05	-
7	Subtotal	6,921.44	6,921.44	-	6,921.44	6,921.44	-
8	Commodity (2)	10,482.78	10,482.78	-	10,558.66	10,558.66	-
9	Total Gas Supply Charge	17,404.22	17,404.22	-	17,480.10	17,480.10	-
	<u>Total Bill</u>						
10	Including Customer-Related GHG Obligation	24,219.19	27,340.16	3,120.97	24,295.07	27,416.04	3,120.97
11	Excluding Customer-Related GHG Obligation	24,219.19	24,254.33	35.14	24,295.07	24,330.21	35.14
	<u>Impacts</u>						
	Sales Service						
12	Including Customer-Related GHG Obligation (line 10)			3,120.97			3,120.97
13	Excluding Customer-Related GHG Obligation (line 11)			35.14			35.14
	Direct Purchase						
14	Including Customer-Related GHG Obligation (line 4 + line 7)			3,120.97			3,120.97
15	Excluding Customer-Related GHG Obligation (line 4 + line 7 - line 2)			35.14			35.14

Notes:

(1) Excludes temporary charges/(credits) and prospective recovery.

(2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
Union North
General Service Customer Bill Impacts

Line No.		Union North West Rate 10 - Commercial / Industrial (Annual Consumption of 93,000 m ³)			Union North East Rate 10 - Commercial / Industrial (Annual Consumption of 93,000 m ³)		
		Northern Zone (Union SSMDA) EB-2016-0245 Proposed 01-Jan-17 Bill (\$) (1)	Union North West Zone EB-2016-0296 Proposed 01-Jan-17 Bill (\$) (1)	Impact (\$) (c) = (b) - (a)	Northern Zone (Union NDA) EB-2016-0245 Proposed 01-Jan-17 Bill (\$) (1)	Union North East Zone EB-2016-0296 Proposed 01-Jan-17 Bill (\$) (1)	Impact (\$) (f) = (e) - (d)
		(a)	(b)	(c) = (b) - (a)	(d)	(e)	(f) = (e) - (d)
	<u>Delivery Charges</u>						
1	Monthly Charge	840.00	840.00	-	840.00	840.00	-
	Delivery Commodity Charge						
2	Customer-Related GHG Obligation	-	3,085.83	3,085.83	-	3,085.83	3,085.83
3	Other Delivery Commodity	5,974.97	6,010.11	35.14	5,974.97	6,010.11	35.14
4	Total Delivery Charge	6,814.97	9,935.94	3,120.97	6,814.97	9,935.94	3,120.97
	<u>Supply Charges</u>						
5	Transportation to Union	5,480.39	5,480.39	-	2,539.16	2,539.16	-
6	Storage Services	1,441.05	1,441.05	-	4,348.88	4,348.88	-
7	Subtotal	6,921.44	6,921.44	-	6,888.04	6,888.04	-
8	Commodity	10,676.11	10,676.11	-	10,676.11	10,676.11	-
9	Total Gas Supply Charge	17,597.55	17,597.55	-	17,564.15	17,564.15	-
	<u>Total Bill</u>						
10	Including Customer-Related GHG Obligation	24,412.52	27,533.49	3,120.97	24,379.12	27,500.09	3,120.97
11	Excluding Customer-Related GHG Obligation	24,412.52	24,447.66	35.14	24,379.12	24,414.26	35.14
	<u>Impacts</u>						
	Sales Service						
12	Including Customer-Related GHG Obligation (line 10)			3,120.97			3,120.97
13	Excluding Customer-Related GHG Obligation (line 11)			35.14			35.14
	Direct Purchase						
14	Including Customer-Related GHG Obligation (line 4 + line 7)			3,120.97			3,120.97
15	Excluding Customer-Related GHG Obligation (line 4 + line 7 - line 2)			35.14			35.14

Notes:

- (1) Excludes temporary charges/(credits) and prospective recovery.
(2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
Union North
General Service Customer Bill Impacts

Line No.		Union North East Rate 10 - Commercial / Industrial (Annual Consumption of 93,000 m ³)		
		Eastern Zone EB-2016-0245 Proposed 01-Jan-17 Total Bill (\$) (1) (a)	Union North East Zone EB-2016-0296 Proposed 01-Jan-17 Total Bill (\$) (1) (b)	Impact (\$) (c) = (b) - (a)
	<u>Delivery Charges</u>			
1	Monthly Charge	840.00	840.00	-
	Delivery Commodity Charge			
2	Customer-Related GHG Obligation	-	3,085.83	3,085.83
3	Other Delivery Commodity	5,974.97	6,010.11	35.14
4	Total Delivery Charge	6,814.97	9,935.94	3,120.97
	<u>Supply Charges</u>			
5	Transportation to Union	2,539.16	2,539.16	-
6	Storage Services	4,348.88	4,348.88	-
7	Subtotal	6,888.04	6,888.04	-
8	Commodity	10,769.41	10,769.41	-
9	Total Gas Supply Charge	17,657.45	17,657.45	-
	<u>Total Bill</u>			
10	Including Customer-Related GHG Obligation	24,472.42	27,593.39	3,120.97
11	Excluding Customer-Related GHG Obligation	24,472.42	24,507.56	35.14
	<u>Impacts</u>			
	Sales Service			
12	Including Customer-Related GHG Obligation (line 10)			3,120.97
13	Excluding Customer-Related GHG Obligation (line 11)			35.14
	Direct Purchase			
14	Including Customer-Related GHG Obligation (line 4 + line 7)			3,120.97
15	Excluding Customer-Related GHG Obligation (line 4 + ine 7 - line 2)			35.14

Notes:

- (1) Excludes temporary charges/(credits) and prospective recovery.
(2) The commodity and fuel rates are based on October 2016 QRAM (EB-2016-0247) and have not been updated to reflect the approved changes to the Union North zones. Union will implement the Union North commodity and fuel changes with the January 2017 QRAM.

UNION GAS LIMITED
Calculation of Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	EB-2016-0245 (1) Proposed		Proposed - EB-2016-0296 Excluding Customer-Related GHG Obligation				Proposed - EB-2016-0296 Including Customer-Related GHG Obligation (2)			
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Bill Impact	Total Bill	Unit Rate	Total Bill Change	Bill Impact
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%)	(\$)	(cents/m ³)	(\$)	(%)
		(a)	(b)	(c)	(d)	(e) = (c-a)	(f) = (e/a)	(g)	(h)	(i) = (g-a)	(j) = (i/a)
<u>Small Rate 01</u>											
1	Delivery Charges	452	20.5614	453	20.6123	1.12	0.2%	526	23.9305	74.12	16.4%
2	Gas Supply Charges	466	21.1673	466	21.1673	-	0.0%	466	21.1673	-	0.0%
3	Total Bill	918	41.7287	919	41.7796	1.12	0.1%	992	45.0977	74.12	8.1%
4	Sales Service Impact					1.12	0.1%			74.12	8.1%
5	Bundled-T (Direct Purchase) Impact					1.12	0.2%			74.12	11.2%
<u>Small Rate 10</u>											
6	Delivery Charges	4,807	8.0111	4,829	8.0489	23	0.5%	6,820	11.3670	2,014	41.9%
7	Gas Supply Charges	11,392	18.9865	11,392	18.9865	-	0.0%	11,392	18.9865	-	0.0%
8	Total Bill	16,199	26.9976	16,221	27.0354	23	0.1%	18,212	30.3535	2,014	12.4%
9	Sales Service Impact					23	0.1%			2,014	12.4%
10	Bundled-T (Direct Purchase) Impact					23	0.2%			2,014	21.8%
<u>Large Rate 10</u>											
11	Delivery Charges	15,828	6.3313	15,923	6.3691	95	0.6%	24,218	9.6872	8,390	53.0%
12	Gas Supply Charges	47,466	18.9865	47,466	18.9865	-	0.0%	47,466	18.9865	-	0.0%
13	Total Bill	63,295	25.3178	63,389	25.3556	95	0.1%	71,684	28.6737	8,390	13.3%
14	Sales Service Impact					95	0.1%			8,390	13.3%
15	Bundled-T (Direct Purchase) Impact					95	0.3%			8,390	24.4%
<u>Small Rate 20</u>											
16	Delivery Charges	75,663	2.5221	75,909	2.5303	246	0.3%	175,452	5.8484	99,789	131.9%
17	Gas Supply Charges	476,292	15.8764	476,292	15.8764	-	0.0%	476,292	15.8764	-	0.0%
18	Total Bill	551,956	18.3985	552,202	18.4067	246	0.0%	651,745	21.7248	99,789	18.1%
19	Sales Service Impact					246	0.0%			99,789	18.1%
20	Bundled-T (Direct Purchase) Impact					246	0.1%			99,789	46.9%
<u>Large Rate 20</u>											
21	Delivery Charges	294,134	1.9609	295,364	1.9691	1,230	0.4%	793,079	5.2872	498,945	169.6%
22	Gas Supply Charges	2,283,610	15.2241	2,283,610	15.2241	-	0.0%	2,283,610	15.2241	-	0.0%
23	Total Bill	2,577,744	17.1850	2,578,974	17.1932	1,230	0.0%	3,076,689	20.5113	498,945	19.4%
24	Sales Service Impact					1,230	0.0%			498,945	19.4%
25	Bundled-T (Direct Purchase) Impact					1,230	0.1%			498,945	56.6%
<u>Average Rate 25</u>											
26	Delivery Charges	61,764	2.7149	61,803	2.7166	39	0.1%	137,289	6.0347	75,525	122.3%
27	Gas Supply Charges	293,771	12.9130	293,771	12.9130	-	0.0%	293,771	12.9130	-	0.0%
28	Total Bill	355,535	15.6279	355,573	15.6296	39	0.0%	431,060	18.9477	75,525	21.2%
29	Sales Service Impact					39	0.0%			75,525	21.2%
30	T-Service (Direct Purchase) Impact					39	0.1%			75,525	122.3%
<u>Small Rate 100</u>											
31	Delivery Charges	257,308	0.9530	257,416	0.9534	108	0.0%	1,153,303	4.2715	895,995	348.2%
32	Gas Supply Charges	5,949,940	22.0368	5,949,940	22.0368	-	0.0%	5,949,940	22.0368	-	0.0%
33	Total Bill	6,207,247	22.9898	6,207,355	22.9902	108	0.0%	7,103,242	26.3083	895,995	14.4%
34	Sales Service Impact					108	0.0%			895,995	14.4%
35	T-Service (Direct Purchase) Impact					108	0.0%			895,995	348.2%
<u>Large Rate 100</u>											
36	Delivery Charges	2,086,720	0.8695	2,087,680	0.8699	960	0.0%	10,051,120	4.1880	7,964,400	381.7%
37	Gas Supply Charges	51,762,036	21.5675	51,762,036	21.5675	-	0.0%	51,762,036	21.5675	-	0.0%
38	Total Bill	53,848,756	22.4370	53,849,716	22.4374	960	0.0%	61,813,156	25.7555	7,964,400	14.8%
39	Sales Service Impact					960	0.0%			7,964,400	14.8%
40	T-Service (Direct Purchase) Impact					960	0.0%			7,964,400	381.7%

Notes:

(1) Reflects proposed rates per 2017 Rates filing (EB-2016-0245), Appendix A.

(2) Bill impacts including customer-related GHG obligation are applicable to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
Calculation of Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2016-0245 (1) Proposed		Proposed - EB-2016-0296 Excluding Customer-Related GHG Obligation				Proposed - EB-2016-0296 Including Customer-Related GHG Obligation (2)			
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Bill Impact	Total Bill	Unit Rate	Total Bill Change	Bill Impact
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%)	(\$)	(cents/m ³)	(\$)	(%)
		(a)	(b)	(c)	(d)	(e) = (c-a)	(f) = (e/a)	(g)	(h)	(i) = (g-a)	(j) = (i/a)
<u>Small Rate M1</u>											
1	Delivery Charges	367	16.6632	368	16.7068	0.96	0.3%	441	20.0250	73.96	20.2%
2	Gas Supply Charges	347	15.7723	347	15.7723	-	0.0%	347	15.7723	-	0.0%
3	Total Bill	714	32.4355	715	32.4791	0.96	0.1%	788	35.7973	73.96	10.4%
4	Sales Service Impact					0.96	0.1%			73.96	10.4%
5	Direct Purchase Impact					0.96	0.3%			73.96	20.2%
<u>Small Rate M2</u>											
6	Delivery Charges	3,983	6.6384	4,003	6.6711	20	0.5%	5,994	9.9892	2,011	50.5%
7	Gas Supply Charges	9,464	15.7729	9,464	15.7729	-	0.0%	9,464	15.7729	-	0.0%
8	Total Bill	13,447	22.4113	13,466	22.4440	20	0.1%	15,457	25.7621	2,011	15.0%
9	Sales Service Impact					20	0.1%			2,011	15.0%
10	Direct Purchase Impact					20	0.5%			2,011	50.5%
<u>Large Rate M2</u>											
11	Delivery Charges	13,401	5.3606	13,482	5.3927	80	0.6%	21,777	8.7108	8,376	62.5%
12	Gas Supply Charges	39,432	15.7729	39,432	15.7729	-	0.0%	39,432	15.7729	-	0.0%
13	Total Bill	52,834	21.1335	52,914	21.1656	80	0.2%	61,209	24.4837	8,376	15.9%
14	Sales Service Impact					80	0.2%			8,376	15.9%
15	Direct Purchase Impact					80	0.6%			8,376	62.5%
<u>Small Rate M4</u>											
16	Delivery Charges	45,178	5.1632	45,590	5.2103	412	0.9%	74,624	8.5284	29,445	65.2%
17	Gas Supply Charges	138,013	15.7729	138,013	15.7729	-	0.0%	138,013	15.7729	-	0.0%
18	Total Bill	183,191	20.9361	183,603	20.9832	412	0.2%	212,637	24.3013	29,445	16.1%
19	Sales Service Impact					412	0.2%			29,445	16.1%
20	Direct Purchase Impact					412	0.9%			29,445	65.2%
<u>Large Rate M4</u>											
21	Delivery Charges	344,790	2.8733	349,523	2.9127	4,732	1.4%	747,695	6.2308	402,904	116.9%
22	Gas Supply Charges	1,892,748	15.7729	1,892,748	15.7729	-	0.0%	1,892,748	15.7729	-	0.0%
23	Total Bill	2,237,538	18.6462	2,242,271	18.6856	4,732	0.2%	2,640,443	22.0037	402,904	18.0%
24	Sales Service Impact					4,732	0.2%			402,904	18.0%
25	Direct Purchase Impact					4,732	1.4%			402,904	116.9%
<u>Small Rate M5</u>											
26	Delivery Charges	32,858	3.9828	33,137	4.0166	279	0.8%	60,511	7.3347	27,653	84.2%
27	Gas Supply Charges	130,126	15.7729	130,126	15.7729	-	0.0%	130,126	15.7729	-	0.0%
28	Total Bill	162,984	19.7557	163,263	19.7895	279	0.2%	190,638	23.1076	27,653	17.0%
29	Sales Service Impact					279	0.2%			27,653	17.0%
30	Direct Purchase Impact					279	0.8%			27,653	84.2%
<u>Large Rate M5</u>											
31	Delivery Charges	188,888	2.9060	191,085	2.9398	2,197	1.2%	406,761	6.2579	217,874	115.3%
32	Gas Supply Charges	1,025,239	15.7729	1,025,239	15.7729	-	0.0%	1,025,239	15.7729	-	0.0%
33	Total Bill	1,214,126	18.6789	1,216,323	18.7127	2,197	0.2%	1,432,000	22.0308	217,874	17.9%
34	Sales Service Impact					2,197	0.2%			217,874	17.9%
35	Direct Purchase Impact					2,197	1.2%			217,874	115.3%
<u>Small Rate M7</u>											
36	Delivery Charges	772,183	2.1450	789,427	2.1929	17,244	2.2%	1,983,943	5.5110	1,211,760	156.9%
37	Gas Supply Charges	5,678,244	15.7729	5,678,244	15.7729	-	0.0%	5,678,244	15.7729	-	0.0%
38	Total Bill	6,450,427	17.9179	6,467,671	17.9658	17,244	0.3%	7,662,187	21.2839	1,211,760	18.8%
39	Sales Service Impact					17,244	0.3%			1,211,760	18.8%
40	Direct Purchase Impact					17,244	2.2%			1,211,760	156.9%
<u>Large Rate M7</u>											
41	Delivery Charges	2,897,037	5.5712	2,921,945	5.6191	24,908	0.9%	4,647,357	8.9372	1,750,320	60.4%
42	Gas Supply Charges	8,201,908	15.7729	8,201,908	15.7729	-	0.0%	8,201,908	15.7729	-	0.0%
43	Total Bill	11,098,945	21.3441	11,123,853	21.3920	24,908	0.2%	12,849,265	24.7101	1,750,320	15.8%
44	Sales Service Impact					24,908	0.2%			1,750,320	15.8%
45	Direct Purchase Impact					24,908	0.9%			1,750,320	60.4%

Notes:

(1) Reflects proposed rates per 2017 Rates filing (EB-2016-0245), Appendix A.

(2) Bill impacts including customer-related GHG obligation are applicable to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
Calculation of Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2016-0245 (1) Proposed		Proposed - EB-2016-0296 Excluding Customer-Related GHG Obligation				Proposed - EB-2016-0296 Including Customer-Related GHG Obligation (2)			
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill	Bill	Total Bill	Unit Rate	Total Bill	Bill
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	Change (\$)	Impact (%)	(\$)	(cents/m ³)	Change (\$)	Impact (%)
		(a)	(b)	(c)	(d)	(e) = (c-a)	(f) = (e/a)	(g)	(h)	(i) = (g-a)	(j) = (i/a)
Small Rate M9											
1	Delivery Charges	169,921	2.4449	173,000	2.4892	3,079	1.8%	403,608	5.8073	233,687	137.5%
2	Gas Supply Charges	1,096,217	15.7729	1,096,217	15.7729	-	0.0%	1,096,217	15.7729	-	0.0%
3	Total Bill	1,266,137	18.2178	1,269,216	18.2621	3,079	0.2%	1,499,824	21.5802	233,687	18.5%
4	Sales Service Impact					3,079	0.2%			233,687	18.5%
5	Direct Purchase Impact					3,079	1.8%			233,687	137.5%
Large Rate M9											
6	Delivery Charges	504,687	2.5012	513,626	2.5455	8,939	1.8%	1,183,152	5.8636	678,465	134.4%
7	Gas Supply Charges	3,182,656	15.7729	3,182,656	15.7729	-	0.0%	3,182,656	15.7729	-	0.0%
8	Total Bill	3,687,343	18.2741	3,696,282	18.3184	8,939	0.2%	4,365,808	21.6365	678,465	18.4%
9	Sales Service Impact					8,939	0.2%			678,465	18.4%
10	Direct Purchase Impact					8,939	1.8%			678,465	134.4%
Average Rate M10											
11	Delivery Charges	6,437	6.8119	6,480	6.8572	43	0.7%	9,616	10.1753	3,178	49.4%
12	Gas Supply Charges	14,905	15.7729	14,905	15.7729	-	0.0%	14,905	15.7729	-	0.0%
13	Total Bill	21,343	22.5848	21,385	22.6301	43	0.2%	24,521	25.9482	3,178	14.9%
14	Sales Service Impact					43	0.2%			3,178	14.9%
15	Direct Purchase Impact					43	0.7%			3,178	49.4%
Small Rate T1											
16	Delivery Charges	141,757	1.8808	143,882	1.9090	2,125	1.5%	393,968	5.2271	252,211	177.9%
17	Gas Supply Charges	1,188,803	15.7729	1,188,803	15.7729	-	0.0%	1,188,803	15.7729	-	0.0%
18	Total Bill	1,330,561	17.6537	1,332,686	17.6819	2,125	0.2%	1,582,771	21.0000	252,211	19.0%
19	Sales Service Impact					2,125	0.2%			252,211	19.0%
20	Direct Purchase Impact					2,125	1.5%			252,211	177.9%
Average Rate T1											
21	Delivery Charges	217,502	1.8805	220,763	1.9087	3,262	1.5%	604,533	5.2268	387,031	177.9%
22	Gas Supply Charges	1,824,284	15.7729	1,824,284	15.7729	-	0.0%	1,824,284	15.7729	-	0.0%
23	Total Bill	2,041,786	17.6534	2,045,047	17.6816	3,262	0.2%	2,428,817	20.9997	387,031	19.0%
24	Sales Service Impact					3,262	0.2%			387,031	19.0%
25	Direct Purchase Impact					3,262	1.5%			387,031	177.9%
Large Rate T1											
26	Delivery Charges	482,530	1.8831	489,756	1.9113	7,226	1.5%	1,339,989	5.2294	857,459	177.7%
27	Gas Supply Charges	4,041,661	15.7729	4,041,661	15.7729	-	0.0%	4,041,661	15.7729	-	0.0%
28	Total Bill	4,524,191	17.6560	4,531,417	17.6842	7,226	0.2%	5,381,649	21.0023	857,459	19.0%
29	Sales Service Impact					7,226	0.2%			857,459	19.0%
30	Direct Purchase Impact					7,226	1.5%			857,459	177.7%
Small Rate T2											
31	Delivery Charges	616,006	1.0396	626,553	1.0574	10,548	1.7%	2,592,727	4.3755	1,976,721	320.9%
32	Gas Supply Charges	9,346,390	15.7729	9,346,390	15.7729	-	0.0%	9,346,390	15.7729	-	0.0%
33	Total Bill	9,962,395	16.8125	9,972,943	16.8303	10,548	0.1%	11,939,116	20.1484	1,976,721	19.8%
34	Sales Service Impact					10,548	0.1%			1,976,721	19.8%
35	Direct Purchase Impact					10,548	1.7%			1,976,721	320.9%
Average Rate T2											
36	Delivery Charges	1,467,576	0.7420	1,502,783	0.7598	35,207	2.4%	8,065,648	4.0779	6,598,072	449.6%
37	Gas Supply Charges	31,197,195	15.7729	31,197,195	15.7729	-	0.0%	31,197,195	15.7729	-	0.0%
38	Total Bill	32,664,771	16.5149	32,699,978	16.5327	35,207	0.1%	39,262,843	19.8508	6,598,072	20.2%
39	Sales Service Impact					35,207	0.1%			6,598,072	20.2%
40	Direct Purchase Impact					35,207	2.4%			6,598,072	449.6%
Large Rate T2											
41	Delivery Charges	2,418,016	0.6534	2,483,891	0.6712	65,876	2.7%	14,763,815	3.9893	12,345,799	510.6%
42	Gas Supply Charges	58,373,768	15.7729	58,373,768	15.7729	-	0.0%	58,373,768	15.7729	-	0.0%
43	Total Bill	60,791,784	16.4263	60,857,659	16.4441	65,876	0.1%	73,137,582	19.7622	12,345,799	20.3%
44	Sales Service Impact					65,876	0.1%			12,345,799	20.3%
45	Direct Purchase Impact					65,876	2.7%			12,345,799	510.6%
Large Rate T3											
46	Delivery Charges	5,202,920	1.9078	5,320,186	1.9508	117,266	2.3%	14,369,043	5.2689	9,166,123	176.2%
47	Gas Supply Charges	43,014,591	15.7729	43,014,591	15.7729	-	0.0%	43,014,591	15.7729	-	0.0%
48	Total Bill	48,217,511	17.6807	48,334,777	17.7237	117,266	0.2%	57,383,634	21.0418	9,166,123	19.0%
49	Sales Service Impact					117,266	0.2%			9,166,123	19.0%
50	Direct Purchase Impact					117,266	2.3%			9,166,123	176.2%

Notes:

(1) Reflects proposed rates per 2017 Rates filing (EB-2016-0245), Appendix A.

(2) Bill impacts including customer-related GHG obligation are applicable to customers for whom Union is required to fulfill cap-and-trade obligations.

