



Andrew Mandyam
Director Regulatory Affairs,
Financial Planning
and Analysis

tel 416-495-5499
fax 416-495-6072
EGDRegulatoryProceedings@enbridge.com

Enbridge Gas Distribution
500 Consumers Road
North York, Ontario M2J 1P8
Canada

VIA RESS, EMAIL and COURIER

January 8, 2018

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, Suite 2700
Toronto, ON M4P 1E4

**Re: File Number: EB-2017-0224
Enbridge Gas Distribution Inc. ("Enbridge")
2018 Cap and Trade Compliance Plan Application ("Application")
Updated Evidentiary Filing**

By a letter dated December 14, 2017, the Ontario Energy Board ("Board") requested that Enbridge review the list of evidentiary filings which were contained in the Board's letter and advise as to whether these could be filed publicly or to state the reason why they should be treated strictly confidential. Enbridge has carefully reviewed each of the evidentiary references identified in the Board's letter and has determined that the majority can be filed publicly subject only to several specific redactions which Enbridge believes are necessary because the information is auction confidential and/or market sensitive which, as a result, must continue to be treated strictly confidential in accordance with the Board's Cap & Trade Framework (EB-2015-0363).

Enbridge is contemporaneously filing with this letter an update to both the public and strictly confidential portions of its Application with the revisions as noted above.

Yours truly,

[original signed]

Andrew Mandyam
Director, Regulatory Affairs, Financial Planning and Analysis

cc: Mr. D. O'Leary, Aird & Berlis LLP
Mr. D. Stevens, Aird & Berlis LLP
All Interested Parties EB-2016-0300 (via email)

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EXHIBIT LIST

B – FORECASTS

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C – COMPLIANCE PLAN DOCUMENTS

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			Appendix D – Bill Impacts for LFE	A. Kacicnik

EXECUTIVE SUMMARY

1. Enbridge Gas Distribution Inc. (“Enbridge” or the “Company”) has prepared this 2018 Cap and Trade Compliance Plan in accordance with and in response to the Ontario Energy Board’s (the “Board”) Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities (the “Framework”) issued on September 26, 2016. Enbridge respectfully submits that this Compliance Plan addresses the Framework’s guiding principles and satisfies its requirements and as such, should be approved and accepted by the Board.
2. The Board released its Decision and Order on Enbridge’s 2017 Compliance Plan (EB-2016-0300) on September 21, 2017. In that Decision and Order, the Board approved the Customer-Related Obligation and Facilities-Related Obligation cost consequences as filed by Enbridge and found that Enbridge’s proposed administrative costs were consistent with the expectations in the Framework. The Board approved the Cap and Trade Charges (Tariffs) filed by Enbridge, and approved or did not dispute the other publicly filed aspects of Enbridge’s 2017 Compliance Plan.
3. Enbridge’s 2018 Compliance Plan builds upon the 2017 Compliance Plan. Enbridge has chosen a one year term because the carbon market remains nascent in North America, particularly in Ontario, and there is an obvious and recognized learning curve for all parties involved regarding aspects of carbon market strategy design and implementation. This is expected to be the first year of linkage with the California and Québec carbon markets and the first year where Ontario’s Offsets Credits Regulation will apply. As a result, Enbridge has focused

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

on the creation of a well-conceived and thorough one-year Compliance Plan for 2018.

4. The following paragraphs set out a summary of Enbridge's 2018 Compliance Plan filing.
5. Exhibit A – Administrative Documents: This Executive Summary briefly reviews the many areas identified in the Application as required by the Board. The specific relief sought is filed in the Application document at Exhibit A, Tab 2, Schedule 1. The remainder of the Administration documents in Exhibit A include a discussion of Confidentiality at Exhibit A, Tab 3, Schedule 1, the list of Curriculum Vitae at Exhibit A, Tab 4, Schedule 1, and finally a Glossary of Terms at Exhibit A, Tab 5, Schedule 1.
6. Exhibit B – Forecasts: To develop the one-year 2018 Compliance Plan, Enbridge followed the guidance in the Framework to develop its volumetric forecast and related forecasted Greenhouse Gas ("GHG") emission obligations. Enbridge worked collaboratively with customers to refine volume forecasts including the addition of forecast volumes for the natural gas power producers and the subtraction of volumes related to Large Final Emitters ("LFEs") and those customers who have chosen to voluntarily "opt-in" to the Cap and Trade program. This was then converted to a GHG emission forecast based on the methodologies in the GHG reporting regulation. Forecasting Period, Volume and GHG Emission Forecasts are outlined in Exhibit B, Tab 1, Schedule 1, Exhibit B, Tab 2, Schedule 1, and Exhibit B, Tab 3, Schedule 1 respectively.
7. The Company has calculated the applicable Cap and Trade Charges (Tariffs) using the average of the 21-day strip price of the Intercontinental Exchange

Witnesses: A. Langstaff
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("ICE") daily settlements of a California Carbon Allowance ("CCA") for delivery in each month of the forecasted 2018 year (the "21-day ICE Price"). The 21-day period was from September 1 to 29, 2017. This methodology, which is described at Exhibit B, Tab 4, Schedule 1, is consistent with the discussion in Section 5.2.3 of the Framework. The ICE forecast is a reasonable and relevant carbon proxy price for rate setting purposes based on the assumption that the Ontario market is linked with the California and Québec markets in 2018. Exhibit B, Tab 4, Schedule 1 identifies the 21-day ICE Price used for rate making purposes.

8. Exhibit C – Compliance Plan: This Exhibit forms the basis of the full Compliance Plan from the planning approach to the specific Compliance Plan strategy. Several of the documents in this section are confidential. How Enbridge approached its compliance planning is found at Exhibit C, Tab 1, Schedule 1. Exhibit C, Tab 2, Schedule 1 is the review of the Compliance Plan strategy, including discussion of decision making and optimization analysis for financial instruments. A detailed analysis of the Allowance Procurement Strategy is documented in Exhibit C, Tab 3, Schedule 1, and the detailed analysis of the Offset Procurement Strategy is documented in Exhibit C, Tab 4, Schedule 1. The Abatement Overview is described at Exhibit C, Tab 5, Schedule 1. Customer Abatement Strategy is described at Exhibit C, Tab 5, Schedule 2, followed by the Facility Abatement Strategy at Exhibit C, Tab 5, Schedule 3. Documentation and discussion of risks and their mitigation forms the basis of Exhibit C, Tab 6, Schedule 1. Monitoring and Reporting is described at Exhibit C, Tab 7, Schedule 1 and Exhibit C, Tab 7, Schedule 2.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

9. Exhibit D – Administrative Costs: 2018 Forecasted Administrative Costs and 2016 Administrative Costs are filed at Exhibit D, Tab 1, Schedule 1 and Exhibit D, Tab 1, Schedule 2, respectively.
10. Exhibit E – Customer Outreach: Exhibit E, Tab 1, Schedule 1 details the Company's plans for communication and outreach in 2018, which are informed by Enbridge's experience in 2017.
11. Exhibit F – Deferral and Variance Accounts: In the evidence at Exhibit F, Tab 1, Schedule 1, Enbridge describes the deferral and variance accounts necessary for the Cap and Trade activities in 2018.
12. Exhibit G – Cost Recovery: Exhibit G, Tab 1, Schedule 1, Attachment A, Table A3, identifies the Cap and Trade Unit Rate for Customer-Related and Facility-Related obligations according to rate class. These values have been calculated based on forecasted GHG emission obligations and Enbridge's proposed carbon proxy price, both as described in Exhibit B.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*,
S.O. 1998, c. 15, Sched. B, as amended;

AND IN THE MATTER OF an Application by Enbridge Gas Distribution Inc. for an order or orders approving and/or accepting its 2018 Cap and Trade Compliance Plan and approving or fixing rates and/or charges to recover the costs incurred undertaking its Cap and Trade Compliance Plan.