UNION GAS LIMITED
Union North
Summary of Changes to Sales Rates
Rate 01A - Small Volume General Firm Service

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
1	Monthly Charge - All Zones	\$ 21.00		\$ 21.00
	Monthly Delivery Charge - All Zones			
	Including Customer-Related GHG Obligation			
2	First 100 m ³	9.2574	3.3690	12.6264
3	Next 200 m ³	9.0244	3.3690	12.3934
4	Next 200 m ³	8.6567	3.3690	12.0257
5	Next 500 m ³	8.3192	3.3690	11.6882
6	Over 1,000 m ³	8.0404	3.3690	11.4094
	Excluding Customer-Related GHG Obligation			
7	First 100 m ³	9.2574	0.0509	9.3083
8	Next 200 m ³	9.0244	0.0509	9.0753
9	Next 200 m ³	8.6567	0.0509	8.7076
10	Next 500 m ³	8.3192	0.0509	8.3701
11	Over 1,000 m ³	8.0404	0.0509	8.0913
12	Delivery - Price Adjustment (All Volumes)	0.6677 (1)		0.6677 (1)
	Gas Transportation Service			
13	Union North West Zone (previously Fort Frances)	6.7292		6.7292
14	Union North West Zone (previously Western Zone)	6.7292		6.7292
15	Union North West Zone (previously Northern Zone)	6.7292		6.7292
16	Union North East Zone (previously Northern Zone)	2.9655		2.9655
17	Union North East Zone (previously Eastern Zone)	2.9655		2.9655
18	Transportation - Price Adjustment (All Zones)	0.3919 (2)		0.3919 (2)
	Storage Service			
19	Union North West Zone (previously Fort Frances)	2.0589		2.0589
20	Union North West Zone (previously Western Zone)	2.0589		2.0589
21	Union North West Zone (previously Northern Zone)	2.0589		2.0589
22	Union North East Zone (previously Northern Zone)	6.6220		6.6220
23	Union North East Zone (previously Eastern Zone)	6.6220		6.6220
24	Storage - Price Adjustment (All Zones)	-		-
	Commodity Cost of Gas and Fuel			
25	Fort Frances	11.2718		11.2718
26	Western Zone	11.3534		11.3534
27	Northern Zone	11.4797		11.4797
28	Eastern Zone	11.5800		11.5800
29	Commodity and Fuel - Price Adjustment (All Zones)	(1.6907) (3)		(1.6907) (3)

Notes:

- (1) Includes temporary charges of 0.6186 and 0.0491 cents/m³ expiring March 31, 2017.
- (2) Includes Prospective Recovery of (0.3510), (0.0065), 0.0388, and 0.2015 cents/m³, and a temporary charge of 0.5091 cents/m³ expiring March 31, 2017.
- (3) Includes Prospective Recovery of 0.4405, (1.0675), (0.9289), and (0.1348) cents/m³.

UNION GAS LIMITED
Union North
Summary of Changes to Sales Rates
Rate 10 - Large Volume General Firm Service

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
1	Monthly Charge - All Zones	\$ 70.00		\$ 70.00
	Monthly Delivery Charge - All Zones			
	Including Customer-Related GHG Obligation			
2	First 1,000 m ³	7.7571	3.3559	11.1130
3	Next 9,000 m ³	6.3246	3.3559	9.6805
4	Next 20,000 m ³	5.6530	3.3559	9.0089
5	Next 70,000 m ³	5.1162	3.3559	8.4721
6	Over 100,000 m ³	3.0825	3.3559	6.4384
	Excluding Customer-Related GHG Obligation			
7	First 1,000 m ³	7.7571	0.0378	7.7949
8	Next 9,000 m ³	6.3246	0.0378	6.3624
9	Next 20,000 m ³	5.6530	0.0378	5.6908
10	Next 70,000 m ³	5.1162	0.0378	5.1540
11	Over 100,000 m ³	3.0825	0.0378	3.1203
12	Delivery - Price Adjustment (All Volumes)	0.6349 (1)		0.6349 (1)
	Gas Transportation Service			
13	Union North West Zone (previously Fort Frances)	5.8929		5.8929
14	Union North West Zone (previously Western Zone)	5.8929		5.8929
15	Union North West Zone (previously Northern Zone)	5.8929		5.8929
16	Union North East Zone (previously Northern Zone)	2.7303		2.7303
17	Union North East Zone (previously Eastern Zone)	2.7303		2.7303
18	Transportation - Price Adjustment (All Zones)	0.4196 (2)		0.4196 (2)
	Storage Service			
19	Union North West Zone (previously Fort Frances)	1.5495		1.5495
20	Union North West Zone (previously Western Zone)	1.5495		1.5495
21	Union North West Zone (previously Northern Zone)	1.5495		1.5495
22	Union North East Zone (previously Northern Zone)	4.6762		4.6762
23	Union North East Zone (previously Eastern Zone)	4.6762		4.6762
24	Storage - Price Adjustment (All Zones)	-		-
	Commodity Cost of Gas and Fuel			
25	Fort Frances	11.2718		11.2718
26	Western Zone	11.3534		11.3534
27	Northern Zone	11.4797		11.4797
28	Eastern Zone	11.5800		11.5800
29	Commodity and Fuel - Price Adjustment (All Zones)	(1.6907) (3)		(1.6907) (3)

Notes:

- (1) Includes temporary charges of 0.4730 and 0.1619 cents/m³ expiring March 31, 2017.
(2) Includes Prospective Recovery of (0.3498), (0.0052), 0.0415, and 0.2019 cents/m³, and a temporary charge of 0.5312 cents/m³ expiring March 31, 2017.
(3) Includes Prospective Recovery of 0.4405, (1.0675), (0.9289), and (0.1348) cents/m³.

UNION GAS LIMITED
Union North
Summary of Changes to Sales Rates
Rate 20 - Medium Volume Firm Service

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
1	Monthly Charge	\$ 884.46		\$ 884.46
	Delivery Demand Charge			
2	First 70,000 m ³	28.6326		28.6326
3	All over 70,000 m ³	16.8374		16.8374
	Delivery Commodity Charge			
	Including Customer-Related GHG Obligation			
4	First 852,000 m ³	0.5649	3.3263	3.8912
5	All over 852,000 m ³	0.4106	3.3263	3.7369
	Excluding Customer-Related GHG Obligation			
6	First 852,000 m ³	0.5649	0.0082	0.5731
7	All over 852,000 m ³	0.4106	0.0082	0.4188
	Monthly Gas Supply Demand Charge			
8	Union North West Zone (previously Fort Frances)	55.8485		55.8485
9	Union North West Zone (previously Western Zone)	55.8485		55.8485
10	Union North West Zone (previously Northern Zone)	55.8485		55.8485
11	Union North East Zone (previously Northern Zone)	49.7267		49.7267
12	Union North East Zone (previously Eastern Zone)	49.7267		49.7267
13	Gas Supply Demand - Price Adjustment (All Zones)	-		-
	Commodity Transportation 1			
14	Union North West Zone (previously Fort Frances)	3.5625		3.5625
15	Union North West Zone (previously Western Zone)	3.5625		3.5625
16	Union North West Zone (previously Northern Zone)	3.5625		3.5625
17	Union North East Zone (previously Northern Zone)	2.6079		2.6079
18	Union North East Zone (previously Eastern Zone)	2.6079		2.6079
19	Transportation 1 - Price Adjustment (All Zones)	(0.0806) (1)		(0.0806) (1)
	Commodity Transportation 2			
20	Union North West Zone (previously Fort Frances)	-		-
21	Union North West Zone (previously Western Zone)	-		-
22	Union North West Zone (previously Northern Zone)	-		-
23	Union North East Zone (previously Northern Zone)	-		-
24	Union North East Zone (previously Eastern Zone)	-		-
	Commodity Cost of Gas and Fuel			
25	Fort Frances	11.0091		11.0091
26	Western Zone	11.0888		11.0888
27	Northern Zone	11.2120		11.2120
28	Eastern Zone	11.3100		11.3100
29	Commodity and Fuel - Price Adjustment (All Zones)	(1.6907) (2)		(1.6907) (2)
	Bundled Storage Service (\$/GJ)			
30	Monthly Demand Charge	20.111		20.111
31	Commodity Charge	0.206		0.206
32	Storage Demand - Price Adjustment	-		-

Notes:

- (1) Includes Prospective Recovery of (0.3725), 0.0235, 0.0609, and 0.2075 cents/m³.
(2) Includes Prospective Recovery of 0.4405, (1.0675), (0.9289), and (0.1348) cents/m³.

UNION GAS LIMITED
Union North
Summary of Changes to Sales Rates
Rate 100 - Large Volume High Load Factor Firm Service

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
1	Monthly Charge	\$ 1,372.75		\$ 1,372.75
2	Delivery Demand Charge All Zones	15.1083		15.1083
3	Delivery Commodity Charge All Zones Including Customer-Related GHG Obligation	0.2205	3.3185	3.5390
4	Excluding Customer-Related GHG Obligation	0.2205	0.0004	0.2209
5	Monthly Gas Supply Demand Charge Union North West Zone (previously Fort Frances Zone)	112.0994		112.0994
6	Union North West Zone (previously Western Zone)	112.0994		112.0994
7	Union North West Zone (previously Northern Zone)	112.0994		112.0994
8	Union North East Zone (previously Northern Zone)	158.4424		158.4424
9	Union North East Zone (previously Eastern Zone)	158.4424		158.4424
10	Gas Supply Demand - Price Adjustment (All Zones)	-		-
11	Commodity Transportation 1 Union North West Zone (previously Fort Frances Zone)	6.2885		6.2885
12	Union North West Zone (previously Western Zone)	6.2885		6.2885
13	Union North West Zone (previously Northern Zone)	6.2885		6.2885
14	Union North East Zone (previously Northern Zone)	9.0613		9.0613
15	Union North East Zone (previously Eastern Zone)	9.0613		9.0613
16	Transportation 1 - Price Adjustment (All Zones)	-		-
17	Commodity Transportation 2 Union North West Zone (previously Fort Frances Zone)	-		-
18	Union North West Zone (previously Western Zone)	-		-
19	Union North West Zone (previously Northern Zone)	-		-
20	Union North East Zone (previously Northern Zone)	-		-
21	Union North East Zone (previously Eastern Zone)	-		-
22	Commodity Cost of Gas and Fuel Fort Frances	11.0091		11.0091
23	Western Zone	11.0888		11.0888
24	Northern Zone	11.2120		11.2120
25	Eastern Zone	11.3100		11.3100
26	Commodity and Fuel - Price Adjustment (All Zones)	(1.6907) (1)		(1.6907) (1)
27	Bundled Storage Service (\$/GJ) Monthly Demand Charge	20.111		20.111
28	Commodity Charge	0.206		0.206
29	Storage Demand - Price Adjustment	-		-

Notes:

(1) Includes Prospective Recovery of 0.4405, (1.0675), (0.9289), and (0.1348) cents/m³.

UNION GAS LIMITED
 Union North
Summary of Changes to Sales Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
1	<u>Rate 25 - Large Volume Interruptible Service</u> Monthly Charge	\$ 306.75		\$ 306.75
	Delivery Charge - All Zones *			
	Maximum			
2	Including Customer-Related GHG Obligation	5.1705	3.3520	8.5225
3	Excluding Customer-Related GHG Obligation	5.1705	0.0339	5.2044
	Gas Supply Charges - All Zones			
4	Minimum	1.4848		1.4848
5	Maximum	675.9484		675.9484

* see Appendix C.

UNION GAS LIMITED
Union South
Summary of Changes to Sales Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Utility Sales</u>				
1	Commodity and Fuel	11.5698		11.5698
2	Commodity and Fuel - Price Adjustment	(0.6779) (1)		(0.6779) (1)
3	Transportation	4.2031		4.2031
4	Total Gas Supply Commodity Charge	15.0950	-	15.0950
<u>M4 Firm Commercial/Industrial</u>				
5	Minimum annual gas supply commodity charge	4.8595		4.8595
<u>M4 / M5A Interruptible Commercial/Industrial</u>				
6	Minimum annual gas supply commodity charge	4.8595		4.8595
<u>Storage and Transportation Supplemental Services - Rate T1, Rate T2 & Rate T3</u>				
		<u>\$/GJ</u>		<u>\$/GJ</u>
Monthly demand charges: (\$/GJ)				
7	Firm gas supply service	59.279		59.279
8	Firm backstop gas	1.692		1.692
Commodity charges:				
9	Gas supply	2.932		2.932
10	Backstop gas	4.512	0.007	4.520
11	Reasonable Efforts Backstop Gas	5.470	0.011	5.481
12	Supplemental Inventory	Note (2)		Note (2)
13	Supplemental Gas Sales Service (cents/m ³)	18.8919	0.0282	18.9201
14	Failure to Deliver	2.738	0.011	2.749
15	Discretionary Gas Supply Service (DGSS)	Note (3)		Note (3)

Notes:

- (1) Includes Prospective Recovery of (0.1174), (0.0942), (0.4849), and (0.1771) cents/m³, and a temporary charge of 0.1957 cents/m³ expiring March 31, 2017.
- (2) The charge for banked gas purchases shall be the higher of the daily spot gas cost at Dawn in the month of or the month following the month in which gas is sold under this rate and shall not be less than Union's approved weighted average cost of gas.
- (3) Reflects the "back to back" price plus gas supply administration charge.

UNION GAS LIMITED
Union South
Summary of Changes to Sales Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Rate M1 - Small Volume General Service Rate</u>				
1	Monthly Charge	\$ 21.00		\$ 21.00
Including Customer-Related GHG Obligation				
2	First 100 m ³	4.7406	3.3613	8.1019
3	Next 150 m ³	4.5002	3.3606	7.8608
4	All over 250 m ³	3.8790	3.3588	7.2378
Excluding Customer-Related GHG Obligation				
5	First 100 m ³	4.7406	0.0432	4.7838
6	Next 150 m ³	4.5002	0.0425	4.5427
7	All over 250 m ³	3.8790	0.0407	3.9197
8	Delivery - Price Adjustment (All Volumes)	0.4365 (1)		0.4365 (1)
9	Storage Service	0.7153		0.7153
10	Storage - Price Adjustment	-		-
<u>Rate M2 - Large Volume General Service Rate</u>				
11	Monthly Charge	\$ 70.00		\$ 70.00
Including Customer-Related GHG Obligation				
12	First 1,000 m ³	4.7134	3.3511	8.0645
13	Next 6,000 m ³	4.6259	3.3509	7.9768
14	Next 13,000 m ³	4.4396	3.3503	7.7899
15	All over 20,000 m ³	4.1211	3.3494	7.4705
Excluding Customer-Related GHG Obligation				
16	First 1,000 m ³	4.7134	0.0330	4.7464
17	Next 6,000 m ³	4.6259	0.0328	4.6587
18	Next 13,000 m ³	4.4396	0.0322	4.4718
19	All over 20,000 m ³	4.1211	0.0313	4.1524
20	Delivery - Price Adjustment (All Volumes)	0.4836 (2)		0.4836 (2)
21	Storage Service	0.6252		0.6252
22	Storage - Price Adjustment	-		-

Notes:

- (1) Includes temporary charges of 0.2283 and 0.2082 cents/m³ expiring March 31, 2017.
(2) Includes temporary charges of 0.1629 and 0.3207 cents/m³ expiring March 31, 2017.

UNION GAS LIMITED
Union South
Summary of Changes to Sales Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Rate M4 - Firm comm/ind contract rate</u>				
Monthly demand charge:				
1	First 8,450 m ³	56.8027	0.1896	56.9923
2	Next 19,700 m ³	25.4689	0.0850	25.5539
3	All over 28,150 m ³	21.3974	0.0714	21.4688
Monthly delivery commodity charge:				
Including Customer-Related GHG Obligation				
4	First block	1.4240	3.3527	4.7767
5	All remaining use	0.6061	3.3489	3.9550
Excluding Customer-Related GHG Obligation				
6	First block	1.4240	0.0346	1.4586
7	All remaining use	0.6061	0.0308	0.6369
8	Delivery - Price Adjustment (All Volumes)	-		-
9	Minimum annual firm delivery commodity charge	1.6142	0.0346	1.6488
<u>Interruptible contracts *</u>				
10	Monthly Charge	\$ 654.15		\$ 654.15
Daily delivery commodity charge:				
Including Customer-Related GHG Obligation				
11	2,400 m ³ to 17,000 m ³	3.0313	3.3519	6.3832
12	17,000 m ³ to 30,000 m ³	2.9014	3.3519	6.2533
13	30,000 m ³ to 50,000 m ³	2.8331	3.3519	6.1850
14	50,000 m ³ to 60,000 m ³	2.7852	3.3519	6.1371
Excluding Customer-Related GHG Obligation				
15	2,400 m ³ to 17,000 m ³	3.0313	0.0338	3.0651
16	17,000 m ³ to 30,000 m ³	2.9014	0.0338	2.9352
17	30,000 m ³ to 50,000 m ³	2.8331	0.0338	2.8669
18	50,000 m ³ to 60,000 m ³	2.7852	0.0338	2.8190
19	Delivery - Price Adjustment (All Volumes)	-		-
20	Minimum annual interruptible delivery commodity charge	3.2215	0.0338	3.2553
<u>Rate M5A - interruptible comm/ind contract</u>				
<u>Firm contracts *</u>				
21	Monthly demand charge	31.7959		31.7959
Monthly delivery commodity charge				
22	Including Customer-Related GHG Obligation	2.3718	3.3527	5.7245
23	Excluding Customer-Related GHG Obligation	2.3718	0.0346	2.4064
24	Delivery - Price Adjustment (All Volumes)	-		-
<u>Interruptible contracts *</u>				
25	Monthly Charge	\$ 654.15		\$ 654.15
Daily delivery commodity charge:				
Including Customer-Related GHG Obligation				
26	2,400 m ³ to 17,000 m ³	3.0313	3.3519	6.3832
27	17,000 m ³ to 30,000 m ³	2.9014	3.3519	6.2533
28	30,000 m ³ to 50,000 m ³	2.8331	3.3519	6.1850
29	50,000 m ³ to 60,000 m ³	2.7852	3.3519	6.1371
Excluding Customer-Related GHG Obligation				
29	2,400 m ³ to 17,000 m ³	3.0313	0.0338	3.0651
30	17,000 m ³ to 30,000 m ³	2.9014	0.0338	2.9352
31	30,000 m ³ to 50,000 m ³	2.8331	0.0338	2.8669
32	50,000 m ³ to 60,000 m ³	2.7852	0.0338	2.8190
33	Delivery - Price Adjustment (All Volumes)	-		-
34	Minimum annual interruptible delivery commodity charge	3.2215	0.0338	3.2553

Notes:

* Price changes to individual interruptible and seasonal contract rates are provided in Appendix C.

UNION GAS LIMITED
 Union South
Summary of Changes to Sales Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Rate M7 - Special large volume contract</u>				
<u>Firm</u>				
1	Monthly demand charge	30.8246		30.8246
2	Monthly delivery commodity charge			
	Including Customer-Related GHG Obligation	0.4496	3.3660	3.8156
3	Excluding Customer-Related GHG Obligation	0.4496	0.0479	0.4975
4	Delivery - Price Adjustment	-		-
<u>Interruptible *</u>				
Monthly delivery commodity charge:				
Maximum				
5	Including Customer-Related GHG Obligation	5.6298	3.3660	8.9958
6	Excluding Customer-Related GHG Obligation	5.6298	0.0479	5.6777
7	Delivery - Price Adjustment	-		-
<u>Seasonal *</u>				
Monthly delivery commodity charge:				
Maximum				
8	Including Customer-Related GHG Obligation	5.3857	3.3660	8.7517
9	Excluding Customer-Related GHG Obligation	5.3857	0.0479	5.4336
10	Delivery - Price Adjustment	-		-
<u>Rate M9 - Large wholesale service</u>				
11	Monthly demand charge	22.3154		22.3154
12	Monthly delivery commodity charge			
	Including Customer-Related GHG Obligation	0.2703	3.3624	3.6327
13	Excluding Customer-Related GHG Obligation	0.2703	0.0443	0.3146
14	Delivery - Price Adjustment	-		-
<u>Rate M10 - Small wholesale service</u>				
15	Monthly delivery commodity charge			
	Including Customer-Related GHG Obligation	6.8119	3.3634	10.1753
16	Excluding Customer-Related GHG Obligation	6.8119	0.0453	6.8572

Notes:

* Price changes to individual interruptible and seasonal contract rates are provided in Appendix C.

UNION GAS LIMITED
Union South
Summary of Changes to Contract Carriage Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Contract Carriage Service</u>				
<u>Rate T1 - Storage and Transportation</u>				
<u>Storage (\$ / GJ)</u>				
Monthly demand charges:				
1	Firm space	0.011		0.011
Firm Injection/Withdrawal Right				
2	Union provides deliverability inventory	1.561		1.561
3	Customer provides deliverability inventory	1.186		1.186
4	Firm incremental injection	1.186		1.186
5	Interruptible withdrawal	1.186		1.186
Commodity charges:				
6	Withdrawal	0.028		0.028
7	Customer provides compressor fuel	0.008		0.008
8	Injection	0.028		0.028
9	Customer provides compressor fuel	0.008		0.008
10	Storage fuel ratio - customer provides fuel	0.406%		0.406%
<u>Transportation (cents / m³)</u>				
11	Monthly demand charge first 28,150 m ³	35.4376		35.4376
12	Monthly demand charge next 112,720 m ³	24.4833		24.4833
Firm commodity charges:				
Union provides compressor fuel - All volumes				
13	Including Customer-Related GHG Obligation	0.1823	3.3463	3.5286
14	Excluding Customer-Related GHG Obligation	0.1823	0.0282	0.2105
Customer provides compressor fuel - All volumes				
15	Including Customer-Related GHG Obligation	0.1245	3.3463	3.4708
16	Excluding Customer-Related GHG Obligation	0.1245	0.0282	0.1527
Interruptible commodity charges: *				
Maximum - Union provides compressor fuel				
17	Including Customer-Related GHG Obligation	5.6298	3.3660	8.9958
18	Excluding Customer-Related GHG Obligation	5.6298	0.0479	5.6777
Maximum - customer provides compressor fuel				
19	Including Customer-Related GHG Obligation	5.5720	3.3660	8.9380
20	Excluding Customer-Related GHG Obligation	5.5720	0.0479	5.6199
21	Transportation fuel ratio - customer provides fuel	0.305%		0.305%
<u>Authorized overrun services</u>				
<u>Storage (\$ / GJ)</u>				
Commodity charges				
22	Injection / Withdrawals	0.101		0.101
23	Customer provides compressor fuel	0.059		0.059
Transportation commodity charge (cents/m ³)				
24	Including Customer-Related GHG Obligation	1.3474	3.3463	4.6937
25	Excluding Customer-Related GHG Obligation	1.3474	0.0282	1.3756
Customer provides compressor fuel				
26	Including Customer-Related GHG Obligation	1.2896	3.3463	4.6359
27	Excluding Customer-Related GHG Obligation	1.2896	0.0282	1.3178
28	<u>Monthly Charge</u>	\$ 1,905.94		\$ 1,905.94

* Price changes to individual interruptible contract rates are provided in Appendix C.

UNION GAS LIMITED
Union South
Summary of Changes to Contract Carriage Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Contract Carriage Service</u>				
<u>Rate T2 - Storage and Transportation</u>				
<u>Storage (\$ / GJ)</u>				
Monthly demand charges:				
1	Firm space	0.011		0.011
Firm Injection/Withdrawal Right				
2	Union provides deliverability inventory	1.561		1.561
3	Customer provides deliverability inventory	1.186		1.186
4	Firm incremental injection	1.186		1.186
5	Interruptible withdrawal	1.186		1.186
Commodity charges:				
6	Withdrawal	0.028		0.028
7	Customer provides compressor fuel	0.008		0.008
8	Injection	0.028		0.028
9	Customer provides compressor fuel	0.008		0.008
10	Storage fuel ratio - customer provides fuel	0.406%		0.406%
<u>Transportation (cents / m³)</u>				
11	Monthly demand charge first 140,870 m ³	26.4455		26.4455
12	Monthly demand charge all over 140,870 m ³	13.9884		13.9884
Firm commodity charges:				
Union provides compressor fuel - All volumes				
13	Including Customer-Related GHG Obligation	0.0880	3.3359	3.4239
14	Excluding Customer-Related GHG Obligation	0.0880	0.0178	0.1058
Customer provides compressor fuel - All volumes				
15	Including Customer-Related GHG Obligation	0.0343	3.3359	3.3702
16	Excluding Customer-Related GHG Obligation	0.0343	0.0178	0.0521
Interruptible commodity charges: *				
Maximum - Union provides compressor fuel				
17	Including Customer-Related GHG Obligation	5.6298	3.3660	8.9958
18	Excluding Customer-Related GHG Obligation	5.6298	0.0479	5.6777
Maximum - customer provides compressor fuel				
19	Including Customer-Related GHG Obligation	5.5761	3.3660	8.9421
20	Excluding Customer-Related GHG Obligation	5.5761	0.0479	5.6240
21	Transportation fuel ratio - customer provides fuel	0.283%		0.283%
<u>Authorized overrun services</u>				
<u>Storage (\$ / GJ)</u>				
Commodity charges				
22	Injection / Withdrawals	0.101		0.101
23	Customer provides compressor fuel	0.059		0.059
Transportation commodity charge (cents/m ³)				
24	Including Customer-Related GHG Obligation	0.9574	3.3359	4.2933
25	Excluding Customer-Related GHG Obligation	0.9574	0.0178	0.9752
Customer provides compressor fuel				
26	Including Customer-Related GHG Obligation	0.9037	3.3359	4.2396
27	Excluding Customer-Related GHG Obligation	0.9037	0.0178	0.9215
28	<u>Monthly Charge</u>	\$ 5,513.81		\$ 5,513.81

* Price changes to individual interruptible contract rates are provided in Appendix C.

UNION GAS LIMITED
 Union South
Summary of Changes to Contract Carriage Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>Rate T3 - Storage and Transportation</u>				
<u>Storage (\$ / GJ)</u>				
Monthly demand charges:				
1	Firm space	0.011		0.011
2	Firm Injection/Withdrawal Right			
2	Union provides deliverability inventory	1.561		1.561
3	Customer provides deliverability inventory	1.186		1.186
4	Firm incremental injection	1.186		1.186
5	Interruptible withdrawal	1.186		1.186
Commodity charges:				
6	Withdrawal	0.028		0.028
7	Customer provides compressor fuel	0.008		0.008
8	Injection	0.028		0.028
9	Customer provides compressor fuel	0.008		0.008
10	Storage fuel ratio - Customer provides fuel	0.406%		0.406%
<u>Transportation (cents / m³)</u>				
11	Monthly demand charge	16.7213		16.7213
Union provides compressor fuel - All volumes				
12	Including Customer-Related GHG Obligation	0.1629	3.3611	3.5240
13	Excluding Customer-Related GHG Obligation	0.1629	0.0430	0.2059
Customer provides compressor fuel - All volumes				
14	Including Customer-Related GHG Obligation	0.0909	3.3611	3.4520
15	Excluding Customer-Related GHG Obligation	0.0909	0.0430	0.1339
16	Transportation fuel ratio- Customer provides fuel	0.380%		0.380%
<u>Authorized overrun services</u>				
<u>Storage (\$ / GJ)</u>				
Commodity charges				
17	Injection / Withdrawals	0.101		0.101
18	Customer provides compressor fuel	0.059		0.059
Transportation commodity charge (cents/m ³)				
19	Including Customer-Related GHG Obligation	0.7126	3.3611	4.0737
20	Excluding Customer-Related GHG Obligation	0.7126	0.0430	0.7556
Customer provides compressor fuel				
21	Including Customer-Related GHG Obligation	0.6406	3.3611	4.0017
22	Excluding Customer-Related GHG Obligation	0.6406	0.0430	0.6836
<u>Monthly Charge</u>				
23	City of Kitchener	\$ 19,968.19		\$ 19,968.19
24	Natural Resource Gas	\$ 3,065.32		\$ 3,065.32
25	Six Nations	\$ 1,021.77		\$ 1,021.77

UNION GAS LIMITED
 Union South
Summary of Changes to Unbundled Rates

Line No.	Particulars (cents/m ³)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>U2 Unbundled Service</u>				
<u>Storage (\$ / GJ)</u>				
Monthly demand charges:				
	Standard Storage Service (SSS)			
1	Combined Firm Space & Deliverability	0.023		0.023
	Standard Peaking Service (SPS)			
2	Combined Firm Space & Deliverability	0.114		0.114
3	Incremental firm injection right	1.030		1.030
4	Incremental firm withdrawal right	1.030		1.030
Commodity charges:				
5	Injection customer provides compressor fuel	0.026		0.026
6	Withdrawal customer provides compressor fuel	0.026		0.026
7	Storage fuel ratio - Customer provides fuel	0.406%		0.406%
<u>Authorized overrun services</u>				
<u>Storage (\$ / GJ)</u>				
Commodity charges:				
8	Injection customer provides compressor fuel	0.060		0.060
9	Withdrawal customer provides compressor fuel	0.060		0.060

UNION GAS LIMITED
Summary of Changes to Storage and Transportation Rates

Line No.	Particulars (\$/GJ)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>M12 Transportation Service</u>				
<u>Firm transportation</u>				
Monthly demand charges:				
1	Dawn to Kirkwall	2.865		2.865
2	Dawn to Parkway	3.402		3.402
3	Kirkwall to Parkway	0.537		0.537
4	F24-T	0.070		0.070
<u>M12-X Firm Transportation</u>				
5	Between Dawn, Kirkwall and Parkway	4.239		4.239
Commodity charges:				
6	Dawn to Kirkwall / Parkway (Cons) / Lisgar	0.000	(1)	0.006 (1)
7	Dawn to Parkway (TCPL / EGT)	0.000	(1)	0.009 (1)
8	Kirkwall to Parkway (Cons) / Lisgar	0.000	(1)	0.002 (1)
9	Kirkwall to Parkway (TCPL / EGT)	0.000	(1)	0.005 (1)
10	Parkway to Dawn / Kirkwall	0.000	(1)	0.003 (1)
11	Kirkwall to Dawn	0.000	(1)	0.002 (1)
12	Parkway (TCPL / EGT) to Parkway (Cons) / Lisgar	0.000	(1)	0.002 (1)
<u>Limited Firm/Interruptible</u>				
Monthly demand charges:				
13	Maximum	8.165		8.165
Commodity charges :				
14	Others	Note (1)		Note (1)
<u>Authorized Overrun</u>				
Transportation commodity charges:				
Easterly:				
15	Dawn to Kirkwall - Union supplied fuel	Note (1)		Note (1)
16	Dawn to Parkway (Cons) / Lisgar - Union supplied fuel	Note (1)		Note (1)
17	Dawn to Parkway (TCPL / EGT) - Union supplied fuel	Note (1)		Note (1)
18	Kirkwall to Parkway (Cons) / Lisgar - Union supplied fuel	Note (1)		Note (1)
19	Kirkwall to Parkway (TCPL) - Union supplied fuel	Note (1)		Note (1)
20	Dawn to Kirkwall - Shipper supplied fuel	0.094	(1)	0.100 (1)
21	Dawn to Parkway (Cons) / Lisgar - Shipper supplied fuel	0.112	(1)	0.118 (1)
22	Dawn to Parkway (TCPL / EGT) - Shipper supplied fuel	0.112	(1)	0.121 (1)
23	Kirkwall to Parkway (Cons) / Lisgar - Shipper supplied fuel	0.018	(1)	0.020 (1)
24	Kirkwall to Parkway (TCPL / EGT) - Shipper supplied fuel	0.018	(1)	0.023 (1)
<u>M12-X Firm Transportation</u>				
25	Between Dawn, Kirkwall and Parkway - Union supplied fuel	Note (1)		Note (1)
Between Dawn, Kirkwall and Parkway - Shipper supplied fuel:				
26	Dawn to Kirkwall / Parkway (Cons) / Lisgar	0.139	(1)	0.145 (1)
27	Dawn to Parkway (TCPL / EGT)	0.139	(1)	0.148 (1)
28	Kirkwall to Parkway (Cons) / Lisgar	0.139	(1)	0.141 (1)
29	Kirkwall to Parkway (TCPL / EGT)	0.139	(1)	0.144 (1)
30	Parkway to Dawn / Kirkwall	0.139	(1)	0.142 (1)
31	Kirkwall to Dawn	0.139	(1)	0.141 (1)
<u>M13 Transportation of Locally Produced Gas</u>				
32	Monthly fixed charge per customer station	\$952.72		\$952.72
33	Transmission commodity charge to Dawn	0.035		0.035
34	Commodity charge - Union supplied fuel	0.008		0.010
35	Commodity charge - Shipper supplied fuel	0.000	(2)	0.002 (2)
36	Authorized Overrun - Union supplied fuel	0.077		0.079
37	Authorized Overrun - Shipper supplied fuel	0.069	(2)	0.071 (2)

Notes:

- (1) Monthly fuel rates and fuel and commodity ratios per Schedule "C".
 (2) Plus shipper supplied fuel per rate schedule.

UNION GAS LIMITED
Summary of Changes to Storage and Transportation Rates

Line No.	Particulars (\$/GJ)	EB-2016-0245 Proposed January 1, 2017 Rate (a)	Rate Change (b)	EB-2016-0296 Proposed January 1, 2017 Rate (c)
<u>M16 Storage Transportation Service</u>				
1	Monthly fixed charge per customer station	\$1,515.67		\$1,515.67
Monthly demand charges:				
2	East of Dawn	0.770		0.770
3	West of Dawn	1.045		1.045
4	Transmission commodity charge to Dawn	0.035		0.035
Transportation Fuel Charges to Dawn:				
5	East of Dawn - Union supplied fuel	0.008	0.002	0.010
6	West of Dawn - Union supplied fuel	0.008	0.002	0.010
7	East of Dawn - Shipper supplied fuel	0.000	(1) 0.002	0.002 (1)
8	West of Dawn - Shipper supplied fuel	0.000	(1) 0.002	0.002 (1)
Transportation Fuel Charges to Pools:				
9	East of Dawn - Union supplied fuel	0.009	0.002	0.011
10	West of Dawn - Union supplied fuel	0.022	0.005	0.027
11	East of Dawn - Shipper supplied fuel	0.000	(1) 0.002	0.002 (1)
12	West of Dawn - Shipper supplied fuel	0.000	(1) 0.005	0.005 (1)
<u>Authorized Overrun</u>				
Transportation Fuel Charges to Dawn:				
13	East of Dawn - Union supplied fuel	0.067	0.002	0.069
14	West of Dawn - Union supplied fuel	0.077	0.002	0.079
15	East of Dawn - Shipper supplied fuel	0.060	(1) 0.002	0.062 (1)
16	West of Dawn - Shipper supplied fuel	0.069	(1) 0.002	0.071 (1)
Transportation Fuel Charges to Pools:				
17	East of Dawn - Union supplied fuel	0.034	0.002	0.036
18	West of Dawn - Union supplied fuel	0.056	0.005	0.061
19	East of Dawn - Shipper supplied fuel	0.025	(1) 0.002	0.027 (1)
20	West of Dawn - Shipper supplied fuel	0.034	(1) 0.005	0.039 (1)
<u>C1 - Cross Franchise Transportation Service</u>				
<u>Transportation service</u>				
Monthly demand charges:				
21	St. Clair / Bluewater & Dawn	1.045		1.045
22	Ojibway & Dawn	1.045		1.045
23	Parkway to Dawn	0.837		0.837
24	Parkway to Kirkwall	0.837		0.837
25	Kirkwall to Dawn	1.475		1.475
26	Dawn to Kirkwall	2.865		2.865
27	Dawn to Parkway	3.402		3.402
28	Kirkwall to Parkway	0.537		0.537
29	Dawn to Dawn-Vector	0.029		0.029
30	Dawn to Dawn-TCPL	0.138		0.138
Commodity charges:				
31	St. Clair / Bluewater & Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.013	0.004	0.017
32	St. Clair / Bluewater & Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.010	0.004	0.014
33	Ojibway & Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.015	0.004	0.019
34	Ojibway & Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.022	0.004	0.026
35	Parkway to Kirkwall / Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.008	0.003	0.011
36	Parkway to Kirkwall / Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.014	0.003	0.017
37	Kirkwall to Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.008	0.002	0.010
38	Kirkwall to Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.008	0.002	0.010
39	Dawn to Kirkwall - Union supplied fuel (Nov. 1 - Mar. 31)	0.037	0.006	0.043
40	Dawn to Kirkwall - Union supplied fuel (Apr. 1 - Oct. 31)	0.016	0.006	0.022
41	Dawn to Parkway (Cons) / Lisgar - Union supplied fuel (Nov. 1 - Mar. 31)	0.050	0.006	0.056
42	Dawn to Parkway (Cons) / Lisgar - Union supplied fuel (Apr. 1 - Oct.31)	0.028	0.006	0.034
43	Dawn to Parkway (TCPL) - Union supplied fuel (Nov. 1 - Mar. 31)	0.050	0.009	0.059
44	Dawn to Parkway (TCPL) - Union supplied fuel (Apr. 1 - Oct.31)	0.028	0.009	0.037
45	Kirkwall to Parkway (Cons) / Lisgar - Union supplied fuel (Nov. 1 - Mar. 31)	0.021	0.002	0.023
46	Kirkwall to Parkway (Cons) / Lisgar - Union supplied fuel (Apr. 1 - Oct.31)	0.020	0.002	0.022
47	Kirkwall to Parkway (TCPL) - Union supplied fuel (Nov. 1 - Mar. 31)	0.021	0.005	0.026
48	Kirkwall to Parkway (TCPL) - Union supplied fuel (Apr. 1 - Oct.31)	0.020	0.005	0.025

Notes:

(1) Plus shipper supplied fuel per rate schedule.

UNION GAS LIMITED
Summary of Changes to Storage and Transportation Rates

Line No.	Particulars (\$/GJ)	EB-2016-0245		EB-2016-0296	
		Proposed January 1, 2017 Rate (a)	Rate Change (b)	Proposed January 1, 2017 Rate (c)	
<u>C1 - Cross Franchise Transportation Service</u>					
<u>Transportation service cont'd</u>					
1	St. Clair / Bluewater & Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.004	0.004 (1)
2	St. Clair / Bluewater & Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.004	0.004 (1)
3	Ojibway & Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.004	0.004 (1)
4	Ojibway & Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.004	0.004 (1)
5	Parkway to Kirkwall / Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.003	0.003 (1)
6	Parkway to Kirkwall / Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.003	0.003 (1)
7	Kirkwall to Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.002	0.002 (1)
8	Kirkwall to Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.002	0.002 (1)
9	Dawn to Kirkwall - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.006	0.006 (1)
10	Dawn to Kirkwall - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.006	0.006 (1)
11	Dawn to Parkway (Cons) / Lisgar - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.006	0.006 (1)
12	Dawn to Parkway (Cons) / Lisgar - Shipper supplied fuel (Apr. 1 - Oct.31)	0.000	(1)	0.006	0.006 (1)
13	Dawn to Parkway (TCPL) - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.009	0.009 (1)
14	Dawn to Parkway (TCPL) - Shipper supplied fuel (Apr. 1 - Oct.31)	0.000	(1)	0.009	0.009 (1)
15	Kirkwall to Parkway (Cons) / Lisgar - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.002	0.002 (1)
16	Kirkwall to Parkway (Cons) / Lisgar - Shipper supplied fuel (Apr. 1 - Oct.31)	0.000	(1)	0.002	0.002 (1)
17	Kirkwall to Parkway (TCPL) - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.005	0.005 (1)
18	Kirkwall to Parkway (TCPL) - Shipper supplied fuel (Apr. 1 - Oct.31)	0.000	(1)	0.005	0.005 (1)
19	Dawn to Dawn-Vector - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.003	0.003 (1)
20	Dawn to Dawn-Vector - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.003	0.003 (1)
21	Dawn to Dawn-TCPL - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.000	(1)	0.004	0.004 (1)
22	Dawn to Dawn-TCPL - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.000	(1)	0.004	0.004 (1)
23	Dawn(Tecumseh), Dawn(Facilities or TCPL), Dawn (Vector) and Dawn (TSLE)	Note (1)			Note (1)
Interruptible and Short Term (1 year or less) Firm Transportation:					
24	Maximum	75.00			75.00
<u>Authorized Overrun</u>					
Firm transportation commodity charges:					
25	St. Clair / Bluewater & Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.047		0.004	0.051
26	St. Clair / Bluewater & Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.044		0.004	0.048
27	Ojibway & Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.049		0.004	0.053
28	Ojibway & Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.056		0.004	0.060
29	Parkway to Kirkwall / Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.150		0.003	0.153
30	Parkway to Kirkwall / Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.156		0.003	0.159
31	Kirkwall to Dawn - Union supplied fuel (Nov. 1 - Mar. 31)	0.056		0.002	0.058
32	Kirkwall to Dawn - Union supplied fuel (Apr. 1 - Oct. 31)	0.056		0.002	0.058
33	Dawn to Kirkwall - Union supplied fuel (Nov. 1 - Mar. 31)	0.161		0.006	0.167
34	Dawn to Kirkwall - Union supplied fuel (Apr. 1 - Oct. 31)	0.140		0.006	0.146
35	Dawn to Parkway (Cons) / Lisgar - Union supplied fuel (Nov. 1 - Mar. 31)	0.192		0.006	0.198
36	Dawn to Parkway (Cons) / Lisgar - Union supplied fuel (Apr. 1 - Oct.31)	0.170		0.006	0.176
37	Dawn to Parkway (TCPL) - Union supplied fuel (Nov. 1 - Mar. 31)	0.192		0.009	0.201
38	Dawn to Parkway (TCPL) - Union supplied fuel (Apr. 1 - Oct.31)	0.170		0.009	0.179
39	Kirkwall to Parkway (Cons) / Lisgar - Union supplied fuel (Nov. 1 - Mar. 31)	0.069		0.002	0.071
40	Kirkwall to Parkway (Cons) / Lisgar - Union supplied fuel (Apr. 1 - Oct.31)	0.068		0.002	0.070
41	Kirkwall to Parkway (TCPL) - Union supplied fuel (Nov. 1 - Mar. 31)	0.069		0.005	0.074
42	Kirkwall to Parkway (TCPL) - Union supplied fuel (Apr. 1 - Oct.31)	0.068		0.005	0.073
43	St. Clair / Bluewater & Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.034	(1)	0.004	0.038 (1)
44	St. Clair / Bluewater & Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.034	(1)	0.004	0.038 (1)
45	Ojibway & Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.034	(1)	0.004	0.038 (1)
46	Ojibway & Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.034	(1)	0.004	0.038 (1)
47	Parkway to Kirkwall / Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.112	(1)	0.003	0.115 (1)
48	Parkway to Kirkwall / Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.112	(1)	0.003	0.115 (1)
49	Kirkwall to Dawn - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.049	(1)	0.002	0.051 (1)
50	Kirkwall to Dawn - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.049	(1)	0.002	0.051 (1)
51	Dawn to Kirkwall - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.094	(1)	0.006	0.100 (1)
52	Dawn to Kirkwall - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.094	(1)	0.006	0.100 (1)
53	Dawn to Parkway (Cons) / Lisgar - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.112	(1)	0.006	0.118 (1)
54	Dawn to Parkway (Cons) / Lisgar - Shipper supplied fuel (Apr. 1 - Oct.31)	0.112	(1)	0.006	0.118 (1)
55	Dawn to Parkway (TCPL) - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.112	(1)	0.009	0.121 (1)
56	Dawn to Parkway (TCPL) - Shipper supplied fuel (Apr. 1 - Oct.31)	0.112	(1)	0.009	0.121 (1)
57	Kirkwall to Parkway (Cons) / Lisgar - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.018	(1)	0.002	0.020 (1)
58	Kirkwall to Parkway (Cons) / Lisgar - Shipper supplied fuel (Apr. 1 - Oct.31)	0.018	(1)	0.002	0.020 (1)
59	Kirkwall to Parkway (TCPL) - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.018	(1)	0.005	0.023 (1)
60	Kirkwall to Parkway (TCPL) - Shipper supplied fuel (Apr. 1 - Oct.31)	0.018	(1)	0.005	0.023 (1)
61	Dawn to Dawn-Vector - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.001	(1)	0.003	0.004 (1)
62	Dawn to Dawn-Vector - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.001	(1)	0.003	0.004 (1)
63	Dawn to Dawn-TCPL - Shipper supplied fuel (Nov. 1 - Mar. 31)	0.005	(1)	0.004	0.009 (1)
64	Dawn to Dawn-TCPL - Shipper supplied fuel (Apr. 1 - Oct. 31)	0.005	(1)	0.004	0.009 (1)

Notes:
 (1) Plus shipper supplied fuel per rate schedule.



RATE 01A - SMALL VOLUME GENERAL FIRM SERVICE

ELIGIBILITY

Any customer in Union's North West and North East Zones who is an end user whose total gas requirements at that location are equal to or less than 50,000 m³ per year.

SERVICES AVAILABLE

The following services are available under this rate schedule:

(a) **Sales Service**

For continuous supply of natural gas by Union and associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service, the Monthly, Delivery and Gas Supply Charges shall apply.

(b) **Transportation Service**

For continuous delivery on Union's distribution system from the Point of Receipt on TransCanada's system to the Point of Consumption on the customer's premises of natural gas owned by the customer and transported by TransCanada under a firm transportation service tariff or equivalent National Energy Board Order. For this service, the Monthly and Delivery Charges shall apply. Unless otherwise authorized by Union, customers who initiate a movement to Transportation Service from a Sales Service or Bundled Transportation Service must accept an assignment from Union of transportation capacity on upstream pipeline systems.

Transportation Service customers in the Union North East Zone may contract with Union for transportation service from Dawn to the customer's delivery area. The charges for the transportation service will consist of the Rate C1 Dawn-Parkway firm transportation rate and applicable fuel charges, in accordance with Union's Rate C1 rate schedule, and all applicable third party (i.e. TransCanada) transportation charges on upstream pipelines from Parkway to the customer's delivery area.

(c) **Bundled Transportation Service**

For continuous delivery by Union of gas owned by the customer and for the associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service the Monthly, and Delivery Charges, as well as the Storage and Transportation Charges of the Gas Supply Charge shall apply.

MONTHLY RATES AND CHARGES

	Including Customer-Related GHG Obligation		Excluding Customer-Related GHG Obligation	
	Union North West	Union North East	Union North West	Union North East
<u>APPLICABLE TO ALL SERVICES</u>				
<u>MONTHLY CHARGE</u>	\$21.00	\$21.00	\$21.00	\$21.00
<u>DELIVERY CHARGE (1)</u>	<u>¢ per m³</u>	<u>¢ per m³</u>	<u>¢ per m³</u>	<u>¢ per m³</u>
First 100 m ³ per month @	12.6264	12.6264	9.3083	9.3083
Next 200 m ³ per month @	12.3934	12.3934	9.0753	9.0753
Next 200 m ³ per month @	12.0257	12.0257	8.7076	8.7076
Next 500 m ³ per month @	11.6882	11.6882	8.3701	8.3701
Over 1,000 m ³ per month @	11.4094	11.4094	8.0913	8.0913
Delivery-Price Adjustment (All Volumes)	0.6677 (2)	0.6677 (2)	0.6677 (2)	0.6677 (2)

Notes:

- (1) Includes cap-and-trade rates of 0.0509 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes temporary charges of 0.6186, and 0.0491 cents/m³ expiring March 31, 2017



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ADDITIONAL CHARGES FOR SALES SERVICE

GAS SUPPLY CHARGES

Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel.
The applicable rates are provided in Schedule "A".

MONTHLY BILL

The monthly bill will equal the sum of the monthly charges plus the rates multiplied by the applicable gas quantities delivered plus all applicable taxes. If the customer transports its own gas, the Gas Supply Charge under Sales Service will not apply.

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be the Monthly Charge.

DELAYED PAYMENT

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

SERVICE AGREEMENT

Customers providing their own gas supply in whole or in part, for transportation by Union, must enter into a Service Agreement with Union.

TERMS AND CONDITIONS OF SERVICE

1. If multiple end-users are receiving service from a customer under this rate, for billing purposes, the Monthly Charge, the Delivery Charge and any other charge that is specific to the location of each end-user shall be used to develop a monthly bill for each end-user at each location. Upon request, possibly for a fee, Union will combine the individual bills on a single invoice or statement for administrative convenience. However, Union will not combine the quantities or demands of several end-use locations so that eligibility to a different rate class will result. Further, Union will not combine the monthly billing data of individual end-users to generate a single bill which is less than the sum of the monthly bills of the individual end-users involved at each location.
2. Customers must enter into a Service Agreement with Union prior to the commencement of service.
3. The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Effective January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



RATE 10 - LARGE VOLUME GENERAL FIRM SERVICE

ELIGIBILITY

Any customer in Union's North West and North East Zones who is an end-user whose total firm gas requirements at one or more Company-owned meters at one location exceed 50,000 m³ per year.

SERVICES AVAILABLE

The following services are available under this rate schedule:

(a) **Sales Service**

For continuous supply of natural gas by Union and associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service, the Monthly, Delivery and Gas Supply Charges shall apply.

(b) **Transportation Service**

For continuous delivery on Union's distribution system from the Point of Receipt on TransCanada's system to the Point of Consumption on the customer's premises of natural gas owned by the customer and transported by TransCanada under a firm transportation service tariff or equivalent National Energy Board Order. For this service, the Monthly, and Delivery Charges shall apply. Unless otherwise authorized by Union, customers who initiate a movement to Transportation Service from a Sales Service or Bundled Transportation Service must accept an assignment from Union of transportation capacity on upstream pipeline systems. Customers may reduce their assignment of transportation capacity in compliance with Union's Turnback Policy.

Transportation Service customers in the Union North East Zone may contract with Union for transportation service from Dawn to the customer's delivery area. The charges for the transportation service will consist of the Rate C1 Dawn-Parkway firm transportation rate and applicable fuel charges, in accordance with Union's Rate C1 rate schedule, and all applicable third party (i.e. TransCanada) transportation charges on upstream pipelines from Parkway to the customer's delivery area.

(c) **Bundled Transportation Service**

For continuous delivery by Union of gas owned by the customer and for the associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service the Monthly, and Delivery Charges, as well as the Storage and Transportation Charges of the Gas Supply Charge shall apply.