APPLICATION

1. The Applicant, Enbridge Gas Distribution Inc. (“Enbridge”, or the “Company”), is an Ontario corporation with its head office in Toronto, Ontario. It carries on the business of selling, distributing, transmitting and storing natural gas within Ontario.
2. The relevant persons affected by this Application are the customers of Enbridge, with the exception of Large Final Emitters (“LFE”), i.e., facilities that emit more than 25,000 tonnes of carbon dioxide equivalent (“tCO₂e”), as well as “voluntary participants” in the Cap and Trade program who emit between 10,000 and 25,000 tCO₂e and purchase their own emissions allowances but still incur applicable facility-related and administrative costs. It is impractical to set out the names and addresses of the relevant customers because they are too numerous.
3. On May 18, 2016, the *Climate Change Mitigation and Low-carbon Economy Act, 2016* (“Climate Change Act”) received Royal Assent. Under the Climate Change Act, Enbridge has compliance obligations and will incur costs to meet these obligations:

- a. Customer-related obligation costs: costs which Enbridge will incur to acquire the necessary emission allowances and other instruments and to undertake customer abatement activities to meet its compliance obligations under the Cap and Trade program for natural gas-fired generators and residential, commercial and industrial customers who are not Large Final Emitters ("LFEs") or voluntary participants and any resulting increase to financing costs;
- b. Facility-related obligation costs: costs to acquire the necessary emission allowances and other instruments and to undertake facility abatement activities to meet its compliance obligations arising from the Company's facilities and operation of its gas distribution system and any resulting increase to financing costs; and
- c. Incremental administrative and program costs: including, but not limited to costs associated with salary and benefits of management and staff required to oversee and undertake all necessary administrative functions; investigating and implementing incremental GHG abatement activities; changes to Enbridge's billing systems; costs to retain external consultants, such as emission allowance acquisition strategists, external legal counsel, external accounting support; costs payable in respect of current and future cap and trade Ontario Energy Board (the "Board") regulatory proceedings; costs for measurement, verification and reporting of Greenhouse Gas ("GHG") emissions; and the resulting incremental impact on customer-related bad debt, customer care and/or customer communication expenses.

4. On September 26, 2016, the Board issued the *Report of the Board: Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap & Trade Activities* (EB-2015-0363) (the "Framework"). The Framework states that the Board will assess Enbridge's Compliance Plan (the "Compliance Plan") for cost effectiveness, reasonableness and optimization and ultimately to determine whether to approve the associated Cap and Trade costs for recovery from customers.¹

5. The Framework contemplated that Enbridge would file its 2018 Compliance Plan by August 1, 2017. However, to allow the Natural Gas Utilities an opportunity to consider the pending Decision of the Board in respect of the 2017 Compliance Plan filings, the Board by letter dated July 27, 2017 granted each of the Natural Gas Utilities an extension to the filing of their 2018 Compliance Plans until three weeks following the issuance of the Board's Decision in respect of the 2017 Compliance Plans. This letter also indicated that if further time was required, a request for a further extension could be made. On September 21, 2017, the Board issued its Decision and Order in respect of the Company's 2017 Compliance Plan (EB-2016-0300). By letter dated October 3, 2017, Enbridge requested an extension to file this Application until November 9, 2017. This request was granted by the Board.

6. In EB-2012-0459, Enbridge received approval effective January 1, 2014 for a five-year Custom Incentive Regulation ("Custom IR") Plan which determines how rates are set in the years 2014 – 2018 inclusive. Enbridge is currently operating under this Custom IR plan with 2018 being the last year of its five-year term. Neither the Custom IR plan, nor the pending 2018 Rate Adjustment Application (EB-2017-0086) provide for the recovery of the costs which Enbridge will incur undertaking Cap and Trade Compliance Plan Activities in 2018 and beyond. This Application therefore seeks the appropriate orders, approvals and acceptances by the Board to establish rates and/or

¹ Framework, page 1

charges over and above those set pursuant to Enbridge's Custom IR plan and the 2018 Rate Adjustment Application.

7. Enbridge hereby applies to the Board for a determination that the Company's Compliance Plan is compliant with the Framework and is accepted by the Board because:

- a. The term of the Compliance Plan, being one-year, is appropriate;
- b. It is reasonable and has prudently optimized decision-making to achieve efficiency and to reasonably manage risk given the legislative framework, the tools available at this time, and evolving nature of Ontario's carbon market (including the pending linkage with Quebec and California);
- c. It demonstrates that Enbridge's proposed abatement activities and planned investment decisions have been prudently prioritized and paced including proposed long-term investments;
- d. It will result in reasonable, predictable rates arising from Enbridge's Cap and Trade activities as much as is reasonable;
- e. It includes an appropriate degree of transparency and documentation;
- f. It provides for the appropriate levels of flexibility which will allow Enbridge to adapt to changing market conditions;
- g. It includes an appropriate Customer Outreach and Communication Plan;
- h. It includes appropriate monitoring and reporting mechanisms and requirements; and,
- i. It provides for continuous improvement over time.

8. Enbridge further applies to the Board pursuant to Section 36 of the *Ontario Energy Board Act, 1998*, as amended (the "Act") for such final, interim or other orders or accounting orders or determinations as may be necessary or appropriate to approve the following:

- a. 2018 Customer-related and Facilities-related Tariffs or Charges (referred to in this Application as the "Cap and Trade Tariffs") to recover the costs of meeting Enbridge's obligations related to GHG emissions from relevant customers and Company facilities;
- b. Interim Cap and Trade Tariffs, to be approved on or before December 1, 2017 in order that the Interim Cap and Trade Tariffs can be included with Enbridge's Quarterly Rate Adjustment Mechanism (QRAM) Application and implemented as of January 1, 2018. In the event that Interim Cap and Trade Tariffs for 2018 cannot be approved on this timeline, then Enbridge requests that the 2017 Cap and Trade Tariffs be declared as interim for 2018 as of January 1, 2018, with any necessary adjustments to be made later in the 2018, after the 2018 Cap and Trade Tariffs are approved;
- c. The establishment of a 2018 Greenhouse Gas Emissions Compliance Obligation – Customer-related variance account ("GHG-Customer VA") and a 2018 Greenhouse Gas Emissions Compliance Obligation – Facility-related variance account ("GHG-Facility VA") to record the differences that occur in 2018 between the actual revenues received from the Cap and Trade Tariffs and the actual costs Enbridge incurs to meet its 2018 obligations related to GHG emissions from relevant customers and Company facilities. These variance accounts will ensure that the Company neither over or under-recovers its Customer and Facility-related obligation costs;

- d. The amounts recorded in the 2016 Greenhouse Gas Emissions Impact Deferral Account (“GGEIDA”) and an order approving the clearance of such amounts to customers at the next practical QRAM;
 - e. The illustrative bill impacts of a typical residential customer that include the sum of Cap and Trade charges for Customer-related and Facility-related costs found at Exhibit G, Tab 1, Schedule 1 and appendices;
 - f. The RNG procurement model set out in Exhibit C, Tab 5, Schedule 2. Enbridge requests approval of the RNG procurement model as early as possible, and no later than the end of January 2018, so that important local sources of RNG can be procured for the longer term benefit of Ontarians; and,
 - g. The forecast costs associated with Enbridge’s planned abatement activities as set out in Exhibit C, Tab 5, Schedule 1, which are comprised of the cost for two additional full-time equivalent (“FTE”) employee resources and available funds of up to \$2 million in the Low Carbon Initiative Fund (“LCIF”) that will be tracked through the 2018 GGEIDA.
9. Enbridge requests confidential treatment of documentation, data and information (“Documents”) pursuant to the Board’s Rules of Practice and Procedure and the Practice Direction on Confidential Filings in respect of Documents marked “Auction Confidential”, “Market Sensitive” or “Confidential” or as specified in the Confidentiality exhibit in this filing at Exhibit A, Tab 3, Schedule 1, and in accordance with the Climate Change Act, O. Reg. 144/16: The Cap and Trade Program (“Cap and Trade Regulation” or “the Regulation”), and the Framework.

10. Enbridge further applies to the Board, pursuant to the provisions of the Climate Change Act, the Cap and Trade Regulation and the Board's *Rules of Practice and Procedure*, for such final, interim or other Orders and directions as may be appropriate in relation to the Application and the proper conduct of this proceeding.

11. Where there have been deviation(s) from the Framework, Enbridge has provided an explanation and reasons why those deviation(s) are just and reasonable in the appropriate Exhibit. A summary of the deviation(s), is as follows:

- a. Carbon proxy price – the approach that Enbridge has used to set the carbon proxy price is somewhat different from the Guidelines and from what is set out in the EB-2016-0300 Decision and Order. The reasons why Enbridge's approach is appropriate are explained in Exhibit B, Tab 4, Schedule 1.

12. Enbridge requests that a copy of every document filed with the Board in this proceeding be served on the Applicant and the Applicant's counsel, as follows:

The Applicant:

Regulatory Contact:
Mr. Andrew Mandyam
Director, Regulatory Affairs,
Financial Planning and Analysis
Enbridge Gas Distribution Inc.

Address for personal service: 500 Consumers Road
Willowdale, Ontario M2J 1P8

Mailing address: P. O. Box 650
Scarborough, Ontario M1K 5E3

Telephone: 416-495-5499 or 1-888-659-0685

Fax: 416-495-6072

Email: EGDRegulatoryProceedings@enbridge.com

Primary Carbon Strategy Contact:
Ms. Fiona Oliver-Glasford
Manager Carbon Strategy
Enbridge Gas Distribution Inc.