MONTHLY RATES AND CHARGES

	Including Customer-Related GHG Obligation		Excluding Customer-Related GHG Obligation	
	Union North West	Union North East	Union North West	Union North East
<u>APPLICABLE TO ALL SERVICES</u>				
<u>MONTHLY CHARGE</u>	\$70.00	\$70.00	\$70.00	\$70.00
<u>DELIVERY CHARGE (1)</u>	<u>¢ per m³</u>	<u>¢ per m³</u>	<u>¢ per m³</u>	<u>¢ per m³</u>
First 1,000 m ³ per month @	11.1130	11.1130	7.7949	7.7949
Next 9,000 m ³ per month @	9.6805	9.6805	6.3624	6.3624
Next 20,000 m ³ per month @	9.0089	9.0089	5.6908	5.6908
Next 70,000 m ³ per month @	8.4721	8.4721	5.1540	5.1540
Over 100,000 m ³ per month @	6.4384	6.4384	3.1203	3.1203
Delivery-Price Adjustment (All Volumes)	0.6349 (2)	0.6349 (2)	0.6349 (2)	0.6349 (2)

Notes:

- (1) Includes cap-and-trade rates of 0.0378 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes temporary charges of 0.4730, and 0.1619 cents/m³ expiring March 31, 2017.



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ADDITIONAL CHARGES FOR SALES SERVICE

GAS SUPPLY CHARGES

Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

MONTHLY BILL

The monthly bill will equal the sum of the monthly charges plus the rates multiplied by the applicable gas quantities delivered plus all applicable taxes. If the customer transports its own gas, the Gas Supply Charge under Sales Service will not apply.

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be the Monthly Charge.

DELAYED PAYMENT

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

SERVICE AGREEMENT

Customers providing their own gas supply in whole or in part, for transportation by Union and customers purchasing gas from Union with maximum daily requirements in excess of 3,000 m³ per day must enter into a Service Agreement with Union.

TERMS AND CONDITIONS OF SERVICE

1. Service shall be for a minimum term of one year.
2. If multiple end-users are receiving service from a customer under this rate, for billing purposes, the Monthly Charge, the Delivery Charge and any other charge that is specific to the location of each end-user shall be used to develop a monthly bill for each end-user at each location. Upon request, possibly for a fee, Union will combine the individual bills on a single invoice or statement for administrative convenience. However, Union will not combine the quantities or demands of several end-use locations so that eligibility to a different rate class will result. Further, Union will not combine the monthly billing data of individual end-users to generate a single bill which is less than the sum of the monthly bills of the individual end-users involved at each location.
3. Customers must enter into a Service Agreement with Union prior to the commencement of service.
4. For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.
5. The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



RATE 20 - MEDIUM VOLUME FIRM SERVICE

ELIGIBILITY

Any customer in Union's North West and North East Zones who is an end-user or who is authorized to serve an end-user of gas through one or more Company-owned meters at one location, and whose total maximum daily requirements for firm or combined firm and interruptible service is 14,000 m³ or more.

SERVICES AVAILABLE

The following services are available under this rate schedule:

(a) **Sales Service**

For continuous supply of natural gas by Union and associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service, the Monthly, Delivery and Gas Supply Charges shall apply.

(b) **Transportation Service**

For continuous delivery on Union's distribution system from the Point of Receipt on TransCanada's system to the Point of Consumption on the customer's premises of natural gas owned by the customer. The customer is responsible for obtaining the requisite regulatory approvals for the supply and transmission of such gas to Union's distribution system. For this service, the Monthly, Delivery, Transportation Account and Diversion Transaction Charges shall apply. Unless otherwise authorized by Union, customers who initiate a movement to Transportation Service from a Sales Service or Bundled Transportation Service must accept an assignment from Union of transportation capacity on upstream pipeline systems. Customers may reduce their assignment of transportation capacity in compliance with Union's Turnback Policy.

Transportation Service customers in the Union North East Zone may contract with Union for transportation service from Dawn to the customer's delivery area. The charges for the transportation service will consist of the Rate C1 Dawn-Parkway firm transportation rate and applicable fuel charges, in accordance with Union's Rate C1 rate schedule, and all applicable third party (i.e. TransCanada) transportation charges on upstream pipelines from Parkway to the customer's delivery area.

(c) **Bundled Transportation Service**

For continuous delivery by Union of gas owned by the customer and for the associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service the Monthly, Delivery, Gas Supply Demand and Commodity Transportation Charges shall apply.

(d) **Storage Service**

For load balancing purposes for customers using Transportation Service on this rate schedule. If at the sole discretion of Union, adequate supplies exist, bundled and unbundled storage and delivery/redelivery services will be provided.

The charge for Bundled Storage Service will consist of the charges for Transportation Service plus the charges for Bundled Storage Service.

Note: Union has a short-term intermittent gas supply service under Rate 30 of which customers may avail themselves, if they qualify for use of the service.



MONTHLY RATES AND CHARGES

APPLICABLE TO ALL SERVICES - ALL ZONES (1)

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
<u>MONTHLY CHARGE</u>	\$884.46	\$884.46
<u>DELIVERY CHARGES</u> (cents per month per m ³)		
Monthly Demand Charge for first 70,000 m ³ of Contracted Daily Demand	28.6326	28.6326
Monthly Demand Charge for all units over 70,000 m ³ of Contracted Daily Demand	16.8374	16.8374
Commodity Charge for first 852,000 m ³ of gas volumes delivered (2)	3.8912	0.5731
Commodity Charge for all units over 852,000 m ³ of gas volumes delivered (2)	3.7369	0.4188

Notes:

- (1) Either the utility or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates, charges and terms and conditions applicable thereto, different from the rates, charges and terms and conditions specified herein if changed rates, charges and terms and conditions are considered by either party to be necessary, desirable and in the public interest.
- (2) Includes cap-and-trade rates of 0.0082 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

ADDITIONAL CHARGES FOR SALES SERVICE

Gas Supply Charge

The gas supply charge is comprised of charges for transportation and for commodity and fuel.
The applicable rates are provided in Schedule "A".

Commodity Transportation

Charge 1 applies for all gas volumes delivered in the billing month up to the volume represented by the Contract Demand multiplied by the number of days in the billing month multiplied by 0.4.

Charge 2 applies for all additional gas volumes delivered in the billing month.

HEAT CONTENT ADJUSTMENT

The gas supply commodity charges hereunder will be adjusted upwards or downwards as described below if the average total heating value of the gas per cubic metre (m³) determined in accordance with Union's Terms and Conditions in any month falls above or below 37.89 MJ per m³, respectively.

The adjustment shall be determined by multiplying the amount otherwise payable by a fraction, where the numerator is the monthly weighted average total heating value per cubic meter and the denominator 37.89.



COMMISSIONING AND DECOMMISSIONING RATE

The contract may provide that the Monthly Demand Charges specified above shall not apply on all or part of the daily contracted demand used by the customer either during the testing, commissioning and phasing in of gas using equipment or, alternatively, in the decommissioning and phasing out of gas using equipment being displaced by other gas using equipment, for a period not to exceed one year ("the transition period"). To be eligible the new or displaced gas using equipment must be separately meterable. In such event, the contract will provide the following rates that such volume during the transitional period will be charged.

	Including Customer-Related GHG Obligation		Excluding Customer-Related GHG Obligation	
	Union <u>North West</u>	Union <u>North East</u>	Union <u>North West</u>	Union <u>North East</u>
<u>MONTHLY CHARGE</u>	\$884.46	\$884.46	\$884.46	\$884.46
<u>DELIVERY CHARGES (1)</u>	<u>cents per m³</u>	<u>cents per m³</u>	<u>cents per m³</u>	<u>cents per m³</u>
Commodity Charge for each unit of gas volumes delivered	5.7739	5.7739	2.4558	2.4558

GAS SUPPLY CHARGES

The gas supply charge is comprised of charges for transportation and for commodity and fuel.
The applicable rates are provided in Schedule "A".

ADDITIONAL CHARGES FOR TRANSPORTATION AND STORAGE SERVICES – ALL ZONES

MONTHLY TRANSPORTATION ACCOUNT CHARGE

For customers that currently have installed or will require installing telemetering equipment \$220.55

BUNDLED (T-SERVICE) STORAGE SERVICE CHARGES

Monthly Demand Charge for each unit of Contracted Daily Storage Withdrawal Entitlement (\$/GJ/Month) \$20.111

Monthly Storage Demand- Price Adjustment for each unit of Contracted Daily Storage Withdrawal Entitlement: (\$/GJ/Month) -

Commodity Charge for each unit of gas withdrawn from storage (\$/GJ) \$0.206

Authorized Overrun Commodity Charge on each additional unit of gas Union authorizes for withdrawal from storage (\$/GJ) \$0.867

The Authorized Overrun Commodity Charge is payable on all quantities on any Day in excess of the customer's contractual rights, for which authorization has been received. Overrun will be authorized by Union at its sole discretion.

DIVERSION TRANSACTION CHARGE

Charge to a customer Receiving Delivery of diverted gas each time such customer requests a diversion and Union provides the service: \$10.00

Notes:

(1) Includes cap-and-trade rates of 0.0082 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.



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THE BILL

The bill will equal the sum of the charges for all services selected plus the rates multiplied by the applicable gas quantities delivered or withdrawn for each service chosen plus all applicable taxes. If the customer transports its own gas, the Gas Supply Charge under Sales Service will not apply. If the customer selects Union's Sales Service which includes the Gas Supply Charge, no additional charges for Transportation and Storage Services will apply.

MINIMUM BILL

The minimum bill shall be the Monthly Charge, the Transportation Account Charge and the Demand Charges, as applicable.

DELAYED PAYMENT

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

SERVICE AGREEMENT

All customers must enter into a Service Agreement with Union before receiving service under this rate schedule.

TERMS AND CONDITIONS OF SERVICE

1. Service shall be for a minimum term of one year.
2. If multiple end-users are receiving service from a customer under this rate, for billing purposes, the Monthly Charge, the Delivery Charge, the Transportation Account Charge and any other charge that is specific to the location of each end-user shall be used to develop a monthly bill for each end-user at each location. Upon request, possibly for a fee, Union will combine the individual bills on a single invoice or statement for administrative convenience. However, Union will not combine the quantities or demands of several end-use locations so that eligibility to a different rate class will result. Further, Union will not combine the billing data of individual end-users to generate a single bill which is less than the sum of the bills of the individual end-users involved at each location.
3. Customers must enter into a Service Agreement with Union prior to the commencement of service.
4. For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.
5. The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



RATE 25 - LARGE VOLUME INTERRUPTIBLE SERVICE

ELIGIBILITY

Any customer in Union's North West and North East Zones who is an end-user or who is authorized to serve an end-user of gas through one or more Company-owned meters at one location, and whose total maximum daily interruptible requirement is 3,000 m³ or more or the interruptible portion of a maximum daily requirement for combined firm and interruptible service is 14,000 m³ or more and whose operations, in the judgement of Union, can readily accept interruption and restoration of gas service.

SERVICES AVAILABLE

The following services are available under this rate schedule:

(a) **Sales Service**

For interruptible supply of natural gas by Union and associated transportation services necessary to ensure its delivery in accordance with customer's needs. For this service, the Monthly, Delivery and Gas Supply Charges shall apply.

(b) **Transportation Service**

For delivery of natural gas owned by the customer on Union's distribution system from the Point of Receipt from TransCanada's system to the Point of Consumption on the customer's or end-user's premises, providing that, in the judgement of Union, acting reasonably, the customer-owned gas does not displace service from Union under a Rate 20 or Rate 100 contract specific to that location. The customer is responsible for obtaining the requisite regulatory approvals for the supply and transmission of such gas to Union's distribution system. For this service, the Monthly, Delivery, Transportation Account and Diversion Transaction Charges shall apply.

Transportation Service customers in the Union North East Zone may contract with Union for transportation service from Dawn to the customer's delivery area. The charges for the transportation service will consist of the Rate C1 Dawn-Parkway firm transportation rate and applicable fuel charges, in accordance with Union's Rate C1 rate schedule, and all applicable third party (i.e. TransCanada) transportation charges on upstream pipelines from Parkway to the customer's delivery area.

NOTE: Union has a short-term intermittent gas supply service under Rate 30 which customers may avail themselves of, if they qualify for use of the service.

MONTHLY RATES AND CHARGES

APPLICABLE TO ALL SERVICES – ALL ZONES (1)

	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>
<u>MONTHLY CHARGE</u>	\$306.75	\$306.75
<u>DELIVERY CHARGES (2)</u> A Delivery Price for all volumes delivered to the customer to be negotiated between Union and the customer and the average price during the period in which these rates remain in effect shall not exceed:	<u>cents per m³</u> 8.5225	<u>cents per m³</u> 5.2044
<u>UNAUTHORIZED OVERRUN NON - COMPLIANCE RATE</u> Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect.	<u>cents per m³</u> 232.8600	<u>cents per m³</u> 232.8600

Notes:

- (1) Either the utility or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates, charges and terms and conditions applicable thereto, different from the rates, charges and terms and conditions specified herein if changed rates, charges and terms and conditions are considered by either party to be necessary, desirable and in the public interest.
- (2) Includes cap-and-trade rates of 0.0017 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.



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ADDITIONAL CHARGES FOR SALES SERVICE

Gas Supply Charge

As per applicable rate provided in Schedule "A".

Interruptible Service

Applicable all year at a price agreed upon between Union and the customer and the average price during the period in which these rates remain in effect.

HEAT CONTENT ADJUSTMENT

The gas supply commodity charges hereunder will be adjusted upwards or downwards as described below if the average total heating value of the gas per cubic metre (m³) determined in accordance with Union's Terms and Conditions in any month falls above or below 37.89 MJ per m³, respectively.

The adjustment shall be determined by multiplying the amount otherwise payable by a fraction, where the numerator is the monthly weighted average total heating value per cubic meter and the denominator 37.89.

ADDITIONAL CHARGES FOR TRANSPORTATION – ALL ZONES

MONTHLY TRANSPORTATION ACCOUNT CHARGE:

For customers that currently have installed or will require installing telemetering equipment.

\$220.55

THE BILL

The bill will equal the sum of the monthly charges for all services selected plus the rates multiplied by the applicable gas volumes delivered or withdrawn for each service chosen plus all applicable taxes. If the customer transports its own gas, the Gas Supply Charge under Sales Service will not apply. If the customer selects Union's Sales Service which includes the Gas Supply Charge, no additional charges for Transportation will apply.

MINIMUM BILL

The minimum bill shall be the Monthly Charge and the Transportation Account Charge, if applicable.

DELAYED PAYMENT

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

SERVICE AGREEMENT

All customers must enter into a Service Agreement with Union before receiving service under this rate schedule.



TERMS AND CONDITIONS OF SERVICE

1. Service shall be for a minimum term of one year.
2. If multiple end-users are receiving service from a customer under this rate, for billing purposes, the Monthly Charge, the Delivery Charge, the Transportation Account Charge and any other charge that is specific to the location of each end-user shall be used to develop a monthly bill for each end-user at each location. Upon request, Union will combine the individual bills on a single invoice or statement for administrative convenience. However, Union will not combine the volumes or demands of several end-use locations so that eligibility to a different rate class will result. Further, Union will not combine the monthly billing data of individual end-users to generate a single bill which is less than the sum of the monthly bills of the individual end-users involved at each location.
3. Customers must enter into a Service Agreement with Union prior to the commencement of service.
4. For the purposes of qualifying for a rate class, the total volumes of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.
5. The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.



RATE 30 - INTERMITTENT GAS SUPPLY SERVICE
AND SHORT TERM STORAGE / BALANCING SERVICE

ELIGIBILITY

Any customer in Union's North West and North East Zones already connected to Union's gas distribution system who is an end-user or is authorized to serve an end-user.

SERVICE AVAILABLE

For intermittent, short-term gas supply which will be a substitute for energy forms other than Company owned gas sold under other rate schedules. This may include situations where customer-owned gas supplies are inadequate and short-term backstopping service is requested or during a situation of curtailment on the basis of price when the purchase price of Spot gas is outside the interruptible service price range. The gas supply service available hereunder is offered only in conjunction with service to the customer under an applicable firm or interruptible service rate schedule of Union. The service is for intermittent gas supply and short term storage / balancing service and will be billed in combination with Monthly, Delivery, and other applicable charges for such services under the applicable rate schedule. Gas supply under this rate will be provided when, at the sole discretion of Union, adequate supplies are available.

GAS SUPPLY CHARGE

The gas supply charge shall be \$5.00 per 10³m³ plus the greater of the incremental cost of gas for Union and the customer's gas supply charge.

SHORT TERM STORAGE / BALANCING SERVICE

Short Term Storage / Balancing Service is:

- i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, OR
- ii) short-term firm deliverability, OR
- iii) a component of an operational balancing service offered.

In negotiating the rate to be charged for service, the matters that are to be considered include:

- i) the minimum amount of storage service to which a customer is willing to commit,
- ii) whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
- iii) utilization of facilities, and
- iv) competition.

A commodity charge to be negotiated between Union and the customer not to exceed \$6.000/GJ.

THE BILL

The bill for gas supply and/or short term supplemental services under this rate shall be rendered in conjunction with the billing for delivery and other services under the customer's applicable rate for such services.

SERVICE AGREEMENT

All customers must enter into a Service Agreement with Union for this service and must agree therein to curtail or interrupt use of gas under this rate schedule whenever requested to do so by Union.



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TERMS AND CONDITIONS OF SERVICE

1. Failure of the customer to interrupt or curtail use of gas on this rate as requested by Union shall be subject to the Unauthorized Overrun Gas Penalty as provided in Union's Terms and Conditions. Anytime the customer has such failure, Union reserves the right to cancel service under this rate.
2. The Terms and Conditions of the applicable rate schedule for delivery of the gas sold hereunder shall also apply.
3. The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



RATE 100 – LARGE VOLUME HIGH LOAD FACTOR FIRM SERVICE

ELIGIBILITY

Any customer in Union's North West and North East Zones who is an end-user or who is authorized to serve an end-user of gas through one or more Company-owned meters at one location, and whose maximum daily requirement for firm service is 100,000 m³ or more, and whose annual requirement for firm service is equal to or greater than its maximum daily requirement multiplied by 256.

SERVICES AVAILABLE

The following services are available under this rate schedule:

(a) **Sales Service**

For continuous supply of natural gas by Union and associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service, the Monthly, Delivery and Gas Supply Charges shall apply.

(b) **Transportation Service**

For continuous delivery on Union's distribution system from the Point of Receipt on TransCanada's system to the Point of Consumption on the customer's premises of natural gas owned by the customer. The customer is responsible for obtaining the requisite regulatory approvals for the supply and transmission of such gas to Union's distribution system. For this service, the Monthly, Delivery, Transportation Account and Diversion Transaction Charges shall apply. Unless otherwise authorized by Union, customers who initiate a movement to Transportation Service from a Sales Service or Bundled Transportation Service must accept an assignment from Union of transportation capacity on upstream pipeline systems. Customers may reduce their assignment of transportation capacity in compliance with Union's Turnback Policy.

Transportation Service customers in the Union North East Zone may contract with Union for transportation service from Dawn to the customer's delivery area. The charges for the transportation service will consist of the Rate C1 Dawn-Parkway firm transportation rate and applicable fuel charges, in accordance with Union's Rate C1 rate schedule, and all applicable third party (i.e. TransCanada) transportation charges on upstream pipelines from Parkway to the customer's delivery area.

(c) **Bundled Transportation Service**

For continuous delivery by Union of gas owned by the customer and for the associated transportation and storage services necessary to ensure deliverability in accordance with the customer's needs. For this service the Monthly, Delivery, Gas Supply Demand and Commodity Transportation Charges shall apply.

(d) **Storage Service**

For load balancing purposes for customers using Transportation Service on this rate schedule. If at the sole discretion of Union, adequate supplies exist, bundled and unbundled storage and delivery/redelivery services will be provided.

The charge for Bundled Storage Service will consist of the charges for Transportation Service plus the charges for Bundled Storage Service.

NOTE: Union has a short-term intermittent gas supply service under Rate 30 which customers may avail themselves of, if they qualify for use of the service.



MONTHLY RATES AND CHARGES

APPLICABLE TO ALL SERVICES - ALL ZONES (1)

	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>
<u>MONTHLY CHARGE</u>	\$1,372.75	\$1,372.75
<u>DELIVERY CHARGES</u> (cents per Month per m ³ of Daily Contract Demand)		
Monthly Demand Charge for each unit of Contracted Daily Demand	15.1083	15.1083
Commodity Charge for each unit of gas volumes delivered (cents/m ³) (2)	3.5390	0.2209

Notes:

- (1) Either the utility or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates, charges and terms and conditions applicable thereto, different from the rates, charges and terms and conditions specified herein if changed rates, charges and terms and conditions are considered by either party to be necessary, desirable and in the public interest.
- (2) Includes cap-and-trade rates of 0.0004 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

ADDITIONAL CHARGES FOR SALES SERVICE

Gas Supply Charges

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

Commodity Transportation

Charge 1 applies for all gas volumes delivered in the billing month up to the volume represented by the Contract Demand multiplied by the number of days in the billing month multiplied by 0.3.

Charge 2 applies for all additional gas volumes delivered in the billing month.

HEAT CONTENT ADJUSTMENT

The gas supply commodity charges hereunder will be adjusted upwards or downwards as described below if the average total heating value of the gas per cubic metre (m³) determined in accordance with Union's Terms and Conditions in any month falls above or below 37.89 MJ per m³, respectively.

The adjustment shall be determined by multiplying the amount otherwise payable by a fraction, where the numerator is the monthly weighted average total heating value per cubic meter and the denominator 37.89.



COMMISSIONING AND DECOMMISSIONING RATE

The contract may provide that the Monthly Demand Charges specified above shall not apply on all or part of the daily contracted demand used by the customer either during the testing, commissioning and phasing in of gas using equipment or, alternatively, in the decommissioning and phasing out of gas using equipment being displaced by other gas using equipment, for a period not to exceed one year ("the transitional period"). To be eligible the new or displaced gas using equipment must be separately meterable. In such event, the contract will provide the following rates that such volume during the transitional period will be charged.

Zone	Including Customer-Related <u>GHG Obligation</u>		Excluding Customer-Related <u>GHG Obligation</u>	
	<u>Union North West</u>	<u>Union North East</u>	<u>Union North West</u>	<u>Union North East</u>
<u>MONTHLY CHARGE</u>	\$1,372.75	\$1,372.75	\$1,372.75	\$1,372.75
<u>DELIVERY CHARGES (cents per m³) (1)</u>				
Commodity Charge for each unit of gas volumes delivered	4.2486	4.2486	0.9305	0.9305
<u>GAS SUPPLY CHARGES</u>				

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

ADDITIONAL CHARGES FOR TRANSPORTATION AND STORAGE SERVICES – ALL ZONES

MONTHLY TRANSPORTATION ACCOUNT CHARGE

For customers that currently have installed or will require installing telemetering equipment \$220.55

BUNDLED (T-SERVICE) STORAGE SERVICE CHARGES

Monthly Demand Charge for each unit of Contracted Daily Storage Withdrawal Entitlement (\$/GJ/Month) \$20.111

Monthly Storage Demand- Price Adjustment for each unit of Contracted Daily Storage Withdrawal Entitlement: (\$/GJ/Month) -

Commodity Charge for each unit of gas withdrawn from storage (\$/GJ) \$0.206

Authorized Overrun Commodity Charge on each additional unit of gas Union authorizes for withdrawal from storage (\$/GJ) \$0.867

The Authorized Overrun Commodity Charge is payable on all quantities on any Day in excess of the customer's contractual rights, for which authorization has been received. Overrun will be authorized by Union at its sole discretion.

DIVERSION TRANSACTION CHARGE

Charge to a customer Receiving Delivery of diverted gas each time such customer requests a diversion and Union provides the service: \$10.00

Notes:

(1) Includes cap-and-trade rates of 0.0004 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.



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THE BILL

The bill will equal the sum of the charges for all services selected plus the rates multiplied by the applicable gas quantities delivered or withdrawn for each service chosen plus all applicable taxes. If the customer transports its own gas, the Gas Supply Charge under Sales Service will not apply. If the customer selects Union's Sales Service which includes the Gas Supply Charge, no additional charges for Transportation and Storage Services will apply.

MINIMUM BILL

The minimum bill shall be the Monthly Charge, the Transportation Account Charge and the Demand Charges, as applicable.

DELAYED PAYMENT

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

SERVICE AGREEMENT

All customers must enter into a Service Agreement with Union before receiving service under this rate schedule.

TERMS AND CONDITIONS OF SERVICE

1. Service shall be for a minimum term of one year.
2. If multiple end-users are receiving service from a customer under this rate, for billing purposes, the Monthly Charge, the Delivery Charge, the Transportation Account Charge and any other charge that is specific to the location of each end-user shall be used to develop a monthly bill for each end-user at each location. Upon request, possibly for a fee, Union will combine the individual bills on a single invoice or statement for administrative convenience. However, Union will not combine the quantities or demands of several end-use locations so that eligibility to a different rate class will result. Further, Union will not combine the billing data of individual end-users to generate a single bill which is less than the sum of the bills of the individual end-users involved at each location.
3. Customers must enter into a Service Agreement with Union prior to the commencement of service.
4. For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.
5. The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



Union Gas Limited
Union North
Gas Supply Charges

(A) Availability

Available to customers in Union's North West and North East Delivery Zones.

(B) Applicability:

To all sales customers served under Rate 01A, Rate 10, Rate 20, Rate 100 and Rate 25.

(C) Rates

<u>Utility Sales</u>	Union North West			Union North East	
	Previously Fort Frances Zone	Previously Western Zone	Previously Northern Zone	Previously Northern Zone	Previously Eastern Zone
<u>Rate 01A (cents / m³)</u>					
Storage	2.0589	2.0589	2.0589	6.6220	6.6220
Storage - Price Adjustment	-	-	-	-	-
Commodity and Fuel (1)	11.2718	11.3534	11.4797	11.4797	11.5800
Commodity and Fuel - Price Adjustment	(1.6907)	(1.6907)	(1.6907)	(1.6907)	(1.6907)
Transportation	6.7292	6.7292	6.7292	2.9655	2.9655
Transportation - Price Adjustment	0.3919	0.3919	0.3919	0.3919	0.3919
Total Gas Supply Charge	<u>18.7611</u>	<u>18.8427</u>	<u>18.9690</u>	<u>19.7684</u>	<u>19.8687</u>

Rate 10 (cents / m³)

Storage	1.5495	1.5495	1.5495	4.6762	4.6762
Storage - Price Adjustment	-	-	-	-	-
Commodity and Fuel (1)	11.2718	11.3534	11.4797	11.4797	11.5800
Commodity and Fuel - Price Adjustment	(1.6907)	(1.6907)	(1.6907)	(1.6907)	(1.6907)
Transportation	5.8929	5.8929	5.8929	2.7303	2.7303
Transportation - Price Adjustment	0.4196	0.4196	0.4196	0.4196	0.4196
Total Gas Supply Charge	<u>17.4431</u>	<u>17.5247</u>	<u>17.6510</u>	<u>17.6151</u>	<u>17.7154</u>

Notes:

(1) The Commodity and Fuel rate includes a gas supply administration charge of 0.1902 cents/m³.



Union Gas Limited
Union North
Gas Supply Charges

<u>Utility Sales</u>	Union North West			Union North East	
	Previously	Previously	Previously	Previously	Previously
	<u>Fort Frances Zone</u>	<u>Western Zone</u>	<u>Northern Zone</u>	<u>Northern Zone</u>	<u>Eastern Zone</u>
<u>Rate 20 (cents / m³)</u>					
Commodity and Fuel (1)	11.0091	11.0888	11.2120	11.2120	11.3100
Commodity and Fuel - Price Adjustment	(1.6907)	(1.6907)	(1.6907)	(1.6907)	(1.6907)
Commodity Transportation - Charge 1	3.5625	3.5625	3.5625	2.6079	2.6079
Transportation 1 - Price Adjustment	(0.0806)	(0.0806)	(0.0806)	(0.0806)	(0.0806)
Commodity Transportation - Charge 2	-	-	-	-	-
Monthly Gas Supply Demand	55.8485	55.8485	55.8485	49.7267	49.7267
Gas Supply Demand - Price Adjustment	-	-	-	-	-
Commissioning and Decommissioning Rate	6.5222	6.5222	6.5222	5.3560	5.3560

Rate 100 (cents / m³)

Commodity and Fuel (1)	11.0091	11.0888	11.2120	11.2120	11.3100
Commodity and Fuel - Price Adjustment	(1.6907)	(1.6907)	(1.6907)	(1.6907)	(1.6907)
Commodity Transportation - Charge 1	6.2885	6.2885	6.2885	9.0613	9.0613
Commodity Transportation - Charge 2	-	-	-	-	-
Monthly Gas Supply Demand	112.0994	112.0994	112.0994	158.4424	158.4424
Commissioning and Decommissioning Rate	7.9600	7.9600	7.9600	11.3249	11.3249

Rate 25 (cents / m³)

Gas Supply Charge:

Interruptible Service					
Minimum	1.4848	1.4848	1.4848	1.4848	1.4848
Maximum	675.9484	675.9484	675.9484	675.9484	675.9484

Natural Gas Liquefaction Service (\$ / GJ) (2)

Gas Supply Charge:	Interruptible Service	
	Minimum	0.3919
	Maximum	178.3976

Notes:

- (1) The Commodity and Fuel rate includes a gas supply administration charge of 0.1902 cents/m³.
- (2) Billing in energy (\$/GJ) will only apply to the Natural Gas Liquefaction Service.

Effective: January 1, 2017 Chatham, Ontario
O.E.B. Order # EB-2016-0296

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



uniongas

Effective
2017-01-01
Schedule "A"

Gas Supply Charges

(A) Availability:

Available to customers in Union's Southern Delivery Zone.

(B) Applicability:

To all sales customers served under Rate M1, Rate M2, Rate M4, Rate M5A, Rate M7, Rate M9, Rate M10 and storage and transportation customers taking supplemental services under Rate T1, Rate T2 and Rate T3.

(C) Rates:

cents / m³

Utility Sales

Commodity and Fuel	11.5698 (1)
Commodity and Fuel - Price Adjustment	(0.6779)
Transportation	4.2031
Total Gas Supply Commodity Charge	15.0950

Minimum Annual Gas Supply Commodity Charge

Rate M4 Firm and Rate M5A Interruptible Contract	4.8595
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Storage and Transportation Supplemental Services - Rate T1, Rate T2 & Rate T3

\$/GJ

Monthly demand charges:	
Firm gas supply service	59.279
Firm backstop gas	1.692
Commodity charges:	
Gas supply	2.932
Backstop gas	4.520
Reasonable Efforts Backstop Gas	5.481
Supplemental Inventory	Note (2)
Supplemental Gas Sales Service (cents / m ³)	18.9201
Failure to Deliver: Applied to quantities not delivered to Union in the event the customer's supply fails	2.749
Discretionary Gas Supply Service (DGSS)	Note (3)

Notes:

- (1) The Commodity and Fuel rate includes a gas supply administration charge of 0.1902 cents/m³.
- (2) The charge for banked gas purchases shall be the higher of the daily spot gas cost at Dawn in the month of or the month following the month in which gas is sold under this rate and shall not be less than Union's approved weighted average cost of gas.
- (3) Reflects the "back to back" price plus a gas supply administration charge.

Effective: January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



SMALL VOLUME GENERAL SERVICE RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To general service customers whose total consumption is equal to or less than 50,000 m³ per year.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

		Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
a)	Monthly Charge	\$21.00	\$21.00
b)	Delivery Charge (1)		
	First 100 m ³	8.1019 ¢ per m ³	4.7838 ¢ per m ³
	Next 150 m ³	7.8608 ¢ per m ³	4.5427 ¢ per m ³
	All Over 250 m ³	7.2378 ¢ per m ³	3.9197 ¢ per m ³
	Delivery - Price Adjustment (All Volumes) (2)	0.4365 ¢ per m ³	0.4365 ¢ per m ³
c)	Storage Charge (if applicable)	0.7153 ¢ per m ³	0.7153 ¢ per m ³
	Storage - Price Adjustment (All Volumes)	- ¢ per m ³	- ¢ per m ³

Applicable to all bundled customers (sales and bundled transportation service).

d) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

During any month in which a customer terminates service or begins service, the fixed charge for the month will be prorated to such customer.

Notes:

- (1) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes temporary charges of 0.2283, and 0.2082 cents/m³ expiring March 31, 2017.

(D) Supplemental Service to Commercial and Industrial Customers Under Group Meters

Combination of readings from several meters may be authorized by the Company and the Company will not reasonably withhold authorization in cases where meters are located on contiguous pieces of property of the same owner not divided by a public right-of-way

(E) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.



(F) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(G) Overrun Charge

In the event that a direct purchase customer fails to deliver its contracted volumes to Union, and Union has the capability to continue to supply the customer, Union will do so. The customer may pay for the identified delivery charge and the total gas supply charge for utility sales provided in Schedule "A" per m³, plus 7¢ per m³.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Overrun Delivery Charge (1)	8.8172 ¢ per m ³	5.4991 ¢ per m ³

Notes:

- (1) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

(H) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule, the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union. Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.

(I) Company Policy Relating to Terms of Service

- a. Customers who temporarily discontinue service during any twelve consecutive months without payment of the monthly fixed charge for the months in which the gas is temporarily disconnected shall pay for disconnection and reconnection.
- b. When gas is delivered at an absolute pressure in excess of 101.325 kilopascals, then for purposes of measurement, hereunder, such volume of gas shall be corrected to an absolute pressure of 101.325 kilopascals. Atmospheric pressure is assumed to be the levels shown below in kilopascals (absolute) regardless of the actual atmospheric pressure at which the gas is measured and delivered.

<u>Zone</u>	Assumed Atmospheric Pressure <u>kPa</u>
1	100.148
2	99.494
3	98.874
4	98.564
5	98.185
6	97.754
7	97.582
8	97.065
9	96.721
10	100.561
11	99.321
12	98.883

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



LARGE VOLUME GENERAL SERVICE RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To general service customers whose total consumption is greater than 50,000 m³ per year.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

		Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
a)	Monthly Charge	\$70.00	\$70.00
b)	Delivery Charge (1)		
	First 1 000 m ³	8.0645 ¢ per m ³	4.7464 ¢ per m ³
	Next 6 000 m ³	7.9768 ¢ per m ³	4.6587 ¢ per m ³
	Next 13 000 m ³	7.7899 ¢ per m ³	4.4718 ¢ per m ³
	All Over 20 000 m ³	7.4705 ¢ per m ³	4.1524 ¢ per m ³
	Delivery – Price Adjustment (All Volumes) (2)	0.4836 ¢ per m ³	0.4836 ¢ per m ³
c)	Storage Charge (if applicable)	0.6252 ¢ per m ³	0.6252 ¢ per m ³
	Storage - Price Adjustment (All Volumes)	- ¢ per m ³	- ¢ per m ³

Applicable to all bundled customers (sales and bundled transportation service).

d) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

During any month in which a customer terminates service or begins service, the fixed charge for the month will be prorated to such customer.

Notes:

- (1) Includes cap-and-trade rates of 0.0209 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes temporary charges of 0.1629, and 0.3207 cents/m³ expiring March 31, 2017.

(D) Supplemental Service to Commercial and Industrial Customers Under Group Meters

Combination of readings from several meters may be authorized by the Company and the Company will not reasonably withhold authorization in cases where meters are located on contiguous pieces of property of the same owner not divided by a public right-of-way.

(E) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.



(F) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(G) Overrun Charge

In the event that a direct purchase customer fails to deliver its contracted volumes to Union, and Union has the capability to continue to supply the customer, Union will do so. The customer may pay for the identified delivery charge and the total gas supply charge for utility sales provided in Schedule "A" per m³, plus 7¢ per m³.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Overrun Delivery Charge (1)	8.6897 ¢ per m ³	5.3716 ¢ per m ³

Notes:

- (1) Includes cap-and-trade rates of 0.0209 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

(H) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule, the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union. Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.

(I) Company Policy Relating to Terms of Service

- a. Customers who temporarily discontinue service during any twelve consecutive months without payment of the monthly fixed charge for the months in which the gas is temporarily disconnected shall pay for disconnection and reconnection.
- b. When gas is delivered at an absolute pressure in excess of 101.325 kilopascals, then for purposes of measurement, hereunder, such volume of gas shall be corrected to an absolute pressure of 101.325 kilopascals. Atmospheric pressure is assumed to be the levels shown below in kilopascals (absolute) regardless of the actual atmospheric pressure at which the gas is measured and delivered.

<u>Zone</u>	Assumed Atmospheric Pressure <u>kPa</u>
1	100.148
2	99.494
3	98.874
4	98.564
5	98.185
6	97.754
7	97.582
8	97.065
9	96.721
10	100.561
11	99.321
12	98.883

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



FIRM INDUSTRIAL AND COMMERCIAL CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer who enters into a contract for the purchase or transportation of gas for a minimum term of one year that specifies a daily contracted demand between 2 400 m³ and 60 000 m³.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
1. Bills will be rendered monthly and shall be the total of:		
(i) A Monthly Demand Charge		
First 8 450 m ³ of daily contracted demand	56.9923 ¢ per m ³	56.9923 ¢ per m ³
Next 19 700 m ³ of daily contracted demand	25.5539 ¢ per m ³	25.5539 ¢ per m ³
All Over 28 150 m ³ of daily contracted demand	21.4688 ¢ per m ³	21.4688 ¢ per m ³
(ii) A Monthly Delivery Commodity Charge (1)		
First 422 250 m ³ delivered per month	4.7767 ¢ per m ³	1.4586 ¢ per m ³
Next volume equal to 15 days use of daily contracted demand	4.7767 ¢ per m ³	1.4586 ¢ per m ³
For remainder of volumes delivered in the month	3.9550 ¢ per m ³	0.6369 ¢ per m ³
Delivery- Price Adjustment (All Volumes)	- ¢ per m ³	- ¢ per m ³
(iii) Gas Supply Charge (if applicable)		
The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A"		
2. Overrun Charge		
Authorized overrun gas is available provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization. Overrun means gas taken on any day in excess of 103% of contracted daily demand. Authorized overrun will be available April 1 through October 31 at the identified authorized overrun delivery charge and, if applicable, the total gas supply charge for utility sales provided in Schedule "A" per m ³ for all volumes purchased.		
Unauthorized overrun gas taken in any month shall be paid for at the identified unauthorized overrun delivery charge for the delivery and the total gas supply charge for utility sales provided in Schedule "A" per m ³ for all gas supply volumes purchased.		
	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Authorized Overrun Delivery Charge (1)	6.6504 ¢ per m ³	3.3323 ¢ per m ³
Unauthorized Overrun Delivery Charge (2)	8.8172 ¢ per m ³	5.4991 ¢ per m ³



3. Firm Minimum Annual Charge

In each contract year, the customer shall purchase from Union or pay for a minimum volume of gas or transportation services equivalent to 146 days use of firm contracted demand. Overrun gas volumes will not contribute to the minimum volume. In the event that the customer shall not take such minimum volume the customer shall pay an amount equal to the deficiency from the minimum volume times the identified firm minimum annual delivery charge and, if applicable a gas supply commodity charge provided in Schedule "A".

Firm Minimum Annual Delivery Charge 1.6488 ¢ per m³

In the event that the contract period exceeds one year the annual minimum volume will be prorated for any part year.

4. Interruptible Service

Union may agree, in its sole discretion, to combine a firm service with an interruptible service provided that the amount of interruptible volume to be delivered and agreed upon by Union and the customer shall be no less than 350,000 m³ per year.

The price of all gas delivered by Union pursuant to any contract, contract amendment, or contract renewal shall be determined on the basis of the following schedules:

	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>
a) (i) Monthly Delivery Commodity Charge (3)		
<u>Daily Contracted Demand Level (CD)</u>		
2 400 m ³ ≤ CD < 17 000 m ³	6.3832 ¢ per m ³	3.0651 ¢ per m ³
17 000 m ³ ≤ CD < 30 000 m ³	6.2533 ¢ per m ³	2.9352 ¢ per m ³
30 000 m ³ ≤ CD < 50 000 m ³	6.1850 ¢ per m ³	2.8669 ¢ per m ³
50 000 m ³ ≤ CD ≤ 60 000 m ³	6.1371 ¢ per m ³	2.8190 ¢ per m ³

Delivery - Price Adjustment (All Volumes) - ¢ per m³ - ¢ per m³

(ii) Days Use of Interruptible Contract Demand

The price determined under Paragraph 4(a) of "Rates" will be reduced by the amount based on the number of Days Use of Contracted Demand as scheduled below:

For 75 days use of contracted demand	0.0530 ¢ per m ³	0.0530 ¢ per m ³
For each additional days use of contracted demand up to a maximum of 275 days, an additional discount of	0.00212 ¢ per m ³	0.00212 ¢ per m ³

(iii) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A"

(iv) Monthly Charge \$654.15 per month \$654.15 per month



- b) In each contract year, the customer shall take delivery from Union, or in any event pay for, if available and not accepted by the customer, a minimum volume of gas or transportation services as specified in the contract between the parties and which will not be less than 350 000 m³ per annum. Overrun volumes will not contribute to the minimum volume. In the event that the customer shall not take such minimum volume, the customer shall pay an amount equal to the deficiency from the minimum volume times the identified interruptible minimum annual delivery charge, and if applicable, a gas supply charge provided in Schedule "A".

In the event that the contract period exceeds one year, the annual minimum volume will be prorated for any part year.

Interruptible Minimum Annual Delivery Charge	3.2553 ¢ per m ³
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- c) Overrun gas is available without penalty provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization. Overrun means gas taken on any day in excess of 105% of contracted daily demand.

Unauthorized overrun gas taken in any month shall be paid for at the identified unauthorized overrun delivery charge and the total gas supply charge for utility sales provided in Schedule "A" per m³ for all gas supply volumes purchased.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Unauthorized Overrun Delivery Charge (2)	8.8172 ¢ per m ³	5.4991 ¢ per m ³

Unauthorized Overrun Non-Compliance Rate:

Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 232.8600 ¢ per m³ (\$60 per GJ) for the delivery.

Notes:

- (1) Includes cap-and-trade rates of 0.0280 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (3) Includes cap-and-trade rates of 0.0249 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems for all volumes. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union.

Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.

Effective	January 1, 2017	Chatham, Ontario
	O.E.B. Order # EB-2016-0296	

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



INTERRUPTIBLE INDUSTRIAL AND COMMERCIAL CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer who enters into a contract for the purchase or transportation of gas for a minimum term of one year that specifies a daily contracted demand between 2 400 m³ and 60 000 m³ inclusive.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

1. Interruptible Service

The price of all gas delivered by Union pursuant to any contract, contract amendment, or contract renewal shall be determined on the basis of the following schedules:

	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>
a) (i) Monthly Delivery Commodity Charge (1)		
<u>Daily Contracted Demand Level (CD)</u>		
2 400 m ³ ≤ CD < 17 000 m ³	6.3832 ¢ per m ³	3.0651 ¢ per m ³
17 000 m ³ ≤ CD < 30 000 m ³	6.2533 ¢ per m ³	2.9352 ¢ per m ³
30 000 m ³ ≤ CD < 50 000 m ³	6.1850 ¢ per m ³	2.8669 ¢ per m ³
50 000 m ³ ≤ CD ≤ 60 000 m ³	6.1371 ¢ per m ³	2.8190 ¢ per m ³
Delivery- Price Adjustment (All Volumes)	- ¢ per m ³	- ¢ per m ³
(ii) Days Use of Interruptible Contract Demand		
The price determined under Paragraph 1(a) of "Rates" will be reduced by the amount based on the number of Days Use of Contracted Demand as scheduled below:		
For 75 days use of contracted demand	0.0530 ¢ per m ³	0.0530 ¢ per m ³
For each additional days use of contracted demand up to a maximum of 275 days, an additional discount of	0.00212 ¢ per m ³	0.00212 ¢ per m ³
(iii) Gas Supply Charge (if applicable)		
The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A"		
(iv) Monthly Charge	\$654.15 per month	\$654.15 per month



- 2. In each contract year, the customer shall take delivery from Union, or in any event pay for, if available and not accepted by the customer, a minimum volume of gas or transportation services as specified in the contract between the parties and which will not be less than 350 000 m³ per annum. Overrun volumes will not contribute to the minimum volume. In the event that the customer shall not take such minimum volume, the customer shall pay an amount equal to the deficiency from the minimum volume times the identified interruptible minimum annual delivery charge, and if applicable, a gas supply charge provided in Schedule "A".

In the event that the contract period exceeds one year, the annual minimum volume will be prorated for any part year.

Interruptible Minimum Annual Delivery Charge	3.2553 ¢ per m ³
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- 3. Overrun gas is available without penalty provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization. Overrun means gas taken on any day in excess of 105% of contracted daily demand.

Unauthorized overrun gas taken in any month shall be paid for at the identified unauthorized overrun delivery charge and the total gas supply charge for utility sales provided in Schedule "A" per m³ for all gas supply volumes purchased.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Unauthorized Overrun Delivery Charge (2)	8.8172 ¢ per m ³	5.4991 ¢ per m ³

Unauthorized Overrun Non-Compliance Rate:

Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 232.8600 ¢ per m³ (\$60 per GJ) for the delivery.

- 4. Non-Interruptible Service

Union may agree, in its sole discretion, to combine an interruptible service with a firm service in which case the amount of firm daily demand to be delivered shall be agreed upon by Union and the customer.

- a) The monthly demand charge for firm daily deliveries will be 31.7959 ¢ per m³.
- b) The commodity charge for firm service shall be the rate for firm service at Union's firm rates net of a monthly demand charge of 31.7959 ¢ per m³ of daily contracted demand and a delivery commodity price adjustment of 0.0000 ¢ per m³. (3)
- c) The interruptible commodity charge will be established under Clause 1 of this schedule.

Notes:

- (1) Includes cap-and-trade rates of 0.0249 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (3) Includes cap-and-trade rates for facility-related greenhouse gas obligation costs related to the firm service.



(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union.

Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.



SPECIAL LARGE VOLUME
INDUSTRIAL AND COMMERCIAL CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a Customer

- a) who enters into a contract for the purchase or transportation of gas for a minimum term of one year that specifies a combined maximum daily requirement for firm, interruptible and seasonal service of at least 60 000 m³; and
- b) who has site specific energy measuring equipment that will be used in determining energy balances.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
1. Bills will be rendered monthly and shall be the total of:		
(i) A Monthly Demand Charge		
A negotiated Monthly Demand Charge for each m ³ of daily contracted firm demand up to	30.8246 ¢ per m ³	30.8246 ¢ per m ³
(ii) A Monthly Delivery Commodity Charge		
(1) A Monthly Firm Delivery Commodity Charge (1) for all firm volumes of and a Delivery - Price Adjustment of	3.8156 ¢ per m ³ - ¢ per m ³	0.4975 ¢ per m ³ - ¢ per m ³
(2) A Monthly Interruptible Delivery Commodity Charge (1) for all interruptible volumes to be negotiated between Union and the customer not to exceed an annual average of and a Delivery - Price Adjustment of	8.9958 ¢ per m ³ - ¢ per m ³	5.6777 ¢ per m ³ - ¢ per m ³
(3) A Monthly Seasonal Delivery Commodity Charge (1) for all seasonal volumes to be negotiated between Union and the customer not to exceed an annual average of and a Delivery - Price Adjustment of	8.7517 ¢ per m ³ - ¢ per m ³	5.4336 ¢ per m ³ - ¢ per m ³

(iii) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

(iv) Overrun Gas

Overrun gas is available without penalty provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization.

Unauthorized overrun gas taken in any month shall be paid for at the M1 rate in effect at the time the overrun occurs, plus, if applicable, the total gas supply charge for utility sales provided in Schedule "A" per m³ for all the gas supply volumes purchased.

Unauthorized Overrun Non-Compliance Rate:

Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 232.8600 ¢ per m³ (\$60 per GJ) for the delivery.



2. In negotiating the Monthly Interruptible and Seasonal Commodity Charges, the matters to be considered include:
 - (a) The volume of gas for which the customer is willing to contract,
 - (b) The load factor of the customer's anticipated gas consumption, the pattern of annual use, and the minimum annual quantity of gas which the customer is willing to contract to take or in any event pay for,
 - (c) Interruptible or curtailment provisions, and
 - (d) Competition.
3. In each contract year, the customer shall take delivery from Union, or in any event, pay for if available and not accepted by the customer, a minimum volume of gas as specified in the contract between the parties. Overrun gas volumes will not contribute to the minimum volume.
4. The contract may provide that the Monthly Demand Charge specified in Rate Section 1 above shall not apply on all or part of the daily contracted firm demand used by the customer during the testing, commissioning, phasing in, decommissioning and phasing out of gas-using equipment for a period not to exceed one year (the "transition period"). In such event, the contract will provide for a Monthly Delivery Commodity Charge to be applied on such volume during the transition at the identified commissioning and decommissioning rate and the total gas supply charge for utility sales provided in Schedule "A" per m³, if applicable.

	Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation
Commissioning and Decommissioning Rate (1)	7.4418 ¢ per m ³	4.1237 ¢ per m ³

5. Either the utility or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates and other charges different from the rates and other charges specified herein if the changed rates and other charges are considered by either party to be necessary, desirable and in the public interest.

Notes:

- (1) Includes cap-and-trade rates of 0.0288 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (3) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Bundled Direct Purchase Delivery and Short Term Supplemental Services

Where a customer elects transportation service and/or a short term supplemental service under this rate schedule, the customer must enter into a Contract under rate schedule R1.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



LARGE WHOLESale SERVICE RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a distributor who enters into a contract to purchase and/or receive delivery of a firm supply of gas for distribution to its customers and who agrees to take or pay for an annual quantity of at least two million cubic metres.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
1.		
(i) A Monthly Demand Charge of established daily demand determined in accordance with the service contract, such demand charge to be computed on a calendar month basis and a pro-rata charge to be made for the fraction of a calendar month which will occur if the day of first regular delivery does not fall on the first day of a month.	22.3154 ¢ per m ³	22.3154 ¢ per m ³
(ii) A Delivery Commodity Charge for gas delivered of (1) and a Delivery - Price Adjustment of	3.6327 ¢ per m ³ - ¢ per m ³	0.3146 ¢ per m ³ - ¢ per m ³
(iii) Gas Supply Charge (if applicable)		
The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".		