Address for personal service: 500 Consumers Road
Willowdale, Ontario M2J 1P8

Mailing address: P. O. Box 650
Scarborough, Ontario M1K 5E3

Telephone: 416-753-4664

Email: fiona.oliverglasford@enbridge.com

The Applicant's counsel:

Mr. Dennis M. O'Leary
Mr. David Stevens
Aird & Berlis LLP

Address for personal service
and mailing address

Brookfield Place, P.O. Box 754
Suite 1800, 181 Bay Street
Toronto, Ontario M5J 2T9

Telephone:
Fax:
Email:

416-865-4711/416-865-7783
416-863-1515
doleary@airdberlis.com
dstevens@airdberlis.com

DATED: November 9, 2017 at Toronto, Ontario

ENBRIDGE GAS DISTRIBUTION INC.

Per: [original signed]
Andrew Mandyam
Director, Regulatory Affairs, Financial
Planning and Analysis

CONFIDENTIALITY

1. It is clear from both *The Climate Change Mitigation and Low-carbon Economy Act, 2016* ("Climate Change Act") and from the Report of the Board in respect of the Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities (EB-2015-0363) ("Framework") that certain activities which Enbridge will necessarily undertake to meet its Cap and Trade obligations must be done in a manner which ensures the integrity of the market and is in confidence. The Climate Change Act contains specific prohibitions against conduct which would constitute a market fraud or market manipulation. It also contains specific prohibitions against the disclosure of certain types of information under Section 32. Specifically, sub-sections 32(6) and (7) state as follows:

(6) No person shall disclose whether or not the person is participating in an auction.

(7) No person shall disclose information relating to the person's participation in an auction, including the person's identity, bidding strategy, the amount of the person's bids for a specified quantity of emission allowances and the financial information provided to the Director in connection with the auction.

2. Subsection 32(9) of the Climate Change Act states that subsections (6), (7) and (8) do not apply with respect to a disclosure to such persons as may be prescribed. Under Section 65 to Ontario Regulation 144/16 "The Cap and Trade Program" the Ontario Energy Board (the "Board") is a prescribed person. It is therefore a statutory requirement that the information identified in subsections 32(6) and (7) must not be disclosed to any person other than the Board.

3. The Framework recognizes these disclosure limitations and notes at page 9:

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

Witnesses: A. Langstaff
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development, the appropriate approach must not only comply with the *Climate Change Act* and associated regulations, it should also be cautious and have regard to market integrity in order to protect customers from undue costs while still making appropriate information publicly available where possible.

4. The Board has set two categories of strictly confidential Cap and Trade Information: Auction Confidential and Market Sensitive Confidential information. Specifics and examples of such information are included at page 10 of the Framework. Enbridge notes that where information is either Auction Confidential or Market Sensitive, that information will be automatically treated as strictly confidential and will only be reviewed by the Ontario Energy Board.
5. Enbridge further notes that the Framework requires that the Utilities file redacted versions of Auction Confidential and Market Sensitive Confidential information. Where this is appropriate, Enbridge has done so. However, in some cases the entirety of a piece of evidence is confidential; in those instances, Enbridge has only filed a confidential version.
6. Enbridge agrees with the Board that the Ontario Cap and Trade market is still nascent and that the protocols and procedures surrounding strictly confidential information may evolve as the market matures. Enbridge also agrees that it is appropriate to exercise caution at this stage. This is of particular importance in 2018 as the Cap and Trade market expands to include Quebec and California. Enbridge believes it is important to provide a period of time where all parties can become more familiar with the Cap and Trade markets, as well as regulatory and compliance protocols. Once parties have gained experience, compliance protocols and procedures can evolve appropriately.

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7. The Board has also recognized that in addition to Auction Confidential and Market Sensitive information, there may be other information, specifically information that is commercially and strategically sensitive, that may impact Enbridge's competitive position and that should be treated in confidence. In cases where Enbridge wishes to keep commercial and/or strategic information confidential ("Commercially Sensitive information"), a request will be made in accordance with the Board's existing Rules and Practice Direction if and when applicable. Enbridge requests that in these early stages of the Cap and Trade market, the Board should continue to err on the side of caution in making its determination about the appropriateness of treating information strictly confidentially.
8. The Tables below outline the various exhibits within this filing to which Enbridge is requesting strictly confidential treatment. In this Compliance Plan filing, Enbridge has not included any information under the "Commercially Sensitive" category. The Exhibits are divided amongst the other two categories: Auction Confidential and Market Sensitive Confidential information. In respect of each of the Exhibits, Enbridge includes a note as to why such information should be classified as either Auction Confidential or Market Sensitive. It should be noted that several Exhibits contain both Auction Confidential and Market Sensitive Confidential information and thus appear in each of the subject tables below.
9. Given the Company's commitment to operating in full compliance with all legal requirements and the objective of pursuing the most cost effective means of meeting its Cap and Trade Compliance obligations, Enbridge has taken a very cautious approach when it comes to both its internal operations and the sharing of information including the information filed in this proceeding. Such an approach is appropriate given the importance of protecting ratepayers from those looking to undertake competitive market analysis and take advantage of arbitrage

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opportunities at ratepayers' expense and the significant penalty provisions in the Act for breach of those provisions.

10. Consistent with Enbridge's position on confidential information in the 2017 Compliance Plan¹, Enbridge continues to affirm that the confidential information included in Tables 1 to 3 is not appropriate for public disclosure. Among other things, disclosure of these types of information could provide third parties information that could lead to an increase in the cost of Enbridge meeting its compliance obligations, which would lead to rate payers being negatively affected. Enbridge continues to be of the view that the release of such information should be undertaken on a very cautious basis.
11. The Tables below set out the treatment (public or confidential) of each Exhibit in this filing, and then set out the rationale for treating certain Exhibits as confidential.

¹ EB-2016-0300 Exhibit A, Tab 3, Schedule 1

Witnesses: A. Langstaff
S. Mills
J. Murphy
F. Oliver-Glasford

Table 1: Treatment of Exhibits

Exhibit Item	Treatment
A-1-1	Public
A-1-2	Public
A-2-1	Public
A-3-1	Public
A-4-1	Public
A-5-1	Public
B-1-1	Public
B-2-1	Public
B-2-1 Appendix A	Public
B-3-1	Public
B-4-1	Public
C-1-1	Public
C-2-1	Redacted
C-3-1	Redacted
C-3-1 Appendix A	Strictly Confidential
C-4-1	Redacted
C-4-1 Appendix A	Redacted

Exhibit Item	Treatment
C-5-1	Public
C-5-2	Public
C-5-3	Public
C-6-1	Redacted
C-6-1 Appendix A	Redacted
C-7-1	Public
C-7-2	Public
C-7-2 Appendix A	Strictly Confidential
D-1-1	Public
D-1-2	Public
E-1-1	Public
E-1-1 Appendix A	Public
F-1-1	Public
G-1-1	Public
G-1-1 Appendix A, B, C, D	Public

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S. Mills
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Table 2: Auction Confidential

Cap and Trade Framework Page 10:	Information related to emissions allowances that is prohibited from disclosure by s. 32 of the Climate Change Act (except to 'prescribed persons')		
Time period of confidential classification	Information will remain strictly confidential even after the transactions are concluded.		
Exhibit	Reference / Description	Extent of Disclosure	Confidential Determination
C-2-1	Compliance Plan – Strategy Overview	Enbridge Gas Distribution, OEB	Each of these Exhibits respond to the Board's filing requirements which require in respect of allowances the following: i. Number of allowances to be procured ii. Price of allowances iii. Timing of procurement iv. Total forecasted cost v. Forecasted cost per tonne of GHG ² .
C-3-1 & Appendices A	Allowance Procurement Strategy		
C-6-1 & Appendix A	Risk Management – Identification and Mitigation Measures		
C-7-2 & Appendix A	Partial 2017 Monitoring and Reporting Templates		

² EB-2015-0363 Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities Appendix A: Filing Guidelines for Natural Gas Utility Cap and Trade Compliance Plans, page viii

Witnesses: A. Langstaff
S. Mills
J. Murphy
F. Oliver-Glasford

Table 3: Market Sensitive

Cap and Trade Framework Provision	Information relating to transactions of emissions units on secondary or tertiary markets or offset credits. Information relating to compliance instruments used by a Utility to meet its GHG obligations. ³		
Confidential Classification	Market Sensitive		
Time period of confidential classification	Market Sensitive information will remain strictly confidential even after the transactions are concluded.		
Exhibit	Reference / Description	Extent of Disclosure	Confidential Determination
C-2-1	Compliance Plan – Strategy Overview	Enbridge Gas Distribution, OEB	These Exhibits respond to the Board’s filing requirements and contain information which relate to bidding strategies in future market activities, secondary and tertiary markets, offset credits, compliance instruments, forecast costs which are market sensitive and other information which if disclosed could compromise the integrity of the markets contrary to the provisions of the Climate Change Act ⁴
C-3-1	Allowance Procurement Strategy		
C-4-1 & Appendix A	Offset Procurement Strategy		
C-6-1 & Appendix A	Risk Management – Identification and Mitigation Measures		
C-7-2 & Appendix A	2017 Partial Monitoring and Reporting Templates		

³ EB-2015-0363 Report of the Board Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities, page 10

⁴ EB-2015-0363 Report of the Board Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities, Page 13

Witnesses: A. Langstaff
S. Mills
J. Murphy
F. Oliver-Glasford

CURRICULUM VITAE OF
TANYA BRUCKMUELLER

Experience: Enbridge Gas Distribution Inc.