Notes

(1) Includes cap-and-trade rates of 0.0248 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.



(F) Overrun Charge

Authorized:

For all quantities on any day in excess of 103% of the customer's contractual rights, for which authorization has been received, the customer will be charged at the identified authorized overrun delivery charge. Overrun will be authorized by Union at its sole discretion.

Unauthorized:

For all quantities on any day in excess of 103% of the customer's contractual rights, for which authorization has not been received, the customer will be charged at the identified unauthorized overrun delivery charge.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Authorized Overrun Delivery Charge (1)	4.3664 ¢ per m ³	1.0483 ¢ per m ³
Unauthorized Overrun Delivery Charge (1)	39.3429 ¢ per m ³	36.0248 ¢ per m ³

Notes

(1) Includes cap-and-trade rates of 0.0248 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

(G) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union.

Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.



SMALL WHOLESALE SERVICE RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a non-contract distributor who purchases and/or receives delivery of a firm supply of gas for distribution only to its own customers.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
1. A Delivery Commodity Charge (1) of	10.1753 ¢ per m ³	6.8572 ¢ per m ³
2. Gas Supply Charge (if applicable)		

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A".

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Overrun Charge

In the event that a direct purchase customer fails to deliver its contracted volumes to Union, and Union has the capability to continue to supply the customer, Union will do so. This gas shall be paid for at the identified unauthorized overrun delivery charge and, if applicable, the total gas supply charge for utility sales provided in Schedule "A" per m³, plus 7¢ per m³ for all gas supply volumes purchased.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Unauthorized Overrun Delivery Charge (2)	8.8172 ¢ per m ³	5.4991 ¢ per m ³

(G) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule, the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union.

Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.

Notes:

- (1) Includes cap-and-trade rates of 0.0258 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

Effective

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Chatham, Ontario

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BUNDLED DIRECT PURCHASE CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer who enters into a Receipt Contract or Gas Purchase Contract for delivery and/or sale of gas to Union.

(C) Rates

	<u>Demand Charge Rate/GJ/month</u>	<u>Commodity Charges/Credits Rate/GJ</u>
a) Transportation by Union For gas delivered to Union at any point other than the Ontario Point(s) of Receipt, Union will charge a customer all approved tolls and charges, incurred by Union to transport the gas to the Ontario Point(s) of Receipt		
b) Firm Backstop Gas Applied to the contracted Firm Backstop Gas Supply Service	\$1.692	
Backstop Gas Commodity Charge On all quantities supplied by Union to the Ontario Point(s) of Receipt		\$4.520
c) Reasonable Efforts Backstop Gas Paid on all quantities of gas supplied by Union to the customer's Point(s) of Consumption		\$5.481
d) Banked Gas Purchase T-service		Note (1)
e) Failure to Deliver Applied to all quantities not delivered to Union in the event the customer's supply fails		\$2.749
f) Short Term Storage / Balancing Service (2) Maximum		\$6.000
g) Discretionary Gas Supply Service ("DGSS")		Note (3)
h) Parkway Delivery Commitment Incentive ("PDCI")		\$(0.158)



Notes:

- (1) The charge for banked gas purchases shall be the higher of the daily spot cost at Dawn in the month of or the month following the month in which gas is sold under this rate and shall not be less than Union's approved weighted average cost of gas.

- (2) Short Term Storage / Balancing Service is:
 - i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, OR
 - ii) short-term firm deliverability, OR
 - iii) a component of an operational balancing service offered.

In negotiating the rate to be charged for short term storage services, the matters that are to be considered include:

- i) The minimum amount of storage service to which a customer is willing to commit,
 - ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
 - iii) Utilization of facilities, and
 - iv) Competition
-
- (3) Discretionary Gas Supply Service price reflects the "back-to-back" price plus gas supply administration charge.



STORAGE AND TRANSPORTATION RATES
FOR CONTRACT CARRIAGE CUSTOMERS

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer:

- a) whose qualifying annual transportation volume for combined firm and interruptible service is at least 2 500 000 m³ or greater and has a daily firm contracted demand up to 140,870 m³; and
- b) who enters into a Carriage Service Contract with Union for the transportation or the storage and transportation of Gas for use at facilities located within Union's gas franchise area; and
- c) who has meters with electronic recording at each Point of Consumption; and
- d) who has site specific energy measuring equipment that will be used in determining energy balances; and
- e) for whom Union has determined transportation and/or storage capacity is available.

For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.

(C) Rates

The following rates shall be charged for all quantities contracted or handled as appropriate. The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

STORAGE SERVICE:

	Demand Charge	Commodity Charge	For Customers Providing Their Own Compressor Fuel	
	<u>Rate/GJ/mo</u>	<u>Rate/GJ</u>	<u>Fuel Ratio</u>	<u>Commodity Charge Rate/GJ</u>
a) Annual Firm Storage Space Applied to contracted Maximum Annual Storage Space	\$0.011			
b) Annual Firm Injection/Withdrawal Right: Applied to the contracted Maximum Annual Firm Injection/Withdrawal Right				
Union provides deliverability Inventory	\$1.561			
Customer provides deliverability Inventory (4)	\$1.186			
c) Incremental Firm Injection Right: Applied to the contracted Maximum Incremental Firm Injection Right	\$1.186			
d) Annual Interruptible Withdrawal Right: Applied to the contracted Maximum Annual Interruptible Withdrawal Right	\$1.186			



	Demand Charge <u>Rate/GJ/mo</u>	Commodity Charge <u>Rate/GJ</u>	For Customers Providing Their Own Compressor Fuel	
			Fuel Ratio <u>Ratio</u>	Commodity Charge <u>Rate/GJ</u>
e) Withdrawal Commodity Paid on all quantities withdrawn from storage up to the Maximum Daily Storage Withdrawal Quantity		\$0.028	0.406%	\$0.008
f) Injection Commodity Paid on all quantities injected into storage up to the Maximum Daily Storage Injection Quantity		\$0.028	0.406%	\$0.008
g) Short Term Storage / Balancing Service Maximum		\$6.000		

Notes:

1. Demand charges for Annual Services are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.
2. Annual Firm Injection Rights are equal to 100% of their respective Annual Firm Withdrawal Rights. Injection Rights in excess of the Annual Firm Injection Rights will be charged at the Incremental Firm Injection Right.
3. Annual Firm Storage Space

The maximum storage space available to a customer at the rates specified herein is determined by one of the following storage allocation methodologies:

3.1 Aggregate Excess

Aggregate excess is the difference between the customer's total 151-day winter consumption (November 1 through March 31) and the customer's average daily consumption (Daily Contract Quantity) for the contract year multiplied by 151 days of winter. This calculation will be done using two years of historical data (with 25% weighting for each year) and one year of forecast data (with 50% weighting). If a customer is new, or an existing customer is undergoing a significant change in operations, the allocation will be based on forecast consumption only, as negotiated between Union and the customer. Once sufficient historical information is available for the customer, the standard calculation will be done. At each contract renewal, the aggregate excess calculation will be performed to set the new space allocation.

3.2 Obligated daily contract quantity multiple of 15

Obligated daily contract quantity is the firm daily quantity of gas which the customer must deliver to Union. The 15 x obligated daily contract quantity calculation will be done using the daily contract quantity for the upcoming contract year. At each contract renewal, the 15 x obligated daily contract quantity calculation will be performed to set the new space allocation.

Customers may contract for less than their maximum entitlement of firm storage space.



4. Annual Injection/Withdrawal Right

The maximum level of deliverability available to a customer at the rates specified herein is determined by one of the following methodologies:

4.1 The greater of obligated daily contract quantity or firm daily contract demand less obligated daily contract quantity.

Customers may contract for less than their maximum entitlement of deliverability. A customer may contract up to this maximum entitlement with a combination of firm and interruptible deliverability as specified in Section (C) Storage Service.

5. Additional storage space or deliverability, in excess of the allocated entitlements per Notes 3 and 4, may be available at market prices.

6. Storage Space and Withdrawal Rights are not assignable to any other party without the prior written consent of Union.

7. Deliverability Inventory being defined as 20% of annual storage space.

8. Short Term Storage / Balancing Service is:

- i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, or
- ii) short-term firm deliverability, or
- iii) a component of an operational balancing service offered.

In negotiating the rate to be charged for service, the matters that are to be considered include:

- i) The minimum amount of storage service to which a customer is willing to commit,
- ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
- iii) Utilization of facilities, and
- iv) Competition



TRANSPORTATION CHARGES:

Demand Charge	Union Providing Compressor Fuel		Fuel Ratio (5)	For Customers Providing Their Own Compressor Fuel	
	Commodity Charge			Commodity Charge	
	Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation		Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation
<u>Rate/m³/mo</u>	<u>Rate/m³</u>	<u>Rate/m³</u>		<u>Rate/m³</u>	<u>Rate/m³</u>
a) Annual Firm Transportation Demand Applied to the Firm Daily Contract Demand First 28,150 m ³ per month Next 112,720 m ³ per month	35.4376 ¢ 24.4833 ¢				
b) Firm Transportation Commodity Paid on all firm quantities redelivered to the customer's Point(s) of Consumption Commodity Charge (All volumes) (6)	3.5286 ¢	0.2105 ¢	0.305%	3.4708 ¢	0.1527 ¢
c) Interruptible Transportation Commodity Paid on all interruptible quantities redelivered to the customer's Point(s) of Consumption Maximum (6)	8.9958 ¢	5.6777 ¢	0.305%	8.9380 ¢	5.6199 ¢

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, at its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.
2. In negotiating the rate to be charged for the transportation of gas under Interruptible Transportation, the matters that are to be considered include:
 - a) The amount of the interruptible transportation for which customer is willing to contract,
 - b) The anticipated load factor for the interruptible transportation quantities,
 - c) Interruptible or curtailment provisions, and
 - d) Competition.
3. In each contract year, the customer shall pay for a Minimum Interruptible Transportation Activity level as specified in the Contract. Overrun activity will not contribute to the minimum activity level.
4. Transportation fuel ratios do not apply to customers served from dedicated facilities directly connected to third party transmission systems with custody transfer metering at the interconnect.
5. Either Union or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates and other charges different from the rates and other charges specified herein if the changed rates and other charges are considered by either party to be necessary, desirable and in the public interest.
6. Includes cap-and-trade rates of 0.0167 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.



SUPPLEMENTAL CHARGES:

Rates for supplemental services are provided in Schedule "A".

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year.

OVERRUN SERVICE:

1. Annual Storage Space

Authorized

Authorized Overrun is provided as Storage/Balancing Service. It is payable on all quantities on any Day in excess of the customer's contracted Maximum Storage Space. Overrun will be authorized by Union at its sole discretion. Storage Space Overrun equal to the customer's firm deliveries from TCPL: less the customer's Firm Daily Contract Demand, all multiplied by the Days of Interruption called during the period of November 1 to March 31, will be automatically authorized until the following July 1.

Unauthorized

If in any month, the customer has gas in storage in excess of the contracted Maximum Storage Space, and which has not been authorized by Union or provided for under a short term supplemental storage service, such an event will constitute an occurrence of Unauthorized Overrun. The Unauthorized Overrun rate will be \$6.000 per GJ applied to the greatest excess for each occurrence.

If on any Day the gas storage balance for the account of the customer is less than zero, the Unauthorized Overrun charge will apply for each GJ of gas below a zero inventory level and this amount of gas shall be deemed not to have been withdrawn from storage. The gas shall be deemed to have been sold to the customer at the highest spot price at Dawn in the month of occurrence and the month following occurrence as identified in the Canadian Gas Price Reporter and shall not be less than Union's approved weighted average cost of gas. If the customer has contracted to provide its own deliverability inventory, the zero inventory level shall be deemed to mean twenty percent (20%) of the Annual Firm Storage Space.



2. Injection, Withdrawals and Transportation

Authorized

The following Overrun rates are applied to any quantities transported, injected or withdrawn in excess of 103% of the Contract parameters. Overrun will be authorized by Union at its sole discretion.

Automatic authorization of Injection Overrun will be given during all Days a customer has been interrupted.

	<u>Firm or Interruptible Service</u>				
	Union Providing Compressor Fuel		Fuel Ratio	For Customers Providing Their Own Compressor Fuel	
	Commodity Charge			Commodity Charge	
	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>	
Storage Injections	\$0.101/GJ	\$0.101/GJ	0.861%	\$0.059/GJ	\$0.059/GJ
Storage Withdrawals	\$0.101/GJ	\$0.101/GJ	0.861%	\$0.059/GJ	\$0.059/GJ
Transportation (1)	4.6937 ¢/m ³	1.3756 ¢/m ³	0.305%	4.6359 ¢/m ³	1.3178 ¢/m ³

Unauthorized

For all quantities on any Day in excess of 103% of the customer's contractual rights, for which authorization has not been received, the customer will be charged the identified unauthorized overrun charge, as appropriate.

	Including Customer-Related <u>GHG Obligation</u>	Excluding Customer-Related <u>GHG Obligation</u>
Unauthorized Overrun Storage Injections and Withdrawals Charge (2)	5.4991 ¢ per m ³ or \$1.417 per GJ	5.4991 ¢ per m ³ or \$1.417 per GJ
Unauthorized Overrun Transportation Charge (2)	8.8172 ¢ per m ³ or \$2.272 per GJ	5.4991 ¢ per m ³ or \$1.417 per GJ

Unauthorized Overrun Non-Compliance Rate:

Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 232.8600 ¢ per m³ (\$60 per GJ) for the transportation service.

Notes:

- (1) Includes cap-and-trade rates of 0.0167 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.



3. Storage / Balancing Service

Authorized

The following Overrun rates are applied to any quantities stored in excess of the Contract parameters. Overrun will be authorized by Union Gas at its sole discretion.

	Firm Service <u>Rate/GJ</u>
Space	\$6.000
Injection / Withdrawal Maximum	\$6.000

OTHER SERVICES & CHARGES:

1. Monthly Charge

In addition to the rates and charges described previously for each Point of Consumption, a Monthly Charge shall be applied as follows:

Monthly Charge	\$1,905.94
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2. Diversion of Gas

The availability of the right to divert gas will be based on Union's ability to accommodate the diversion. The price to be charged for the right to divert shall be determined through negotiation.

3. Delivery Obligations

Unless otherwise authorized by Union, all other customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

4. Additional Service Information

Additional information on Union's T1 service offering can be found at:
www.uniongas.com/business/account-services/unionline/contracts-rates/T1-service-features

The additional information consists of, but is not limited to, the following:

- i. Storage space and deliverability entitlement;
- ii. The determination of gas supply receipt points and delivery obligations;
- iii. The nomination schedule;
- iv. The management of multiple redelivery points by a common fuel manager; and
- v. The availability of supplemental transactional services including title transfers.

5. Parkway Delivery Commitment Incentive ("PDCI")

For all Parkway Delivery Obligation ("PDO") volumes delivered to Union.	<u>Rate/GJ</u>
PDCI	\$(0.158)

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

Effective

January 1, 2017
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Chatham, Ontario

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STORAGE AND TRANSPORTATION RATES
FOR CONTRACT CARRIAGE CUSTOMERS

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer:

- a) who has a daily firm contracted demand of at least 140 870 m³. Firm and/or interruptible daily contracted demand of less than 140,870 m³ cannot be combined for the purposes of qualifying for this rate class; and
- b) who enters into a Carriage Service Contract with Union for the transportation or the storage and transportation of Gas for use at facilities located within Union's gas franchise area; and
- c) who has meters with electronic recording at each Point of Consumption; and
- d) who has site specific energy measuring equipment that will be used in determining energy balances; and
- e) for whom Union has determined transportation and/or storage capacity is available.

For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.

(C) Rates

The following rates shall be charged for all quantities contracted or handled as appropriate. The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

STORAGE SERVICE:

	Demand Charge <u>Rate/GJ/mo</u>	Commodity Charge <u>Rate/GJ</u>	<u>For Customers Providing Their Own Compressor Fuel</u>	
			Fuel <u>Ratio</u>	Commodity Charge <u>Rate/GJ</u>
a) Annual Firm Storage Space Applied to contracted Maximum Annual Storage Space	\$0.011			
b) Annual Firm Injection/Withdrawal Right: Applied to the contracted Maximum Annual Firm Injection/Withdrawal Right Union provides deliverability Inventory	\$1.561			
Customer provides deliverability Inventory (4)	\$1.186			
c) Incremental Firm Injection Right: Applied to the contracted Maximum Incremental Firm Injection Right	\$1.186			
d) Annual Interruptible Withdrawal Right: Applied to the contracted Maximum Annual Interruptible Withdrawal Right	\$1.186			



	Demand Charge <u>Rate/GJ/mo</u>	Commodity Charge <u>Rate/GJ</u>	For Customers Providing Their Own Compressor Fuel	
			Fuel Ratio <u>Ratio</u>	Commodity Charge <u>Rate/GJ</u>
e) Withdrawal Commodity Paid on all quantities withdrawn from storage up to the Maximum Daily Storage Withdrawal Quantity		\$0.028	0.406%	\$0.008
f) Injection Commodity Paid on all quantities injected into storage up to the Maximum Daily Storage Injection Quantity		\$0.028	0.406%	\$0.008
g) Short Term Storage / Balancing Service Maximum		\$6.000		
h) Daily Variance Account Interruptible Injections/Withdrawals Paid on all quantities withdrawn from and injected into the Daily Variance Account up to the Maximum Injection/Withdrawal Quantity		\$0.101	0.861%	\$0.059

Notes:

1. Demand charges for Annual Services are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.
2. Annual Firm Injection Rights are equal to 100% of their respective Annual Firm Withdrawal Rights. Injection Rights in excess of the Annual Firm Injection Rights will be charged at the Incremental Firm Injection Right.
3. Annual Firm Storage Space

The maximum storage space available to a customer at the rates specified herein is determined by one of the following storage allocation methodologies:

3.1 Aggregate Excess

Aggregate excess is the difference between the customer's total 151-day winter consumption (November 1 through March 31) and the customer's average daily consumption (Daily Contract Quantity) for the contract year multiplied by 151 days of winter. This calculation will be done using two years of historical data (with 25% weighting for each year) and one year of forecast data (with 50% weighting). If a customer is new, or an existing customer is undergoing a significant change in operations, the allocation will be based on forecast consumption only, as negotiated between Union and the customer. Once sufficient historical information is available for the customer, the standard calculation will be done. At each contract renewal, the aggregate excess calculation will be performed to set the new space allocation.

3.2 Obligated daily contract quantity multiple of 15

Obligated daily contract quantity is the firm daily quantity of gas which the customer must deliver to Union. The 15 x obligated daily contract quantity calculation will be done using the daily contract quantity for the upcoming contract year. At each contract renewal, the 15 x obligated daily contract quantity calculation will be performed to set the new space allocation.

3.3 For new, large (daily firm transportation demand requirements in excess of 1,200,000 m³/day) gas fired power generation customers, storage space is determined by peak hourly consumption x 24 x 4 days. Should the customer elect firm deliverability less than their maximum entitlement (see Note 4.2), the maximum storage space available at the rates specified herein is 10 x firm storage deliverability contracted, not to exceed peak hourly consumption x 24 x 4 days.

3.4 Contract Demand multiple of 10

For customers with non-obligated supply and who are not eligible for Section 3.3 above, the maximum storage space is determined as 9 x firm daily Contract Demand and the Daily Variance Account maximum storage space is determined as 1 x firm daily Contract Demand.

Customers may contract for less than their maximum entitlement of firm storage space.



4. Annual Injection/Withdrawal Right

The maximum level of deliverability available to a customer at the rates specified herein is determined by one of the following methodologies:

4.1 The greater of obligated daily contract quantity or firm daily contract demand less obligated daily contract quantity.

4.2 For new, large (daily firm transportation demand requirements in excess of 1,200,000 m³/day) gas fired power generation customers, the maximum entitlement of firm storage deliverability is 24 times the customer's peak hourly consumption, with 1.2% firm deliverability available at the rates specified

4.3 For customers with non-obligated supply and are not eligible for Section 4.2 above, the firm storage deliverability is determined as 1.2% of firm storage space, excluding the firm storage space associated with the Daily Variance Account. For the Daily Variance Account, the storage deliverability is available on an interruptible basis up to the customer's firm contracted demand.

Customers may contract for less than their maximum entitlement of deliverability. A customer may contract up to this maximum entitlement with a combination of firm and interruptible deliverability as specified in Section (C) Storage Service.

5. Additional storage space or deliverability, in excess of the allocated entitlements per Notes 3 and 4, may be available at market prices.

6. Storage Space and Withdrawal Rights are not assignable to any other party without the prior written consent of Union.

7. Deliverability Inventory being defined as 20% of annual storage space.

8. Short Term Storage / Balancing Service is:

- i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, or
- ii) short-term firm deliverability, or
- iii) a component of an operational balancing service offered.

In negotiating the rate to be charged for service, the matters that are to be considered include:

- i) The minimum amount of storage service to which a customer is willing to commit,
- ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
- iii) Utilization of facilities, and
- iv) Competition.



TRANSPORTATION CHARGES:

	Demand Charge	Union Providing Compressor Fuel		Fuel Ratio (5)	For Customers Providing Their Own Compressor Fuel	
		Commodity Charge			Commodity Charge	
		Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation		Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation
		<u>Rate/m³/mo</u>	<u>Rate/m³</u>		<u>Rate/m³</u>	<u>Rate/m³</u>
a) Annual Firm Transportation Demand Applied to the Firm Daily Contract Demand First 140,870 m ³ per month All over 140,870 m ³ per month	26.4455 ¢ 13.9884 ¢					
b) Firm Transportation Commodity Paid on all firm quantities redelivered to the customer's Point(s) of Consumption Commodity Charge (All volumes) (8)		3.4239 ¢	0.1058 ¢	0.283%	3.3702 ¢	0.0521 ¢
c) Interruptible Transportation Commodity Paid on all interruptible quantities redelivered to the customer's Point(s) of Consumption Maximum (8)		8.9958 ¢	5.6777 ¢	0.283%	8.9421 ¢	5.6240 ¢

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, at its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.
2. Effective January 1, 2007, new customers and existing customers with incremental daily firm demand requirements in excess of 1,200,000 m³/day and who are directly connected to i) the Dawn-Trafalgar transmission system in close proximity to Parkway or ii) a third party pipeline, have the option to pay for service using a Billing Contract Demand. The Billing Contract Demand shall be determined by Union such that the annual revenues over the term of the contract will recover the invested capital, return on capital and operating and maintenance costs associated with the dedicated service in accordance with Union's system expansion policy. The firm transportation demand charge will be applied to the Billing Contract Demand. For customers choosing the Billing Contract Demand option, the authorized transportation overrun rate will apply to all volumes in excess of the Billing Contract Demand but less than the daily firm demand requirement.
3. In negotiating the rate to be charged for the transportation of gas under Interruptible Transportation, the matters that are to be considered include:
 - a) The amount of the interruptible transportation for which customer is willing to contract,
 - b) The anticipated load factor for the interruptible transportation quantities,
 - c) Interruptible or curtailment provisions, and
 - d) Competition.
4. In each contract year, the customer shall pay for a Minimum Interruptible Transportation Activity level as specified in the Contract. Overrun activity will not contribute to the minimum activity level.
5. Transportation fuel ratios do not apply to customers served from dedicated facilities directly connected to third party transmission systems with custody transfer metering at the interconnect.



6. Firm transportation fuel ratio does not apply to new customers or existing customers with incremental daily firm demand requirements in excess of 1,200,000 m³/day that contract for M12 Dawn to Parkway transportation service equivalent to 100% of their daily firm demand requirement. If a customer with a daily firm demand requirement in excess of 1,200,000 m³/day contracts for M12 Dawn to Parkway transportation service at less than 100% of their firm daily demand requirement, the firm transportation fuel ratio will be applicable to daily volumes not transported under the M12 transportation contract.
7. Either Union or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates and other charges different from the rates and other charges specified herein if the changed rates and other charges are considered by either party to be necessary, desirable and in the public interest.
8. Includes cap-and-trade rates of 0.0115 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

SUPPLEMENTAL CHARGES:

Rates for supplemental services are provided in Schedule "A".

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year.

OVERRUN SERVICE:

1. Annual Storage Space

Authorized

Authorized Overrun is provided as Storage/Balancing Service. It is payable on all quantities on any Day in excess of the customer's contracted Maximum Storage Space. Overrun will be authorized by Union at its sole discretion. Storage Space Overrun equal to the customer's firm deliveries from TCPL: less the customer's Firm Daily Contract Demand, all multiplied by the Days of Interruption called during the period of November 1 to March 31, will be automatically authorized until the following July 1. Authorized Overrun is not applicable to the Daily Variance Account.

Unauthorized

If in any month, the customer has gas in storage in excess of the contracted Maximum Storage Space, and which has not been authorized by Union or provided for under a short term supplemental storage service, such an event will constitute an occurrence of Unauthorized Overrun. The Unauthorized Overrun rate will be \$6.000 per GJ applied to the greatest excess for each occurrence.