Supervisor, External Communications and PIO
2015

Toronto Hydro

Media and Public Affairs Advisor, PIO
2005

Ministry of Energy

Communications Officer – Conservation Awareness
2004

MDS Inc.

Senior Manager, Global Internal Communications
2004

Environics Communications

Senior Consultant
2002

ETC Communications Inc.

Account Manager
1999

Nissan Canada

Corporate and Product Communications Consultant
1999

Goodman Communications Inc.

Account Coordinator
1997

Education: Incident Management System (IMS) and Emergency Operations Centre
Management Training, City of Toronto, Office of Emergency Management, 2012

International Association of Business Communicators
ABC - Accreditation, 2007

York University - Schulich School of Business
Advanced Executive Management, 2002

Ryerson Polytechnic University
Certificate in Public Relations, 2000

Memberships: International Association of Business Communicators (IABC)
Canadian Public Relations Society (CPRS)

Appearances: N/A

CURRICULUM VITAE OF
ABBAS CHAGANI

Experience: Enbridge Gas Distribution Inc.

Program Manager Business Development
2017

Contract Compliance and Strategic Accounts Manager
2016

Strategic Accounts Manager
2014

Account Executive
2013

Energy Advantage Inc.

Sr. Manager, Energy Commodities
2009

Manager, Demand Response
2008

Manager, Reporting and Analysis
2007

Energy Analyst
2005

Education: Chartered Financial Analyst
CFA Institute, 2012

Bachelor of Electrical Engineering and Management
McMaster University, 2005

Memberships: Toronto CFA Society

Appearances: (Ontario Energy Board)

EB-2017-0086
EB-2016-0215

CURRICULUM VITAE OF
RYAN CHEUNG

Experience: Enbridge Gas Distribution Inc.

Senior Advisor, Economics and Business Performance
2016

Senior Analyst, Gas Accounting and Analytics
2014

Senior Budget Analyst, Budget and Planning
2010

Supervisor, Margin Planning and Analytics
2006

Analyst, Volumetric Analysis and Budgets
2004

TD Canada Trust

Financial Service Advisor
2000

Education: Bachelor of Arts, in Economic and Statistics
University of Toronto

Appearances: (Ontario Energy Board)

EB-2016-0300
EB-2016-0215
EB-2016-0142
EB-2015-0114
EB-2014-0195
EB-2012-0459

CURRICULUM VITAE OF
ROB DiMARIA

Experience: Enbridge Gas Distribution Inc.

Manager, Large Volume Customer Strategy and Direct Purchase
2014

Manager, Key Accounts and Vendor Relationships
2009

Account Executive
2006

Senior Marketing Specialist
2003

Residential Program Manager
2001

Senior Analyst, Planning and Evaluation
2000

Rate Research Analyst
1998

Plant Accounting Chief Clerk
1994

Accounting Trainee
1992

Education: Bachelor of Administration, Business Management, Athabasca University
Diploma in Accounting and Financial Management, Centennial College

Appearances: (Ontario Energy Board)

EB-2017-0086
EB-2016-0300
EB-2014-0323
EB-2001-0032

CURRICULUM VITAE OF
ANTON KACICNIK

Experience: Enbridge Gas Distribution Inc.

Manager Rates
2016

Manager, Rate Research & Design
2007

Manager, Cost Allocation
2003

Program Manager, Opportunity Development
1999

Project Supervisor, Technology & Development
1996

Pipeline Inspector, Construction & Maintenance
1993

Education: Bachelor of Applied Science (Civil Engineering)
University of Waterloo, 1996

Memberships: Professional Engineers of Ontario

Appearances: (Ontario Energy Board)

EB-2017-0086	EB-2016-0300
EB-2016-0142	EB-2015-0114
EB-2015-0122	EB-2014-0276
EB-2013-0046	EB-2012-0055
EB-2011-0354	EB-2011-0277
EB-2011-0008	EB-2010-0146
EB-2010-0042	EB-2009-0172
EB-2009-0055	EB-2008-0106
EB-2008-0219	EB-2007-0615
EB-2007-0724	EB-2006-0034
EB-2005-0551	EB-2005-0001

(RÉGIE DE L'ÉNERGIE)

R-3969-2016	R-3924-2015
R-3884-2014	R-3840-2013
R-3793-2012	R-3758-2011
R-3724-2010	R-3665-2008
R-3637-2007	R-3621-2006
R-3587-2006	R-3537-2004

CURRICULUM VITAE OF
ANDREW LANGSTAFF

Experience: Enbridge Gas Distribution Inc.

Carbon Market Specialist
2017

Carbon Strategy Business Readiness Specialist
2016

Lead, Business Readiness, Carbon Strategy
2016

Assistant Construction Manager, GTA Project
2015

Senior Engineer, GTA Project
2014

Engineering Project Manager
2013

NOVA Chemicals Corporation

Process Engineer, Marcellus Shale Gas Conversion Project
2010

Area Contact Engineer (Process Engineer)
2010

Area Contact Engineering (Process Engineering)
2006

Education: York University – Schulich School of Business
Master of Business Administration, 2014

University of Waterloo
Bachelor of Applied Science, Chemical Engineering – Co-op Program, 2006

Memberships: Professional Engineers of Ontario

Appearances: (Ontario Energy Board)

EB-2016-0300

CURRICULUM VITAE OF
MICHAEL LISTER

Experience: Enbridge Gas Distribution Inc.

Manager, Market Development
2016

Sr. Manager, Market Policy & Research
2016

Sr. Manager, Energy Solutions
2014

Sr. Manager, Regulatory Policy & Strategy
2010

Manager, Investment Planning
2006

Manager, Volumetric & Market Analysis
2004

Supervisor, Volumetric & Market Analysis
2003

Sr. Market Analyst, Volumetric & Market Analysis
2002 - 2003

NRI Industries Inc.

Production Scheduler, Logistics
1999-2000

Fairlee Fruit Juices Ltd.

Raw Materials Coordinator
1998

Coats Canada Inc.

Production Planner, Materials & Logistics
1996-1997

Education: Chartered Financial Analyst
CFA Institute, 2005

Master of Business Administration
York University, 2002

Bachelor of Commerce
St. Mary's University, 1996

Memberships: CFA Institute
Toronto CFA Society

Appearances: (Ontario Energy Board)

EB-2016-0300	EB-2015-0049
EB-2015-0245	EB-2014-0134
EB-2013-0301	EB-2012-0459
EB-2011-0354	EB-2010-0060
EB-2009-0172	EB-2009-0084
EB-2007-0615	EB-2005-0001
RP-2003-0203	

(New York Public Service Commission)
05-G-1635

(New York Public Service Commission)
08-G-1392

CURRICULUM VITAE OF
STEVE MCGILL

Experience: Enbridge Gas Distribution Inc.

Business Development, Senior Technical Manager
2016

Business Development, Senior Strategist
2016

Sr. Manager Business Development System Expansion
2015

Sr. Manager, Sustainable Growth & Market Development Strategy
2015

Sr. Manager, Customer Care Finance & Contracts
2014

Manager, Billing & Customer Systems
2005

Manager, Strategic Projects & Market Analysis
2003

Manager, Customer Support & Advocacy
2000

Manager, Customer Accounting Projects
1995

Manager, Large Volume Billing
1992

Manager, Industrial Sales, Metropolitan Toronto
1990

Manager, Rate & Contract Administration
1987

Rate Research Analyst
1985

Market Analyst
1981

Distribution Planner
1979

TransCanada Pipelines Limited

Junior Statistician

Junior Draftsman

Education: Bachelor of Arts (Honours Geography), University of Toronto, 1978

Miscellaneous short courses in Public Utility Management,
General Management and Accounting

Other: Member of the Board of Directors and Treasurer of the Oshawa Ski Club o/a
Brimacombe

Appearances: (Ontario Energy Board)

EB-2016-0300	EB-2016-0004
EB-2015-0029	EB-2015-0049
EB-2012-0459	EB-2012-0055
EB-2011-0354	EB-2011-0277
EB-2011-0226	EB-2006-0034
EB-2005-0001	RP-2003-0203
RP-2002-0133	RP-2001-0032
RP-2000-0040	RP-1999-0058
RP-1999-0001	EBRO 497-01
EBRO 497	EBRO 495
EBRO 492	EBRO 490
EBRO 487	EBO 179-14/15

CURRICULUM VITAE OF
DARREN MCILWRAITH

Experience: Enbridge Gas Distribution Inc.

Manager, Customer Care
2016

Senior Manager, Customer Care, Finance and Contract Management
2014

Senior Manager, Business Development and DSM Technology
2009

Enbridge Solutions Inc.

Manager, Product Development
2006

Direct Energy Marketing Limited

Director, Customer Analytics
2004

Director, Financial Services
2002

Enbridge Commercial Services Inc.

Director, Financial Services
2001

Enbridge Gas Distribution Inc.

Manager, Budgets
2000

Supervisor, Budgets & Forecasts
1998

Economic Analyst
1996

Education: Master of Arts: Business Economics, Wilfrid Laurier University – 1996
Bachelor of Commerce, University of Guelph - 1994

Appearances: (Ontario Energy Board)

EB-2017-0086
EB-2016-0215
EB-2014-0276

EB-2016-0300
EB-2015-0114
EB-2012-0459

CURRICULUM VITAE OF
SUZETTE MILLS

Experience: Enbridge Gas Distribution Inc.

Integrated Resource Planning Lead, Carbon Strategy & IRP
2016

Senior Market Policy Advisor, DSM EM&V
2012

Senior Analyst, DSM Research & Evaluation
2012

Analyst – Intermediate Analyst, DSM Research & Evaluation
2001

Customer Attachment / Sales Coordinator
1997

Active / Final Collections Representative, Customer Service Representative,
Small Claims litigation representative
1990

Education: BA – York University
Certificate – Université Canadienne en France

Appearances: (Ontario Energy Board)

EB-2016-0300
EB-2015-0049

CURRICULUM VITAE OF
JENNIFER MURPHY

Experience: Enbridge Gas Distribution Inc.

Climate Policy/Cap and Trade Compliance Sr. Advisor
2017

Environmental Senior Advisor, Carbon Strategy
2016

Environmental Advisor
2015

Environmental Specialist
2007

SKD Automotive Group

Environmental Management System Coordinator
2002

Education: Bachelor of Science in Environmental Engineering
University of Guelph, 2003

Environmental Science Technician
Sheridan College, 1997

Appearances: (Ontario Energy Board)

EB-2016-0300

CURRICULUM VITAE OF
ERIK NACZYNSKI, P.Eng

Experience: Enbridge Gas Distribution Inc.

Manager, Asset Management and Optimization
2014

Manager, System Analysis and Design
2010

Manager, Records and GIS
2009

Project Manager, Major Projects
2006

Engineering Project Leader
2005

Union Gas

Distribution Planning EIT
2003

Education: Bachelor of Engineering and Management
McMaster University, 2003

Memberships: Professional Engineers Ontario

Appearances: (Ontario Energy Board)

EB-2016-0300
EB-2012-0459
EB-2012-0451
EB-2007-0692
EB-2006-0305

CURRICULUM VITAE OF
FIONA OLIVER-GLASFORD

Experience: Enbridge Gas Distribution Inc.

Manager, Carbon Strategy
2016

Senior Manager, Carbon Strategy and IRP
2016

Senior Manager, Market Policy and DSM
2013

Union Gas Distribution

Manager, CDM Business Development and Policy
2010

Manager, DSM Strategy
2008

Manager, DSM EM&V
2007

Manager, DSM Programs/Marketing
2006

Manager, Market Research & Analysis
2005

Canadian Energy Efficiency Alliance

Director, Operations

Summerhill Group

Marketing Manager

Corus Entertainment

Marketing Manager, YTV, Documentary Channel and
Scream TV

Towers Watson

Associate/Analyst

Education: York University – Schulich School of Business
Master of Business Administration
With an International Exchange at Copenhagen School of Business

Western University – Huron College
Bachelor of Arts

Appearances: (Ontario Energy Board)

EB-2016-0300	EB-2015-0049
EB-2014-0277	EB-2014-0276
EB-2013-0352	EB-2013-0075
EB-2013-0430	EB-2012-0451
EB-2012-0459	EB-2012-0441
EB-2008-0346	

CURRICULUM VITAE OF
RAVI SIGURDSON

Experience: Enbridge Gas Distribution Inc.

Manager, Technology Development
2016

Manager, DSM Program Design, Evaluation & Audit
2015

Manager, DSM Evaluation, Monitoring, Verification & Policy
2013

Manager, DSM Evaluation, Monitoring & Verification
2012

Union Gas Ltd.

Manager, DSM Research & Evaluation
2008

Manager, Market Research & Analysis
2007

Senior Program Manager, Residential Marketing
2006

Commercial/Industrial Category Marketing Specialist
2003

Imperial Oil Ltd.

Project Manager & Communications Specialist
2002

Business Analyst
2000

Information Systems Analyst/Database Developer
1999

Education: Master of Business Administration,
Major in Information Technology & Systems; Minor in Operations Management
McMaster University, 1999

B.A. – Economics
York University, 1995

Appearances: (Ontario Energy Board)

EB-2015-0344
EB-2015-0049
EB-2012-0394
EB-2013-0352
EB-2013-0430
EB-2014-0277
EB-2014-0354

CURRICULUM VITAE OF
RYAN SMALL

Experience: Enbridge Gas Distribution Inc.

Manager, Revenue and Regulatory Accounting
2016

Manager, Regulatory Accounting
2014

Senior Analyst, Regulatory Accounting
2006

Analyst, Regulatory Accounting
2004

Supervisor, Gas Cost Reporting
2001

Senior O&M Clerk
2000

Bank Reconciliation Clerk
1999

Accounting Trainee
1998

Education: Chartered Professional Accountant, Certified Management Accountant
Chartered Professional Accountants of Ontario, 2014
The Society of Management Accountants of Ontario, 2003

Diploma in Accounting,
Wilfrid Laurier University, 1997

Bachelor of Arts in Economics
The University of Western Ontario, 1996

Appearances: (Ontario Energy Board)

EB-2017-0086
EB-2016-0300
EB-2016-0142
EB-2015-0049
EB-2014-0276
EB-2012-0459
EB-2011-0354

EB-2017-0102
EB-2016-0215
EB-2015-0114
EB-2015-0122
EB-2014-0195
EB-2012-0055
EB-2011-0008

CURRICULUM VITAE OF
MARGARITA SUAREZ-SHARMA

Experience: Enbridge Gas Distribution Inc.

Manager, Economics & Business Performance
2014

Manager, Economic & Market Analysis
2012

Manager, Cost Allocation
2008

Manager, DSM Reporting & Analysis
2005

Analyst, Rate Design
2004

Senior Analyst, DSM Planning and Evaluation
2002

Senior Economic Analyst, Economic & Financial Studies
1998

Margaret Chase Smith Center for Public Policy

Research Assistant
1995

Education: Master of Arts in Economics
University of Maine, 1995

Bachelor of Arts in Economics
University of Maine, 1993

Appearances: (Ontario Energy Board)

EB-2017-0086	EB-2016-0300
EB-2016-0215	EB-2015-0114
EB-2015-0122	EB-2014-0276
EB-2012-0459	EB-2011-0354
EB-2011-0277	EB-2010-0146
EB-2009-0172	EB-2008-0219
EB-2008-0106	

(RÉGIE DE L'ÉNERGIE)

R-3758-2011	R-3724-2010
R-3692-2009	R-3665-2008

GLOSSARY OF TERMS

ALLOWANCE – A financial instrument that can be used for compliance in a Cap and Trade system. Each allowance is equal to one tonne of carbon dioxide equivalent (“t CO₂e”).

AUCTION CONFIDENTIAL – As stipulated in the Climate Change Act.

AUCTION RESERVE PRICE – The minimum price that may be paid for an allowance at auction. In this document also referred to as “floor price”.

CAPPED PARTICIPANT – As defined under the Cap and Trade regulation “means a mandatory participant or a voluntary participant”.

CLASS 1 EMISSION ALLOWANCE – As defined under the Cap and Trade regulation “means an Ontario emission allowance that has been classified as having a vintage year that is equal to either the auction year or an earlier year”.

CLASS 2 EMISSION ALLOWANCE – As defined under the Cap and Trade regulation “means an Ontario emission allowance that has been classified as having a vintage year that is later than the auction year”.

CLIMATE CHANGE MITIGATION AND LOW-CARBON ECONOMY ACT, 2016 (“CLIMATE CHANGE ACT”) –The Ontario government legislation related to climate change, which enables the Cap and Trade regulation.

COMMERCIALLY SENSITIVE – Confidential information of a commercially sensitive nature about Enbridge or a customer.

COMPLIANCE PERIOD – The first compliance period for Ontario’s Cap and Trade program is from January 1, 2017 to December 31, 2020.

CUSTOMER-RELATED ABATEMENT – Projects or initiatives that will reduce the natural gas used by customers, therefore reducing Customer-related obligations under Cap and Trade.

CUSTOMER-RELATED OBLIGATIONS – The Cap and Trade obligation related to GHG emissions associated with the natural gas delivered by Enbridge and used by customers.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

FACILITY-RELATED ABATEMENT – Projects or initiatives that will reduce the natural gas used or released by Enbridge’s own facilities, therefore reducing Facility-related obligations under Cap and Trade.