If on any Day the gas storage balance for the account of the customer is less than zero, the Unauthorized Overrun charge will apply for each GJ of gas below a zero inventory level and this amount of gas shall be deemed not to have been withdrawn from storage. The gas shall be deemed to have been sold to the customer at the highest spot price at Dawn in the month of occurrence and the month following occurrence as identified in the Canadian Gas Price Reporter and shall not be less than Union's approved weighted average cost of gas. If the customer has contracted to provide its own deliverability inventory, the zero inventory level shall be deemed to mean twenty percent (20%) of the Annual Firm Storage Space.



2. Injection, Withdrawals and Transportation

Authorized

The following Overrun rates are applied to any quantities transported, injected or withdrawn in excess of 103% of the Contract parameters. Overrun will be authorized by Union at its sole discretion. The Authorized Overrun rates are not applicable to the Daily Variance Account.

Automatic authorization of Injection Overrun will be given during all Days a customer has been interrupted.

	<u>Firm or Interruptible Service</u>				
	<u>Union Providing Compressor Fuel</u>		<u>Fuel Ratio</u>	<u>For Customers Providing Their Own Compressor Fuel</u>	
	<u>Commodity Charge</u>			<u>Commodity Charge</u>	
	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>	
Storage Injections	\$0.101/GJ	\$0.101/GJ	0.861%	\$0.059/GJ	\$0.059/GJ
Storage Withdrawals	\$0.101/GJ	\$0.101/GJ	0.861%	\$0.059/GJ	\$0.059/GJ
Transportation (1)	4.2933 ¢/m ³	0.9752 ¢/m ³	0.283%	4.2396 ¢/m ³	0.9215 ¢/m ³

Unauthorized

For all quantities on any Day in excess of 103% of the customer's contractual rights, for which authorization has not been received, the customer will be charged the identified unauthorized overrun charge, as appropriate. For the Daily Variance Account, this unauthorized storage overrun rate will be charged on all quantities in excess of the Daily Variance Account maximum injection/withdrawal quantity.

	<u>Including Customer-Related GHG Obligation</u>	<u>Excluding Customer-Related GHG Obligation</u>
Unauthorized Overrun Storage Injections and Withdrawals Charge (2)	5.4991 ¢ per m ³ or \$1.417 per GJ	5.4991 ¢ per m ³ or \$1.417 per GJ
Unauthorized Overrun Transportation Charge (2)	8.8172 ¢ per m ³ or \$2.272 per GJ	5.4991 ¢ per m ³ or \$1.417 per GJ

Unauthorized Overrun Non-Compliance Rate:

Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 232.8600 ¢ per m³ (\$60 per GJ) for the transportation service.

Notes:

- (1) Includes cap-and-trade rates of 0.0115 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.
- (2) Includes cap-and-trade rates of 0.0297 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.



3. Storage / Balancing Service

Authorized

The following Overrun rates are applied to any quantities stored in excess of the Contract parameters. Overrun will be authorized by Union Gas at its sole discretion.

	<u>Firm Service Rate/GJ</u>
Space	\$6.000
Injection / Withdrawal Maximum	\$6.000

OTHER SERVICES & CHARGES:

1. Monthly Charge

In addition to the rates and charges described previously for each Point of Consumption, a Monthly Charge shall be applied as follows:

Monthly Charge	\$5,513.81
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2. Diversion of Gas

The availability of the right to divert gas will be based on Union's ability to accommodate the diversion. The price to be charged for the right to divert shall be determined through negotiation.

3. Delivery Obligations

The delivery options available to customers are detailed at:
www.uniongas.com/business/account-services/unionline/contracts-rates/T1-service-features

Unless otherwise authorized by Union, all other customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

4. Nominations

Effective January 1, 2007, new customers and existing customers with incremental daily firm demand requirements in excess of 1,200,000 m³/day who have non obligated deliveries may contract to use Union's 5 additional nomination windows (13 in total) for the purposes of delivering gas to Union. These windows are in addition to the standard NAESB and TCPL STS nomination windows. Customers taking the additional nomination window service will pay an additional monthly demand charge of \$0.070/GJ/day/month multiplied by the non-obligated daily contract quantity.



5. Additional Service Information

Additional information on Union's T2 service offering can be found at:
www.uniongas.com/business/account-services/unionline/contracts-rates/T1-service-features

The additional information consists of, but is not limited to, the following:

- i. Storage space and deliverability entitlement;
- ii. The determination of gas supply receipt points and delivery obligations;
- iii. The nomination schedule;
- iv. The management of multiple redelivery points by a common fuel manager; and
- v. The availability of supplemental transactional services including title transfers.

6. Parkway Delivery Commitment Incentive ("PDCI")

For all Parkway Delivery Obligation ("PDO") volumes delivered to Union.	<u>Rate/GJ</u>
PDCI	\$(0.158)

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



STORAGE AND TRANSPORTATION RATES
FOR CONTRACT CARRIAGE CUSTOMERS

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a Distributor:

- a) whose minimum annual transportation of natural gas is 700 000 m³ or greater; and
- b) who enters into a Carriage Service Contract with Union for the transportation or the storage and transportation of Gas for distribution to its customers; and
- c) who has meters with electronic recording at each Point of Redelivery; and
- d) for whom Union has determined transportation and/or storage capacity is available.

(C) Rates

The following rates shall be charged for all quantities contracted or handled as appropriate. The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

STORAGE SERVICE:

	<u>Demand Charge Rate/GJ/mo</u>	<u>Commodity Charge Rate/GJ</u>	<u>For Customers Providing Their Own Compressor Fuel</u>	
			<u>Fuel Ratio</u>	<u>Commodity Charge Rate/GJ</u>
a) Annual Firm Storage Space Applied to contracted Maximum Annual Storage Space	\$0.011			
b) Annual Firm Injection/Withdrawal Right: Applied to the contracted Maximum Annual Firm Injection/Withdrawal Right Union provides deliverability Inventory	\$1.561			
Customer provides deliverability Inventory (4)	\$1.186			
c) Incremental Firm Injection Right: Applied to the contracted Maximum Incremental Firm Injection Right	\$1.186			
d) Annual Interruptible Withdrawal Right: Applied to the contracted Maximum Annual Interruptible Withdrawal Right	\$1.186			



	Demand Charge <u>Rate/GJ/mo</u>	Commodity Charge <u>Rate/GJ</u>	<u>For Customers Providing Their Own Compressor Fuel</u>	
			Fuel Ratio	Commodity Charge <u>Rate/GJ</u>
e) Withdrawal Commodity Paid on all quantities withdrawn from storage up to the Maximum Daily Storage Withdrawal Quantity		\$0.028	0.406%	\$0.008
f) Injection Commodity Paid on all quantities injected into storage up to the Maximum Daily Storage Injection Quantity		\$0.028	0.406%	\$0.008
g) Short Term Storage / Balancing Service Maximum		\$6.000		

Notes:

1. Demand charges for Annual Services are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.
2. Annual Firm Injection Rights are equal to 100% of their respective Annual Firm Withdrawal Rights. Injection Rights in excess of the Annual Firm Injection Rights will be charged at the Incremental Firm Injection Right.
3. Annual Firm Storage Space

The maximum storage space available to a customer at the rates specified herein is determined by one of the following storage allocation methodologies:

3.1 Aggregate Excess

Aggregate excess is the difference between the customer's total 151-day winter consumption (November 1 through March 31) and the customer's average daily consumption (Daily Contract Quantity) for the contract year multiplied by 151 days of winter. This calculation will be done using two years of historical data (with 25% weighting for each year) and one year of forecast data (with 50% weighting). If a customer is new, or an existing customer is undergoing a significant change in operations, the allocation will be based on forecast consumption only, as negotiated between Union and the customer. Once sufficient historical information is available for the customer, the standard calculation will be done. At each contract renewal, the aggregate excess calculation will be performed to set the new space allocation.

3.2 Obligated daily contract quantity multiple of 15

Obligated daily contract quantity is the firm daily quantity of gas which the customer must deliver to Union. The 15 x obligated daily contract quantity calculation will be done using the daily contract quantity for the upcoming contract year. At each contract renewal, the 15 x obligated daily contract quantity calculation will be performed to set the new space allocation.

Customers may contract for less than their maximum entitlement of firm storage space.

4. Annual Injection/Withdrawal Right

The maximum level of deliverability available to a customer at the rates specified herein is determined to be the greater of obligated daily contract quantity or firm daily contract demand less obligated daily contract quantity.

Customers may contract for less than their maximum entitlement of deliverability. A customer may contract up to this maximum entitlement with a combination of firm and interruptible deliverability as specified in Section (C) Storage Service.



5. Additional storage space or deliverability, in excess of the allocated entitlements per Notes 3 and 4, may be available at market prices.
6. Storage Space and Withdrawal Rights are not assignable to any other party without the prior written consent of Union.
7. Deliverability Inventory being defined as 20% of annual storage space.
8. Short Term Storage / Balancing Service is:
 - i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, OR
 - ii) short-term firm deliverability, OR
 - iii) a component of an operational balancing service offered.

In negotiating the rate to be charged for this service, the matters that are to be considered include:

- i) The minimum amount of storage service to which a customer is willing to commit,
- ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
- iii) Utilization of facilities, and
- iv) Competition



TRANSPORTATION CHARGES:

	Demand Charge	Union Providing Compressor Fuel		Fuel Ratio	For Customers Providing Their Own Compressor Fuel	
		Commodity Charge			Commodity Charge	
		Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation		Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation
		Rate/m ³ /mo	Rate/m ³		Rate/m ³	Rate/m ³
a) Annual Firm Transportation Demand (1) Applied to the Firm Daily Contract Demand	16.7213 ¢					
b) Firm Transportation Commodity (2) Paid on all firm quantities redelivered to the Customer's Point(s) of Redelivery		3.5240 ¢	0.2059 ¢	0.380%	3.4520 ¢	0.1339 ¢

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.
2. Includes cap-and-trade rates of 0.0235 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

SUPPLEMENTAL CHARGES

Rates for supplemental services are provided in Schedule "A".

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year.

OVERRUN SERVICE

1. Annual Storage Space

Authorized

Authorized Overrun is provided as Storage/Balancing Service. It is payable on all quantities on any Day in excess of the customer's contracted Maximum Storage Space. Overrun will be authorized by Union at its sole discretion.

Unauthorized

If in any month, the customer has gas in storage in excess of the contracted Maximum Storage Space, and which has not been authorized by Union or provided for under a short term supplemental storage service, such an event will constitute an occurrence of Unauthorized Overrun. The Unauthorized Overrun rate will be \$6.000 per GJ applied to the greatest excess for each occurrence.

If on any Day, the gas storage balance for the account of the customer is less than zero, the Unauthorized Overrun charge will apply for each GJ of gas below a zero inventory level and this amount of gas shall be deemed not to have been withdrawn from storage. The gas shall be deemed to have been sold to the customer at the highest spot price at Dawn in the month of occurrence and the month following occurrence as identified in the Canadian Gas Price Reporter and shall not be less than Union's approved weighted average cost of gas. If the customer has contracted to provide its own deliverability inventory, the zero inventory level shall be deemed to mean twenty percent (20%) of the Annual Firm Storage Space.



2. Injection, Withdrawals and Transportation

Authorized

The following Overrun rates are applied to any quantities transported, injected or withdrawn in excess of 103% of the Contract parameters. Overrun will be authorized by Union at its sole discretion.

	Union Providing Compressor Fuel		Fuel Ratio	For Customers Providing Their Own Compressor Fuel	
	Commodity Charge			Commodity Charge	
	Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation		Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation
Storage Injections	\$0.101/GJ	\$0.101/GJ	0.861%	\$0.059/GJ	\$0.059/GJ
Storage Withdrawals	\$0.101/GJ	\$0.101/GJ	0.861%	\$0.059/GJ	\$0.059/GJ
Transportation (1)	4.0737 ¢/m ³	0.7556 ¢/m ³	0.380%	4.0017 ¢/m ³	0.6836 ¢/m ³

Unauthorized

For all quantities on any Day in excess of 103% of the customer's contractual rights, for which authorization has not been received, the customer will be charged the identified unauthorized overrun charge, as appropriate.

	Including Customer-Related GHG Obligation	Excluding Customer-Related GHG Obligation
Unauthorized Overrun Storage Injections and Withdrawals Charge	36.0000 ¢ per m ³ or \$9.276 per GJ	36.0000 ¢ per m ³ or \$9.276 per GJ
Unauthorized Overrun Transportation Charge (1)	39.3416 ¢ per m ³ or \$10.131 per GJ	36.0235 ¢ per m ³ or \$9.276 per GJ

Notes:

(1) Includes cap-and-trade rates of 0.0235 cents/m³ for facility-related greenhouse gas obligation costs and 3.3181 cents/m³ for customer-related greenhouse gas obligation costs, as applicable.

3. Short Term Storage Services

Authorized

The following Overrun rates are applied to any quantities stored in excess of the Contract parameters. Overrun will be authorized by Union Gas at its sole discretion.

	Firm Service Rate/GJ
Space	\$6.000
Injection / Withdrawal Maximum	\$6.000



OTHER SERVICES & CHARGES

1. Monthly Charge

In addition to the rates and charges described previously for each Point of redelivery a Monthly Charge shall be applied to each specific customer as follows:

	<u>Monthly Charge</u>
City of Kitchener	\$ 19,968.19
NRG	\$ 3,065.32
Six Nations	\$ 1,021.77

If a customer combines Sales Service with Contract Carriage Service, the monthly charge will be prorated such that the customer will under both services pay no more than the above monthly charge.

2. Diversion of Gas

The availability of the right to divert gas will be based on Union's ability to accommodate the diversion. The price to be charged for the right to divert shall be determined through negotiation.

3. Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

4. Parkway Delivery Commitment Incentive ("PDCI")

For all Parkway Delivery Obligation ("PDO") volumes delivered to Union.	<u>Rate/GJ</u>
PDCI	\$(0.158)

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



STORAGE RATES FOR
UNBUNDLED CUSTOMERS

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer, or an agent, who is authorized to service residential and non-contract commercial and industrial end-users paying for the Monthly Fixed Charge and Delivery charge under Rate M1 or Rate M2:

- a) who enters into an Unbundled Service Contract with Union for the storage of Gas for use at facilities located within Union's gas franchise area;
- b) who contracts for Standard Peaking Service (SPS) with Union unless the customer can demonstrate that it has a replacement to the deliverability available in the SPS physically tied into Union's system and an OEB approved rate to provide the SPS replacement service;
- c) who accepts daily estimates of consumption at Points of Consumption as prepared by Union so that they may nominate an equivalent amount from storage, upstream transportation, or Ontario Producers authorized to sell to third parties;
- d) who nominates injections and withdrawals from storage and deliveries on upstream pipeline systems daily or Ontario Producers authorized to sell to third parties;
- e) for whom Union has determined storage capacity is available; and
- f) who accepts a monthly bill as prepared by Union.

(C) Rates

The following rates shall be charged for all volumes contracted or handled as appropriate. The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

STORAGE SERVICE	Demand Charge <u>Rate/GJ/mo</u>	Fuel <u>Ratio</u>	Commodity Charge <u>Rate/GJ</u>
i) Standard Storage Service (SSS)			
a) Combined Storage Space & Deliverability Applied to contracted Maximum Storage Space	\$0.023		
b) Injection Commodity		0.406%	\$0.026
c) Withdrawal Commodity		0.406%	\$0.026
ii) Standard Peaking Service (SPS)			
a) Combined Storage Space & Deliverability Applied to contracted Maximum Storage Space	\$0.114		
b) Injection Commodity		0.406%	\$0.026
c) Withdrawal Commodity		0.861%	\$0.026



	Demand Charge <u>Rate/GJ/mo</u>	Fuel <u>Ratio</u>	Commodity Charge <u>Rate/GJ</u>
iii) Supplemental Service			
a) Incremental Firm Injection Right: (5) Applied to the contracted Maximum Incremental Firm Injection Right	\$1.030		
b) Incremental Firm Withdrawal Right: (5) Applied to the contracted Maximum Incremental Firm Withdrawal Right	\$1.030		
c) Short Term Storage / Balancing Service - Maximum			\$6.000

Notes:

1. Demand charges for Annual Services are paid monthly during the term of the Contract, which shall not be less than one year, unless Union, in its sole discretion, accepts a term of less than one year.
2. Daily Firm Injection and Withdrawal Rights shall be pursuant to the Storage Contract.
3. Storage Space, Withdrawal Rights, and Injection Rights are not assignable to any other party without the prior written consent of Union and where necessary, approval from the Ontario Energy Board.
4. Short Term Storage / Balancing service (less than 2 years) is:
 - i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, OR
 - ii) short-term incremental firm deliverability, OR
 - iii) a component of an operational balancing service offered.

In negotiating the rate to be charged for service, the matters that are to be considered include:

 - i) The minimum amount of storage service to which a customer is willing to commit,
 - ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
 - iii) Utilization of facilities,
 - iv) Competition, and
 - v) Term.
5. Union's ability to offer incremental injection and withdrawal rights is subject to annual asset availability.



OVERRUN SERVICE

1. Injection and Withdrawal

Authorized

	<u>Fuel Ratio</u>	<u>Commodity Charge Rate/GJ</u>
Injection	0.861%	\$0.060
Withdrawal	0.861%	\$0.060

The Authorized Overrun rate is payable on all quantities on any Day in excess of the customer's contractual rights, for which authorization has been received. Overrun will be authorized by Union at its sole discretion.

Unauthorized

If in any month, the customer has gas in storage in excess of the contracted Maximum Storage Space or the gas storage balance for the account of the customer is less than zero or the customer has injected or withdrawn volumes from storage which exceeds their contractual rights, and which has not been authorized by Union or provided for under a short term storage/balancing service, such an event will constitute an occurrence of Unauthorized Overrun. The Unauthorized Overrun rate during the November 1 to April 15 period will be \$60.00 per GJ. The Unauthorized Overrun rate during the April 16 to October 31 period will be \$6.000 per GJ.

OTHER SERVICES & CHARGES

1. Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must commit to provide a call at Parkway, throughout the winter period, for a specified number of days. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.
2. **Parkway Delivery Commitment Incentive ("PDCI")**

For all Parkway Delivery Obligation ("PDO") volumes delivered to Union.	<u>Rate/GJ</u>
PDCI	\$(0.158)

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



TRANSPORTATION RATES

(A) Applicability

The charges under this schedule shall be applicable to a Shipper who enters into a Transportation Service Contract with Union.

Applicable Points

Dawn as a receipt point: Dawn (TCPL), Dawn (Facilities), Dawn (Tecumseh), Dawn (Vector) and Dawn (TSLE).
Dawn as a delivery point: Dawn (Facilities).

(B) Services

Transportation Service under this rate schedule shall be for transportation on Union's Dawn - Parkway facilities.

(C) Rates

The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

	Monthly Demand Charges (applied to daily contract demand) Rate/GJ	Fuel and Commodity Charges		
		Union Supplied Fuel	Shipper Supplied Fuel	
		Fuel and Commodity Charge Rate/GJ	Fuel Ratio %	AND
<u>Firm Transportation (1)</u>				
Dawn to Parkway (Cons) / Lisgar	\$3.402	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".	\$0.006
Dawn to Parkway (TCPL / EGT)	\$3.402			\$0.009
Dawn to Kirkwall	\$2.865			\$0.006
Kirkwall to Parkway (Cons) / Lisgar	\$0.537			\$0.002
Kirkwall to Parkway (TCPL / EGT)	\$0.537			\$0.005
<u>M12-X Firm Transportation</u>				
Between Dawn, Kirkwall and Parkway	\$4.239	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".	Note (2)
<u>Limited Firm/Interruptible Transportation (1)</u>				
Dawn to Parkway (Cons) / Lisgar – Maximum	\$8.165	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".	\$0.006
Dawn to Parkway (TCPL / EGT) – Maximum	\$8.165			\$0.009
Dawn to Kirkwall – Maximum	\$8.165			\$0.006
Parkway (TCPL / EGT) to Parkway (Cons) / Lisgar (3)	n/a	n/a	0.157%	\$0.002

Authorized Overrun (4)

Authorized overrun rates will be payable on all quantities in excess of Union's obligation on any day. The overrun charges payable will be calculated at the following rates. Overrun will be authorized at Union's sole discretion.

	Fuel and Commodity Charges			
	Union Supplied Fuel	Shipper Supplied Fuel		
	Fuel and Commodity Charge Rate/GJ	Fuel Ratio %	AND	Commodity Charge Rate/GJ (2)
Transportation Overrun				
Dawn to Parkway (Cons) / Lisgar	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".		\$0.118
Dawn to Parkway (TCPL / EGT)				\$0.121
Dawn to Kirkwall				\$0.100
Kirkwall to Parkway (Cons) / Lisgar				\$0.020
Kirkwall to Parkway (TCPL / EGT)				\$0.023
Parkway (TCPL) Overrun (5)	n/a	0.704%		n/a
M12-X Firm Transportation				
Dawn to Kirkwall / Parkway (Cons) / Lisgar	Monthly fuel and commodity rates shall be in accordance with schedule "C".	Monthly fuel ratios shall be in accordance with schedule "C".		\$0.145
Dawn to Parkway (TCPL / EGT)				\$0.148
Kirkwall to Parkway (Cons) / Lisgar				\$0.141
Kirkwall to Parkway (TCPL / EGT)				\$0.144
Parkway to Dawn / Kirkwall				\$0.142
Kirkwall to Dawn		\$0.141		

(C) Rates (Cont'd)Unauthorized Overrun

Authorized Overrun rates will be payable on all quantities up to 2% in excess of Union's contractual obligation.

The Unauthorized Overrun shall be the higher of the reported daily spot price of gas at either Dawn, Parkway, Niagara or Iroquois in the month of or the month following the month in which the overrun occurred plus 25% for all usage on any day in excess of 102% of Union's contractual obligation.

Nomination Variances

Where Union and the shipper have entered into a Limited Balancing Agreement ("LBA"), the rate for unauthorized parking or drafting which results from nomination variances shall equal the "Balancing Fee" rate as described under Article XXII of TransCanada PipeLines Transportation Tariff.

Notes for Section (C) Rates:

- (1) The annual transportation commodity charge is calculated by application of the YCRR Formula, as per Section (D). The annual transportation fuel required is calculated by application of the YCR Formula, as per Section (D).
- (2) Includes cap-and-trade rates for facility-related greenhouse gas obligation costs for transportation of \$0.006/GJ for Dawn to Kirkwall / Parkway (Cons) / Lisgar, \$0.009/GJ for Dawn to Parkway (TCPL / EGT), \$0.002/GJ for Kirkwall to Parkway (Cons) / Lisgar, \$0.005/GJ for Kirkwall to Parkway (TCPL / EGT), \$0.002/GJ for Parkway (TCPL / EGT) to Parkway (Cons) / Lisgar, \$0.003/GJ for Parkway to Dawn / Kirkwall, and \$0.002/GJ for Kirkwall to Dawn.
- (3) This rate is for westerly transportation within the Parkway yard, from Parkway (TCPL) or Parkway (EGT) to Parkway (Cons) or Lisgar.
- (4) For purposes of applying the YCRR Formula or YCR Formula (Section (D)) to transportation overrun quantities, the transportation commodity revenue will be deemed to be equal to the commodity charge of the applicable service as detailed in Section (B).
- (5) This ratio will be applied to all gas quantities for which Union is obligated to deliver to Parkway (Cons) or Lisgar and has agreed to deliver to Parkway (TCPL) or Parkway (EGT) on an interruptible basis. This will be in addition to any rate or ratio paid for transportation easterly to Parkway (Cons) or Lisgar.
- (6) A demand charge of \$0.070/GJ/day/month will be applicable for customers contracting for firm all day transportation service in addition to the demand charges appearing on this schedule for firm transportation service to either Kirkwall or Parkway

(D) Transportation Commodity

The annual fuel charge in kind or in dollars for transportation service in any contract year shall be equal to the sum of the application of the following equation applied monthly for the 12 months April through March (The "YCRR" or "YCR" Formula). An appropriate adjustment in the fuel charges will be made in May for the previous 12 months ending March 31st to obtain the annual fuel charges as calculated using the applicable "YCRR" or "YCR" Formula. At Union's sole discretion Union may make more frequent adjustments than once per year. The YCRR and YCR adjustments must be paid/remitted to/from Shippers at Dawn within one billing cycle after invoicing.

(D) Transportation Commodity (Cont'd)

$$YCR = \sum_{1}^{4} [(0.001570 \times (QT1 + QT3)) + (DSF \times (QT1 + QT3)) + F_{ST}] \text{ For June 1 to Sept. 30}$$

plus

$$\sum_{5}^{12} [0.001570 \times (QT1 + Q3)) + (DWF \times QT1) + F_{WT}] \text{ For Oct. 1 to May 31}$$

$$YCRR = \sum_{1}^{4} [(0.001570 \times (QT1 + QT3)) + (DSF \times (QT1 + QT3)) + F_{ST}] \times R \text{ For June 1 to Sept. 30}$$

plus

$$\sum_{5}^{12} [(0.001570 \times (QT1 + QT3)) + (DWF \times QT1) + F_{WT}] \times R \text{ For Oct. 1 to May 31}$$

where: DSF = 0.00000 for Dawn summer fuel requirements
 DWF = 0.0020 for Dawn winter fuel requirements

in which:

YCR Yearly Commodity Required

The sum of 12 separate monthly calculations of Commodity Quantities required for the period from April through March.