FACILITY-RELATED OBLIGATIONS – The Cap and Trade obligation associated with the GHG emissions associated with the natural gas used by Enbridge to operate its facilities and deliver natural gas to customers.

FRAMEWORK – The Ontario Energy Board’s Cap and Trade Framework document titled, “Report of the Board, Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities”, September 26, 2016.

GOLDEN OFFSETS – Offset credits – specific to California issued offsets - where the seller will replace an invalidated offset with either an offset or an allowance, depending on the contract specifics.

GREENHOUSE GAS (“GHG”) – As set out in Ontario Regulation 143/16 “Quantification, Reporting and Verification of Greenhouse Gas Emissions”.

GUIDELINES FOR QUANTIFICATION, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS (“GUIDELINES”) – The Ontario government guidelines related to the Ontario Regulation 143/16 “Quantification, Reporting and Verification of Greenhouse Gas Emissions” (“O. Reg. 143/16”).

LARGE FINAL EMITTER (“LFE”) – Large Final Emitter refers to a customer who is a mandatory participant in Ontario’s Cap and Trade program as per Ontario Regulation 144/16, The Cap and Trade Program.

MANDATORY PARTICIPANT – Mandatory participant in Ontario’s Cap and Trade program as per the Cap and Trade regulation.

MARKET PARTICIPANT – As defined under the Cap and Trade regulation means a Cap and Trade participant who is not an owner, operator or employee of a mandatory or voluntary participant.

MARKET SENSITIVE CONFIDENTIAL – As stipulated in the Board’s Framework.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

OFFSET CREDIT – A financial instrument generated from an offset initiative, that after all the relevant verification and approvals, can be used for compliance within a Cap and Trade system. Each offset credit is equal to one tonne of carbon dioxide equivalent (t CO₂e).

OFFSET INITIATIVE – A project that reduces or removes greenhouse gases from the environment.¹ The reduction in emissions or sequestration of carbon dioxide (“CO₂”) or other greenhouse gases is only applicable as an offset initiative if it occurs outside the scope of the Cap and Trade system.

OFFSET PROTOCOLS – Offset protocols are a set of rules that must be followed by an offset initiative to be eligible to apply for an offset credit. The protocols outline the processes that project developers must follow to create offsets credits for particular initiative types.²

ONTARIO ENERGY BOARD’S PRACTICE DIRECTION ON CONFIDENTIAL FILINGS – Outlines existing Board Guidelines for the filing of confidential information as part of the regulatory process.

ONTARIO REGULATION 143/16 “QUANTIFICATION, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS (“O.REG 143/16”) – The Ontario government regulation governing Greenhouse Gas (“GHG”) emissions in the province.

ONTARIO REGULATION 144/16, THE CAP AND TRADE PROGRAM (“Cap and Trade”) – The Ontario government regulation establishing Ontario’s Cap and Trade program. Referred to in this Glossary and in the evidence as the “Cap and Trade regulation”.

PRIMARY OFFSETS – Offset credits purchased directly from the project owners or developers at various stages of project development with applicable risks.

SEASONED OFFSETS – A type of offset credits – specific to California issued offsets – that have gone through either the 8-year or 3-year invalidation period and no longer have an invalidation risk.

¹ <https://www.ontario.ca/page/cap-and-trade-offset-credits-and-protocols>

² Ibid

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

SECONDARY OFFSETS – Offset credits purchased via the secondary or over-the-counter market.

TONNES OF CARBON DIOXIDE EQUIVALENT (“tCO₂e”) – The unit of measure of greenhouse gas emissions as per Ontario Regulation 143/16 “Quantification, Reporting and Verification of Greenhouse Gas Emissions”.

VOLUNTARY PARTICIPANT – Voluntary, or opt-in, participant in Ontario’s Cap and Trade program as per Ontario Regulation 144/16, The Cap and Trade Program.

WESTERN CLIMATE INITIATIVE (“WCI”) – In this document, WCI generally refers to the linked Cap and Trade markets of California and Québec.

WESTERN CLIMATE INITIATIVE INC. (“WCI, INC.”) – is a non-profit corporation formed to provide administrative and technical services to support the implementation of state and provincial greenhouse gas emissions trading programs.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

FORECASTING PERIOD

1. Enbridge elects, as contemplated by the Framework¹, to file a one-year Compliance Plan for 2018. The Company believes that this is the most reasonable forecasting period given recent market changes and ongoing developments.
2. On September 22, 2017 the Government of Ontario announced² that an agreement has formally been signed, linking Ontario's Cap and Trade market with the California and Québec markets effective January 1, 2018 provided that all legal measures are completed by this date. Enbridge submits that a one-year Compliance Plan is appropriate as linkage becomes finalized and Enbridge develops an understanding of the dynamics associated with this larger multi-jurisdictional market.
3. The Cap and Trade program is new in Ontario and still relatively new in California and Québec. A one-year Compliance Plan will allow Enbridge the required flexibility to adjust for any change in regulations.
4. Although the Company is submitting a one-year Compliance Plan, it should be noted that the Company uses a longer planning horizon when considering financial instrument planning and investments that involve customer and facility abatement.
5. Enbridge's next Compliance Plan, for the remaining years in Ontario's first compliance period, 2019 and 2020, will be submitted on August 1, 2018.

¹ Report of the Board, Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap & Trade Activities, EB-2015-0363, September 26, 2016, p. 16

² <https://news.ontario.ca/opo/en/2017/09/quebec-ontario-and-california-join-forces-to-fight-climate-change.html>

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

VOLUME FORECASTS

1. This evidence sets out Enbridge's 2018 forecast of natural gas volumes to ascertain the forecast of Greenhouse Gas ("GHG") obligation costs. Enbridge is required to prepare forecasts of the customer-related volumes and the Company facility-related volumes as part of its Cap and Trade compliance obligations. These forecasts are key inputs in the development of the Compliance Plan, and are necessary for the purposes of cost allocation and rate-setting.
2. Customer-related and facility-related volumetric forecasts were derived as consistent with Board-approved methodologies currently in effect under the Custom Incentive Regulation ("CIR") mechanism which was filed by Enbridge in the 2018 Rate Adjustment Application (EB-2017-0086).

Customer-related Volume Forecast

3. The total customer-related obligation was determined by using the 2018 volumetric natural gas forecast for all customers, adjusted for gas-fired generation, Demand Side Management ("DSM"), incremental customer-related abatement, mandatory and voluntary participants, as well as volumes derived from biomass, or consumed outside of Ontario. The derivation of the final customer-related obligation can be found in Table 1 of this exhibit.
4. The Company estimated the impact on volumetric consumption of the additional cost to Rate 1 and Rate 6 customers of Cap and Trade using its regression models as part of the Board-approved average use forecasting methodology. The

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

volumetric impact from incremental Cap and Trade obligation costs is explained in the Company's Gas Volumes Forecast in the 2018 Rate Adjustment Application.¹

5. The forecast of natural gas sales and transportation volumes in Enbridge's 2018 Rate Application is 11,497,761 10^3m^3 , which excludes unbundled Rate 125 and Rate 300 customers. Evidence on Enbridge's 2018 customer gas volume forecast is set out in Exhibit C1, Tab 2, Schedule 1 in the 2018 Rate Application.
6. Under Ontario Regulation 144/16, The Cap and Trade Program (the "Regulation"), natural gas utilities are the point of regulation for natural gas fired power generators. This means that Enbridge is required to procure allowances to cover the volume of natural gas used by the natural gas fired power generators on its distribution system. Enbridge has a forecast for the unbundled Rate 125 and Rate 300 customers of 444,978 10^3m^3 , which is included in the volumes shown on Table 1 of this Exhibit. All of the 2018 forecast volumes for the unbundled power generator customers are provided by the customers during the budgeting process.
7. The volume in the 2018 Rate Application is after DSM volume reductions are applied. The total customer-related volume, including the forecast for unbundled customers and before DSM volumes are removed is 11,973,877 10^3m^3 , as shown on Table 1 of this exhibit. To provide transparency, DSM volumes have been shown separately in this application and constitute a partially effective volumetric reduction of 31,139 10^3m^3 .
8. In addition to the DSM volumes, the Framework also prescribes that customer-related abatement, which is incremental to the existing DSM plan, be shown

¹ EB-2017-0086, Exhibit C1, Tab 2, Schedule 1, Appendix C

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

separately. Enbridge has received proceeds from the government of Ontario's Green Investment Fund ("GIF") to conduct customer-related abatement activity (outlined in more detail in Exhibit C, Tab 5, Schedule 1). The GIF-funded customer-related abatement is incremental to Enbridge's approved DSM plan. The volume reductions associated with this program are anticipated to be $5,558.5 \times 10^3 \text{m}^3$ in 2018.