YCRR Yearly Commodity Revenue Required

The sum of 12 separate monthly calculations of Commodity Revenue required for the period April through March.

QT1 Monthly quantities in GJ transported easterly hereunder received at Dawn at not less than 4 850 kPa but less than 5 860 kPa (compression required at Dawn).

QT3 Monthly quantities in GJ transported westerly hereunder received at the Parkway Delivery Point.

F_{WT} The individual Shipper's monthly share of compressor fuel used in GJ which was required at Union's Lobo, Bright, Trafalgar and Parkway Compressor Stations ("Lobo", "Bright", "Trafalgar" and "Parkway") to transport the same Shipper's QT1 monthly quantities easterly.

Lobo, Bright, Trafalgar and Parkway compressor fuel required by each Shipper will be calculated each month.

The monthly Lobo and Bright compressor fuel will be allocated to each Shipper in the same proportion as the Shipper's monthly quantities transported is to the monthly transported quantity for all users including Union.

The monthly Parkway and Trafalgar compressor fuel used will be allocated to each Shipper in the same proportion as the monthly quantity transported to Parkway (TCPL) for each user is to the total monthly quantity transported for all users including Union.

(D) Transportation Commodity (Cont'd)

F_{ST} The individual Shipper's monthly share of compressor fuel used in GJ which was required at Union's Lobo, Bright, Trafalgar and Parkway compressor stations to transport the same Shipper's quantity on the Trafalgar system.

Lobo, Bright, Trafalgar and Parkway compressor fuel required by each Shipper will be calculated each month.

R Union's weighted average cost of gas in \$/GJ.

Notes

(i) In the case of Easterly flow, direct deliveries by TCPL at Parkway to Union or on behalf of Union to Union's Transportation Shippers will be allocated to supply Union's markets on the Dawn-Parkway facilities starting at Parkway and proceeding westerly to successive laterals until exhausted.

(E) Provision for Compressor Fuel

For a Shipper that has elected to provide its own compressor fuel.

Transportation Fuel

On a daily basis, the Shipper will provide Union at the delivery point and delivery pressure as specified in the contract, a quantity (the "Transportation Fuel Quantity") representing the Shipper's share of compressor fuel and unaccounted for gas for transportation service on Union's system.

The Transportation Fuel Quantity will be determined on a daily basis, as follows:

Transportation Fuel Quantity = Transportation Quantity x Transportation Fuel Ratio.

In the event that the actual quantity of fuel supplied by the Shipper was different from the actual fuel quantity as calculated using the YCR formula, an adjustment will be made in May for the previous 12 months ending March 31st.

Nominations

The Shipper will be required to nominate its Transportation Fuel Quantity in addition to its normal nominations for transportation services.

(F) Terms of Service

The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A" for contracts in effect before October 1, 2010. The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A 2010" for contracts in effect on or after October 1, 2010.

(G) Nominations

Nominations under this rate schedule shall be in accordance with the attached Schedule "B" for contracts in effect before October 1, 2010. Nominations under this rate schedule shall be in accordance with the attached Schedule "B 2010" for contracts in effect on or after October 1, 2010.

(H) Monthly Fuel Rates and Ratios

Monthly fuel rates and ratios under this rate schedule shall be in accordance with Schedule "C".

(I) Receipt and Delivery Points and Pressures

Receipt and Delivery Points and Pressures under this rate schedule shall be in accordance with Schedule "D 2010" for contracts in effect on or after October 1, 2010.

UNION GAS LIMITED
M12 Monthly Transportation Fuel Ratios and Fuel and Commodity Rates
 Firm or Interruptible Transportation Commodity
 Effective January 1, 2017

Month	VT1 Easterly Dawn to Parkway (TCPL), Parkway (EGT) With Dawn Compression		VT1 Easterly Dawn to Kirkwall, Lisgar, Parkway (Consumers) With Dawn Compression		VT3 Westerly Parkway to Kirkwall, Dawn	
	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)
April	0.862	0.051	0.545	0.033	0.157	0.011
May	0.612	0.039	0.370	0.024	0.157	0.011
June	0.508	0.034	0.271	0.019	0.398	0.022
July	0.494	0.033	0.259	0.019	0.396	0.022
August	0.393	0.028	0.158	0.014	0.396	0.022
September	0.389	0.028	0.158	0.014	0.392	0.022
October	0.739	0.045	0.464	0.029	0.157	0.011
November	0.882	0.052	0.622	0.036	0.157	0.011
December	0.995	0.058	0.733	0.042	0.157	0.011
January	1.147	0.065	0.870	0.048	0.157	0.011
February	1.089	0.062	0.820	0.046	0.157	0.011
March	1.018	0.059	0.736	0.042	0.157	0.011

Month	M12-X Easterly Kirkwall to Parkway (TCPL), Parkway (EGT)		M12-X Easterly Kirkwall to Lisgar, Parkway (Consumers)		M12-X Westerly Parkway to Kirkwall, Dawn	
	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)
April	0.474	0.028	0.157	0.010	0.293	0.017
May	0.399	0.024	0.157	0.010	0.293	0.017
June	0.394	0.024	0.157	0.010	0.293	0.017
July	0.392	0.024	0.157	0.010	0.293	0.017
August	0.392	0.024	0.157	0.010	0.293	0.017
September	0.388	0.024	0.157	0.010	0.293	0.017
October	0.432	0.026	0.157	0.010	0.293	0.017
November	0.418	0.025	0.157	0.010	0.157	0.011
December	0.420	0.025	0.157	0.010	0.157	0.011
January	0.434	0.026	0.157	0.010	0.157	0.011
February	0.426	0.026	0.157	0.010	0.157	0.011
March	0.439	0.026	0.157	0.010	0.157	0.011

Notes:

- (1) Fuel rate is calculated based on the October 2016 QRAM (EB-2016-0247) Ontario landed reference price of \$4.881/GJ and includes cap-and-trade facility-related greenhouse gas obligation costs of \$0.006/GJ for Dawn to Kirkwall / Parkway (Cons) / Lisgar, \$0.009/GJ for Dawn to Parkway (TCPL / EGT), \$0.002/GJ for Kirkwall to Lisgar / Parkway (Cons), \$0.005/GJ for Kirkwall to Parkway (TCPL), and \$0.003/GJ for Parkway to Dawn / Kirkwall.

UNION GAS LIMITED
M12 Monthly Transportation Authorized Overrun Fuel Ratios and Fuel and Commodity Rates
 Firm or Interruptible Transportation Commodity
 Effective January 1, 2017

Month	VT1 Easterly Dawn to Parkway (TCPL), Parkway (EGT) With Dawn Compression		VT1 Easterly Dawn to Kirkwall, Lisgar, Parkway (Consumers) With Dawn Compression		VT3 Westerly Parkway to Kirkwall, Dawn	
	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)
April	1.479	0.193	1.162	0.157	0.774	0.153
May	1.228	0.181	0.987	0.148	0.774	0.153
June	1.125	0.176	0.888	0.144	1.015	0.164
July	1.111	0.175	0.876	0.143	1.013	0.164
August	1.010	0.170	0.775	0.138	1.013	0.164
September	1.005	0.170	0.775	0.138	1.009	0.164
October	1.356	0.187	1.081	0.153	0.774	0.153
November	1.499	0.194	1.239	0.161	0.774	0.153
December	1.612	0.200	1.350	0.166	0.774	0.153
January	1.764	0.207	1.486	0.173	0.774	0.153
February	1.706	0.204	1.437	0.170	0.774	0.153
March	1.635	0.201	1.353	0.166	0.774	0.153

Month	M12-X Easterly Kirkwall to Parkway (TCPL), Parkway (EGT)		M12-X Easterly Kirkwall to Lisgar, Parkway (Consumers)		M12-X Westerly Parkway to Kirkwall, Dawn	
	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)	Fuel Ratio (%)	Fuel and Commodity Rate (\$/GJ) (1)
April	1.091	0.198	0.774	0.179	0.910	0.187
May	1.016	0.194	0.774	0.179	0.910	0.187
June	1.011	0.194	0.774	0.179	0.910	0.187
July	1.009	0.194	0.774	0.179	0.910	0.187
August	1.009	0.194	0.774	0.179	0.910	0.187
September	1.005	0.193	0.774	0.179	0.910	0.187
October	1.049	0.196	0.774	0.179	0.910	0.187
November	1.035	0.195	0.774	0.179	0.774	0.180
December	1.037	0.195	0.774	0.179	0.774	0.180
January	1.051	0.196	0.774	0.179	0.774	0.180
February	1.043	0.195	0.774	0.179	0.774	0.180
March	1.056	0.196	0.774	0.179	0.774	0.180

Notes:

- (1) Fuel rate is calculated based on the October 2016 QRAM (EB-2016-0247) Ontario landed reference price of \$4.881/GJ and includes the applicable M12 commoditized demand rate and cap-and-trade facility-related greenhouse gas obligation costs of \$0.006/GJ for Dawn to Kirkwall / Parkway (Cons) / Lisgar, \$0.009/GJ for Dawn to Parkway (TCPL / EGT), \$0.002/GJ for Kirkwall to Lisgar / Parkway (Cons), \$0.005/GJ for Kirkwall to Parkway (TCPL), and \$0.003/GJ for Parkway to Dawn / Kirkwall.



TRANSPORTATION OF LOCALLY PRODUCED GAS

(A) Applicability

The charges under this rate schedule shall be applicable to a customer who enters into a contract with Union for gas received at a local production point to be transported to Dawn.

Applicable Points

Dawn as a delivery point: Dawn (Facilities).

(B) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Demand Commodity

	Demand Charge Rate/Month	Commodity Charge Rate/GJ	Union Supplied Fuel Fuel and Commodity Charge Rate/GJ	Shipper Supplied Fuel Fuel Ratio %	AND	Commodity Charge Rate/GJ
1. Monthly fixed charge per Customer Station	\$952.72					
2. Transmission Commodity Charge		\$0.035				
3. Delivery Commodity Charge (1)			\$0.010	0.157%		\$0.002

These charges are in addition to the transportation, storage and/or balancing charges which shall be paid for under Rate M12 or Rate C1, or other services that may be negotiated.

4. Overrun Services

Authorized Overrun

Authorized overrun will be payable on all quantities transported in excess of Union's obligation on any day. The overrun charges payable will be calculated at the identified authorized overrun charge. Overrun will be authorized at Union's sole discretion.

	Union Supplied Fuel Fuel and Commodity Charge Rate/GJ	Shipper Supplied Fuel Fuel Ratio %	AND	Commodity Charge Rate/GJ
Authorized Overrun Charge (1)	\$0.079	0.157%		\$0.071

Unauthorized Overrun

Authorized Overrun rates payable on all volumes up to 2% in excess of Union's contractual obligation.

The Unauthorized Overrun rate during the November 1 to April 15 period will be \$50 per GJ for all usage on any day in excess of 102% of Union's contractual obligation. The Unauthorized Overrun rate during the April 16 to October 31 period will be \$9.373 per GJ for all usage on any day in excess of 102% of Union's contractual obligation.

Notes:

(1) Includes cap-and-trade rates for facility-related greenhouse gas obligation costs of \$0.002/GJ.

(C) Terms of Service

General Terms & Conditions applicable to this rate shall be in accordance with the attached Schedule "A" in effect before January 1, 2013. The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A 2013" for contracts in effect on or after January 1, 2013.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



STORAGE AND TRANSPORTATION SERVICES TRANSPORTATION CHARGES

(A) Availability

The charges under this rate schedule shall be applicable for transportation service rendered by Union for all quantities transported to and from embedded storage pools located within Union's franchise area and served using Union's distribution and transmission assets.

Applicable Points

- Dawn as a receipt point: Dawn (Facilities).
- Dawn as a delivery point: Dawn (Facilities).

(B) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

a) Charges Applicable to both Firm and/or Interruptible Transportation Services:

Monthly Fixed Charge per customer station (\$ per month) (1)	\$1,515.67
Transmission Commodity Charge to Dawn (\$ per GJ)	\$0.035

Transportation Fuel	<u>Customers located East of Dawn</u>	<u>Customer located West of</u>
Fuel Charges to Dawn:		
Commodity Rate - Union supplied fuel (\$ per GJ) (2)	\$0.010	\$0.010
Commodity Rate - Shipper supplied fuel (\$ per GJ) (2)	\$0.002	\$0.002
Fuel Ratio - Shipper supplied fuel (%)	0.157%	0.157%
Fuel Charges to the Pool		
Commodity Rate - Union supplied fuel (\$ per GJ) (2)	\$0.011	\$0.027
Commodity Rate - Shipper supplied fuel (\$ per GJ) (2)	\$0.002	\$0.005
Fuel Ratio - Shipper supplied fuel (%)	0.186%	0.447%

b) Firm Transportation Demand Charges: (3)

Monthly Demand Charge applied to contract demand (\$ per GJ)	\$0.770	\$1.045
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Authorized Overrun:

The authorized overrun rate payable on all quantities transported in excess of Union's obligation any day shall be:

Firm Transportation:	<u>Customers located East of Dawn</u>	<u>Customer located West of</u>
Charges to Dawn		
Commodity Rate - Union supplied fuel (\$ per GJ) (2)	\$0.069	\$0.079
Commodity Rate - Shipper supplied fuel (\$ per GJ) (2)	\$0.062	\$0.071
Fuel Ratio - Shipper supplied fuel (%)	0.157%	0.157%
Charges to the Pool		
Commodity Rate - Union supplied fuel (\$ per GJ) (2)	\$0.036	\$0.061
Commodity Rate - Shipper supplied fuel (\$ per GJ) (2)	\$0.027	\$0.039
Fuel Ratio - Shipper supplied fuel (%)	0.186%	0.447%

Overrun will be authorized at Union's sole discretion.



Unauthorized Overrun

Authorized Overrun rates payable on all transported quantities up to 2% in excess of Union's contractual obligation.

The Unauthorized Overrun rate during the November 1 to April 15 period will be \$50 per GJ for all usage on any day in excess of 102% of Union's contractual obligation. The Unauthorized Overrun rate during the April 16 to October 31 period will be \$9.373 per GJ for all usage on any day in excess of 102% of Union's contractual obligation.

Charges aforesaid in respect of any given month in accordance with General Terms & Conditions shall be payable no later than the twenty-fifth day of the succeeding month.

Notes for Section (B) Rates:

- (1) The monthly fixed charge will be applied once per month per customer station regardless of service being firm, interruptible or a combination thereof.
- (2) Includes cap-and-trade rates for facility-related greenhouse gas obligation costs of \$0.002/GJ for transportation to Dawn from a Pool, \$0.002/GJ for transportation to a Pool east of Dawn and \$0.005/GJ for transportation to a Pool west of Dawn.
- (3) Demand charges will be applicable to customers firm daily contracted demand or the firm portion of a combined firm and interruptible service.

(C) Terms of Service

The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A" for contracts in effect before October 1, 2010. The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A 2013" for contracts in effect on or after January 1, 2013.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.



CROSS FRANCHISE TRANSPORTATION RATES

(A) Applicability

To a Shipper who enters into a Contract with Union for delivery by Shipper of gas to Union at one of Union's points listed below for redelivery by Union to Shipper at one of Union's points.

<u>Applicable Points</u>	(1)	(2)
	Ojibway	WDA
	St. Clair	NDA
	Dawn*	SSMDA
	Parkway	SWDA
	Kirkwall	CDA
	Bluewater	EDA

*Dawn as a receipt point: Dawn (TCPL), Dawn (Facilities), Dawn (Tecumseh), Dawn (Vector) and Dawn (TSLE).

*Dawn as a delivery point: Dawn (Facilities).

(B) Services

Transportation Service under this rate schedule is transportation on Union's pipeline facilities between any two Points as specified in Section (A), column 1.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

Transportation Service (1):

	Monthly Demand <u>Charges</u> (applied to daily contract demand) <u>Rate/GJ</u>	Union Supplied Fuel		Fuel and Commodity Charges			Commodity <u>Charge</u> <u>Rate/GJ (2)</u>
		Fuel and Commodity Charge		Shipper Supplied Fuel		AND	
		Apr.1-Oct.31 <u>Rate/GJ (2)</u>	Nov.1-Mar.31 <u>Rate/GJ (2)</u>	Fuel Ratio			
		Apr.1-Oct.31 <u>Rate/GJ (2)</u>	Nov.1-Mar.31 <u>Rate/GJ (2)</u>	Apr.1-Oct.31 <u>%</u>	Nov.1-Mar.31 <u>%</u>		
a) Firm Transportation							
Between:							
St.Clair & Dawn	\$1.045	\$0.014	\$0.017	0.207%	0.266%		\$0.004
Ojibway & Dawn	\$1.045	\$0.026	\$0.019	0.447%	0.303%		\$0.004
Bluewater & Dawn	\$1.045	\$0.014	\$0.017	0.207%	0.266%		\$0.004
From:							
Parkway to Kirkwall	\$0.837	\$0.017	\$0.011	0.293%	0.157%		\$0.003
Parkway to Dawn	\$0.837	\$0.017	\$0.011	0.293%	0.157%		\$0.003
Kirkwall to Dawn	\$1.475	\$0.010	\$0.010	0.157%	0.157%		\$0.002
Dawn to Kirkwall	\$2.865	\$0.022	\$0.043	0.318%	0.756%		\$0.006
Dawn to Parkway (Cons) / Lisgar	\$3.402	\$0.034	\$0.056	0.571%	1.026%		\$0.006
Dawn to Parkway (TCPL)	\$3.402	\$0.037	\$0.059	0.571%	1.026%		\$0.009
Kirkwall to Parkway (Cons) / Lisgar	\$0.537	\$0.022	\$0.023	0.410%	0.427%		\$0.002
Kirkwall to Parkway (TCPL)	\$0.537	\$0.025	\$0.026	0.410%	0.427%		\$0.005
b) Firm Transportation between two points within Dawn							
Dawn to Dawn-Vector	\$0.029	n/a	n/a	0.339%	0.157%		\$0.003
Dawn to Dawn-TCPL	\$0.138	n/a	n/a	0.157%	0.351%		\$0.004
c) Interruptible Transportation between two points within Dawn*							
*includes Dawn (TCPL), Dawn Facilities, Dawn (Tecumseh), Dawn (Vector) and Dawn (TSLE)				0.157%	0.157%		\$0.002
d) Interruptible and Short Term (1 year or less) Firm Transportation:							
Maximum		\$75.00					



(C) Rates (Cont'd)

Authorized Overrun:

The following Overrun rates are applied to any quantities transported in excess of the Contract parameters. Overrun will be authorized at Union's sole discretion.

	Union Supplied Fuel		Shipper Supplied Fuel			
	Commodity Charge		Fuel Ratio		Commodity Charge	
	Apr.1-Oct.31	Nov.1-Mar.31	Apr.1-Oct.31	Nov.1-Mar.31		Rate/GJ (2)
	Rate/GJ (2)	Rate/GJ (2)	%	%	AND	Rate/GJ (2)
a) Firm Transportation						
Between:						
St.Clair & Dawn	\$0.048	\$0.051	0.207%	0.266%		\$0.038
Ojibway & Dawn	\$0.060	\$0.053	0.447%	0.303%		\$0.038
Bluewater & Dawn	\$0.048	\$0.051	0.207%	0.266%		\$0.038
From:						
Parkway to Kirkwall	\$0.159	\$0.153	0.910%	0.774%		\$0.115
Parkway to Dawn	\$0.159	\$0.153	0.910%	0.774%		\$0.115
Kirkwall to Dawn	\$0.058	\$0.058	0.157%	0.157%		\$0.051
Dawn to Kirkwall	\$0.146	\$0.167	0.935%	1.373%		\$0.100
Dawn to Parkway (Cons) / Lisgar	\$0.176	\$0.198	1.188%	1.643%		\$0.118
Dawn to Parkway (TCPL)	\$0.179	\$0.201	1.188%	1.643%		\$0.121
Kirkwall to Parkway (Cons) / Lisgar	\$0.070	\$0.071	1.027%	1.044%		\$0.020
Kirkwall to Parkway (TCPL)	\$0.073	\$0.074	1.027%	1.044%		\$0.023
b) Firm Transportation within Dawn						
Dawn to Dawn-Vector	n/a	n/a	0.339%	0.157%		\$0.004
Dawn to Dawn-TCPL	n/a	n/a	0.157%	0.351%		\$0.009

Authorized overrun for short-term firm transportation is available at negotiated rates.

Unauthorized Overrun:

The Unauthorized Overrun rate shall be the higher of the reported daily spot price of gas at either, Dawn, Parkway, Niagara, Iroquois or Chicago in the month of or the month following the month in which the overrun occurred plus 25% for all usage on any day in excess of 102% of Union's contractual obligation.

Notes for Section (C) Rates:

- (1) A demand charge of \$0.070/GJ/day/month will be applicable to customers contracting for firm all day transportation service in addition to the demand charges appearing on this schedule for all firm transportation service paths.
- (2) Includes cap-and-trade rates for facility-related greenhouse gas obligation costs for transportation of \$0.004/GJ between St. Clair / Ojibway / Bluewater and Dawn, \$0.003/GJ from Parkway to Kirkwall / Dawn, \$0.002/GJ for from Kirkwall to Dawn, \$0.006/GJ from Dawn to Kirkwall, \$0.006/GJ from Dawn to Parkway (Cons) / Lisgar, \$0.009/GJ from Dawn to Parkway (TCPL), \$0.002/GJ from Kirkwall to Parkway (Cons) / Lisgar, \$0.005/GJ from Kirkwall to Parkway (TCPL), \$0.003/GJ between Dawn to Dawn-Vector, \$0.004/GJ between Dawn to Dawn-TCPL, and, \$0.002/GJ between two points within Dawn.

(D) Terms of Service

The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A" for contracts in effect before October 1, 2010. The General Terms & Conditions applicable to this rate schedule shall be in accordance with the attached Schedule "A 2010" for contracts in effect on or after October 1, 2010.

(E) Nominations

Nominations under this rate schedule shall be in accordance with the attached Schedule "B" for contracts in effect before October 1, 2010. Nominations under this rate schedule shall be in accordance with the attached Schedule "B 2010" for contracts in effect on or after October 1, 2010.

(F) Receipt and Delivery Points and Pressures

Receipt and Delivery Points and Pressures under this rate schedule shall be in accordance with Schedule "C 2010" for contracts in effect on or after October 1, 2010.

Effective

January 1, 2017
O.E.B. Order # EB-2016-0296

Chatham, Ontario

Supersedes EB-2016-0245 Rate Schedule effective January 1, 2017.

UNION GAS LIMITED
Infranchise Customers
Summary of Average Interruptible Rate and Price Adjustment Changes for Rates 25, M4, M5A, M7, T1 and T2
Effective January 1, 2017

Line No.	Particulars (cents / m ³)	Monthly Charge Increase / (Decrease) (a)	Delivery Commodity Charge Increase / (Decrease) (b)	Delivery - Price Adjustment Increase / (Decrease) (c)	Gas Commodity Price Adjustment Rate (1) (d)
	Rate 25 - All Zones				
1	Including Customer-Related GHG Obligation		3.3198		(0.2720)
2	Excluding Customer-Related GHG Obligation		0.0017		(0.2720)
	Rate M4 - Interruptible				
3	Including Customer-Related GHG Obligation		3.3519		
4	Excluding Customer-Related GHG Obligation		0.0338		
	Rate M5A - Interruptible				
5	Including Customer-Related GHG Obligation		3.3519		
6	Excluding Customer-Related GHG Obligation		0.0338		
	Rate M7				
	Interruptible				
7	Including Customer-Related GHG Obligation		3.3469		
8	Excluding Customer-Related GHG Obligation		0.0288		
	Seasonal				
9	Including Customer-Related GHG Obligation		3.3469		
10	Excluding Customer-Related GHG Obligation		0.0288		
	Rate T1 - Interruptible				
	Transportation - Union supplies fuel				
11	Including Customer-Related GHG Obligation		3.3442		
12	Excluding Customer-Related GHG Obligation		0.0261		
	Transportation - Customer supplies fuel				
13	Including Customer-Related GHG Obligation		3.3442		
14	Excluding Customer-Related GHG Obligation		0.0261		
	Rate T2 - Interruptible				
	Transportation - Union supplies fuel				
15	Including Customer-Related GHG Obligation		3.3315		
16	Excluding Customer-Related GHG Obligation		0.0134		
	Transportation - Customer supplies fuel				
17	Including Customer-Related GHG Obligation		3.3315		
18	Excluding Customer-Related GHG Obligation		0.0134		

Notes:

(1) Applies to sales service customers only.