9. As per the Regulation, mandatory participants, otherwise known as Large Final Emitters ("LFEs"), are customers with facilities that emit more than 25,000 tonnes of carbon dioxide equivalent ("tCO₂e") per year. Voluntary participants are customers with facilities that emit above 10,000 tCO₂e, but less than the mandatory participant level of 25,000 tCO₂e per year, and who voluntarily "opt-in" to the government's Cap and Trade program. Mandatory and voluntary participants are collectively referred to as "capped" participants who are responsible for their own customer-related Cap and Trade compliance obligations. Capped participants will be required to obtain allowances, either through free allocation from the Government or by purchasing allowances or offset credits to match their annual GHG emissions. These customers will not be billed for customer-related obligations by Enbridge.
10. Volumetric forecasts were provided for those facilities that are on a list of capped participants in 2017, posted by the Ministry of the Environment and Climate Change ("MOECC") on its website on September 8, 2017. This list includes mandatory and voluntary participants who are registered capped participants for 2017 as well as any new voluntary participants who have registered to opt-in starting in 2018.
11. In June of 2017, Enbridge reached out to customers not classified as capped participants for 2017, which based on natural gas volumes, may be eligible to opt-in

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

to Cap and Trade in 2018. The current customer Declaration Form is attached as Appendix A to this Exhibit.

12. The total amount forecasted for all capped participants known to Enbridge as of October 5, 2017, is 1,175,801 10^3m^3 . This amount was subtracted from the 2018 total forecast gas volume.
13. As per the Regulation, Enbridge is not required to acquire GHG allowances associated with the use of natural gas derived from biomass, such as landfill gas. The Company is not forecasting any landfill gas billed on Rate 300 in 2018.
14. Enbridge is not required to acquire GHG allowances for natural gas distributed to downstream natural gas distribution companies, including those that are out of province like Gazifère which is an Enbridge subsidiary in Québec. The total amount forecast for Gazifère in 2018 is 169,764 10^3m^3 , billed on Rate 200. This amount was subtracted from the 2018 total forecast gas volume.
15. With the exclusions of total volumes of 1,345,565 10^3m^3 as noted in the preceding paragraphs, the total customer-related volume is 10,591,615 10^3m^3 .

Facility-Related Volume Forecast

16. The forecast of gas volumes for Enbridge's facility-related obligations is based on forecast requirements of the amount of natural gas required for Enbridge to operate its facilities as well as the emissions from the distribution of natural gas. This represents Company use volumes (natural gas used for boilers at distribution gate stations, building heating, natural gas fleet vehicles, etc.) as well as compressor fuel related to natural gas storage and unaccounted for gas ("UFG" or "UAF") as

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

reflected in part in the Company's Gas Cost to Operations and System Requirements in the 2018 Rate Adjustment Application.

17. In total, Enbridge forecasts its facility-related gas volumes for 2018 to be 128,649 10^3m^3 . A detailed breakdown of forecast facility-related gas volumes is provided in Table 2 of this evidence.

Total 2018 Volume Forecast

18. The total volume forecast, inclusive of both the customer-related and Company facility-related volumes, is 10,720,264 10^3m^3 . A summary of all of the volumes included in this calculation is included in Table 3 of this evidence.

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

TABLE 1: 2018 CUSTOMER-RELATED VOLUMES BY RATE CLASS
(10³m³)

Line	Rate	Col. 1	Col. 2	Col. 3	Col. 4 (Col. 1 - Col. 2 - Col. 3)	Col. 5	Col. 6	Col. 7 (Col. 4 - Col. 5 - Col. 6)
		Forecast Volumes Before DSM & Abatement	DSM Volume	Customer Abatement Volume ¹	Forecast Volumes After DSM & Abatement ²	Capped Participant Volumes	Other Exempt Gas Volume ⁴	Net Volumes
1.1	1	4,767,354.0	6,807.5	5,558.5	4,754,988.0	364.1	0.0	4,754,623.9
1.2	6	4,847,873.1	18,080.4	0.0	4,829,792.7	156,649.9	0.0	4,673,142.8
1.3	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.4	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.5	110	791,896.2	2,860.4	0.0	789,035.8	367,138.0	0.0	421,897.8
1.6	115	545,114.9	2,283.5	0.0	542,831.4	410,350.3	0.0	132,481.1
1.7a	125	319,562.5	0.0	0.0	319,562.5	0.0	0.0	319,562.5
1.7b	125D ³	124,896.5	0.0	0.0	124,896.5	0.0	0.0	124,896.5
1.8	135	64,592.0	90.7	0.0	64,501.3	0.0	0.0	64,501.3
1.9	145	50,543.0	406.8	0.0	50,136.2	3,670.7	0.0	46,465.5
1.10	170	291,761.7	609.4	0.0	291,152.3	237,627.7	0.0	53,524.6
1.11	200	169,764.4	0.0	0.0	169,764.4	0.0	169,764.4	0.0
1.12	300	518.6	0.0	0.0	518.6	0.0	0.0	518.6
Total								
1	Customer-Related	11,973,876.9	31,138.7	5,558.5	11,937,179.7	1,175,800.7	169,764.4	10,591,614.6

Notes:

(1) Incremental customer abatement included in Compliance Plan.

(2) Forecast Volumes After DSM and Abatement are higher than volumes filed in 2018 Rates Application (EB-2017-0086, Exhibit C3, Tab 2, Schedule 1) due to inclusion of unbundled volumes for Rate 125 and Rate 300 (Lines 1.7 a & b, and 1.12) for compliance. Volumes forecast filed in 2018 Rates Application will be updated to reflect forecast of customer abatement volume in Col. 3 above.

(3) Dedicated unbundled customers

(4) Includes volumes delivered to downstream distributor and landfill gas.

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

TABLE 2: 2018 FACILITY-RELATED VOLUMES
(10³m³)

Line		<u>Volumes</u>
1.	Company Use - Buildings	1,388.8
2.	Company Use - Boilers	4,078.8
3.		5,467.6
4.	Company Use - Fleet	1,147.2
5.	Total Company Use	6,614.8
6.	Unaccounted For Gas (UAF)	106,077.0
7.	Compressor Fuel	15,957.3
8.	<u>Total Facility-Related</u>	<u>128,649.1</u>

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez

TABLE 3: 2018 SUMMARY OF CUSTOMER-RELATED AND FACILITY-RELATED FORECAST VOLUMES

<u>Line</u>	<u>Description</u>	<u>2018 Forecast</u>
<u>Customer-Related Volume Forecast</u>		
1	Gross Volumes before DSM and Customer Abatement (10^3m^3)	11,973,877
2	Less: Demand Side Management (DSM) (10^3m^3)	(31,139)
3	Less: Customer Abatement (10^3m^3)	(5,559)
4	Subtotal: Net Volumes (10^3m^3)	11,937,180
5	Less: Throughput to Capped Participants (10^3m^3)	(1,175,801)
6	Less: Gas to Other Exempt Customers (10^3m^3)	(169,764)
7	Net Customer Related Volumes to end users (10^3m^3)	10,591,615
<u>Facility-Related Volume Forecast</u>		
8.a.	Company Use Gas - Building (10^3m^3)	1,389
8.b.	Company Use Gas - Boiler (10^3m^3)	4,079
8.c.	Company Use Gas - Fleet (10^3m^3)	1,147
8	Total Company Use Gas (10^3m^3)	6,615
9	Unaccounted for Gas (10^3m^3)	106,077
10	Compressor Fuel (10^3m^3)	15,957
11	Net Facility-Related Volumes (10^3m^3)	128,649
12	Total Customer-Related and Facility-Related Volumes (Line 7 + Line 11) (10^3m^3)	10,720,264

Witnesses: R. Cheung
R. DiMaria
J. Murphy
M. Suarez



Enbridge Gas Distribution
500 Consumers Road
North York, Ontario M2J 1P8
Canada

Overview

It is important that you, the Customer, review and complete the information below to advise Enbridge Gas Distribution Inc. ("Enbridge") if the Customer will be participating in Ontario's Cap and Trade Program, as governed by *Ontario Regulation 144/16, The Cap and Trade Program* and by the *Climate Change Mitigation and Low-carbon Economy Act, 2016*.

Enbridge requests that this declaration form be returned to Enbridge by July 13, 2017, advising of the Customer's participation in Ontario's Cap and Trade Program. If this form is not returned, Enbridge will obtain and surrender emission allowances related to the Customer's emissions from natural gas delivered by Enbridge for the period of January 1, 2018 through December 31, 2020.

Cap and Trade Declaration Form:

The purpose of this form is for the Customer to provide direction to Enbridge regarding its participation in Ontario's Cap and Trade program. This form will be used to identify whether the Customer's facility or facilities will participate directly in Ontario's Cap and Trade program as per *Ontario Regulation 144/16, The Cap and Trade Program*.

Cap and Trade Charges:

Enbridge has divided the Cap and Trade charges into two main components: customer-related obligations and facility-related obligations. These charges will be included in the "Delivery to You" line on your Enbridge bill.

All customers, regardless of program participation, will be charged all or a portion of Enbridge's facility-related obligations according to the services provided by Enbridge. For more information, please refer to Enbridge's Rate Handbook, which will contain all Cap and Trade unit rates.

Once completed, this form will be used to update Enbridge's billing systems to ensure Customers are accurately billed Cap and Trade charges. Those Customers that participate directly in Ontario's Cap and Trade program (either as mandatory participants or as voluntary participants) as per *Ontario Regulation 144/16, The Cap and Trade Program*, will be excluded from the customer-related obligations component of the Cap and Trade charges on their natural gas bill.

Further information regarding Ontario's Cap and Trade program is available at: www.ontario.ca/capandtrade. Enbridge's Cap and Trade rates can be found at www.enbridgegas.com.

Definitions:

CUSTOMER-RELATED OBLIGATIONS – Emissions generated through the use of natural gas delivered by Enbridge only.

COMPLIANCE PERIOD – The first compliance period for Ontario's Cap and Trade program is from January 1, 2017 to December 31, 2020.

FACILITY-RELATED OBLIGATIONS – Emissions generated through the use of natural gas in order for Enbridge to operate its facilities and deliver natural gas. All customers will bear all or some of Enbridge's facility-related obligation costs.

MANDATORY PARTICIPANT – Mandatory participant in Ontario's Cap and Trade program as per *Ontario Regulation 144/16, The Cap and Trade Program*.

VOLUNTARY PARTICIPANT – Voluntary participant in Ontario's Cap and Trade program as per *Ontario Regulation 144/16, The Cap and Trade Program*.



Enbridge Gas Distribution
500 Consumers Road
North York, Ontario M2J 1P8
Canada

Cap and Trade Declaration Form

Please complete, sign and return to Enbridge at contractsupportandcompliance@enbridge.com by July 13, 2017.

One form must be completed for each of the capped participant's facility that reports emissions as per *Ontario Regulation 143/16, Quantification, Reporting and Verification of Greenhouse Gas Emissions*.

"Facility" (as per O. Reg. 143/16) includes all buildings, structures and stationary items, such as surfaces and storage piles that, (a) are owned or operated by the same person, and (b) are located on a single site, or on two or more adjacent sites that function as a single integrated site.

Legal Company Name :		
Mailing Address (main office):		
Facility Name or Identifier ("Facility"), if applicable:		
Facility Address:		
Contact Name:	Email Address:	Phone Number:
Account Number	Account Name (if different from Customer name)	MOECC GHG ID

Please select type of program participant below (MANDATORY or VOLUNTARY):

☐ Under *Ontario Regulation 144/16, The Cap and Trade Program*, the facility identified above is a **MANDATORY PARTICIPANT** for the compliance period as of January 1, 2018.

☐ Under *Ontario Regulation 144/16, The Cap and Trade Program*, the facility identified above is a **VOLUNTARY PARTICIPANT** and will **opt-in** to the Government's Cap and Trade program for the compliance period as of January 1, 2018.

I hereby agree and acknowledge that the Customer will be responsible for acquiring and surrendering emission allowances as per *Ontario Regulation 144/16, The Cap and Trade Program*, associated with the natural gas delivered by Enbridge for the compliance period as of January 1, 2018. I recognize that Enbridge will charge Enbridge's facility-related obligations cost associated with the emissions generated to deliver natural gas on the accounts included in this form.

I, as a voluntary participant, in the Cap and Trade Program agree to notify my Enbridge Account Executive in writing if during the compliance period, I decided to no longer participate as a voluntary participant and instead elect Enbridge to purchase and surrender my emissions allowances on my behalf. Additionally, I also agree to notify my Enbridge Account Executive of any new natural gas accounts that service the above mentioned facility.

By: _____

Name:

Title:

GHG EMISSIONS FORECASTS

1. This evidence sets out an overview of Enbridge's 2018 forecast of Greenhouse Gas ("GHG") emissions.
2. Under *Ontario Regulation 143/16* "Quantification, Reporting and Verification of Greenhouse Gas Emissions" ("O.Reg 143/16") and the associated "Guidelines for Quantification, Reporting and Verification of Greenhouse Gas Emissions" ("Guidelines"), as a natural gas distributor Enbridge is required to report emissions from the distribution of natural gas (ON.400). Enbridge is also required to report emissions from stationary combustion (ON.20) and from the operation of equipment related to natural gas (ON.350).
3. Enbridge has prepared 2018 forecasts of GHG emissions related to customers' use of natural gas. These are referred to as "customer-related obligations". It has also prepared forecasts of emissions related to the operation of its distribution, transmission and storage systems. These are referred to as "facility-related obligations."
4. In order to estimate GHG emissions, forecasted natural gas volumes were converted to GHG emissions in tonnes of carbon dioxide equivalent ("tCO₂e"), using the methodology, emission factors and global warming potentials provided in O.Reg 143/16 and the Guidelines.

Customer-Related Emissions Forecast

5. The total customer-related emissions for 2018 based on the customer-related volume forecast is 19,855,327 tCO₂e, representing approximately 99% of the total forecasted carbon compliance obligation. The methodology, source and

assumptions for the volume forecast can be found in Exhibit B, Tab 2, Schedule 1 and the assumptions and the derivation of the customer-related GHG emissions forecast is set out in Tables 1 and 2 of this exhibit.

Facility-Related Emissions Forecast

6. The total facility-related emissions for 2018 based on the facility-related volume forecast is 242,464 tCO₂e, representing approximately 1% of the total forecasted carbon compliance obligation. The methodology, source and assumptions for the volume forecast can be found in Exhibit B, Tab 2, Schedule 1 and the assumptions and derivation of the facility-related GHG emissions forecast is set out in Tables 3 and 4 of this exhibit.

Total 2018 GHG Emissions Forecast

7. The total GHG emissions forecast, inclusive of both the customer-related and facility-related volumes is 20,097,791 tCO₂e. A summary of the GHG emissions is included in Table 5 of this exhibit.
8. Enbridge notes that the GHG forecast is calculated with “net volumes,” which is after the volumes applicable to the Green Investment Fund (“GIF”) incremental customer abatement program were removed from the forecasted customer-related volume. The total GHG emissions forecast before this adjustment is 20,108,211 tCO₂e.

TABLE 1: 2018 CUSTOMER-RELATED EMISSIONS BY RATE CLASS

		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
Line	Rate	Net Volumes ¹ (10 ³ m ³)	CO ₂ Emissions ² (Tonnes CO ₂)	CH ₄ Emissions ³ (Tonnes CH ₄)	N ₂ O Emissions ⁴ (Tonnes N ₂ O)	Net CO ₂ e Emissions ⁵ (Tonnes CO ₂ e)
1.1	1	4,754,623.9	8,857,864.3	175.9	166.4	8,913,146.3
1.2	6	4,673,142.8	8,706,065.0	172.9	163.6	8,760,399.7
1.3	9	0.0	0.0	0.0	0.0	0.0
1.4	100	0.0	0.0	0.0	0.0	0.0
1.5	110	421,897.8	785,995.6	15.6	14.8	790,901.0
1.6	115	132,481.1	246,812.3	4.9	4.6	248,352.6
1.7a	125	319,562.5	595,344.9	11.8	11.2	599,060.5
1.7b	125D	124,896.5	232,682.2	4.6	4.4	234,134.4
1.8	135	64,501.3	120,165.9	2.4	2.3	120,915.9
1.9	145	46,465.5	86,565.2	1.7	1.6	87,105.5
1.10	170	53,524.6	99,716.3	2.0	1.9	100,338.7
1.11	200	0.0	0.0	0.0	0.0	0.0
1.12	300	518.6	966.15	0.02	0.02	972.2
1	Total Customer-Related	10,591,614.6	19,732,178.0	391.9	370.7	19,855,326.7

Notes:

(1) Exhibit B, Tab 2, Schedule 1, Table 1, Col. 6

(2) Col. 1 x Table 2, Line 2, Col. 1 x 1000

(3) Col. 1 x Table 2, Line 2, Col. 2 x 1000

(4) Col. 1 x Table 2, Line 2, Col. 3 x 1000

(5) Col. 2 + (Col. 3 x Table 2, Line 3, Col. 2) + (Col. 4 x Table 2, Line 3, Col. 3)

TABLE 2: CONVERSION FACTORS

		Col. 1	Col. 2	Col. 3
Line		CO ₂ Emission Factor ⁶	CH ₄ Emission Factor ⁷	N ₂ O Emission Factor ⁷
2	Tonne/m ³	0.001863	0.000000037	0.000000035
Line			Methane ⁸	Nitrous Oxide ⁸
3	Global Warming Potential for Carbon Dioxide Equivalent		21	310

Notes:

(6) Ontario Ministry of Environment and Climate Change's "Guideline for Quantification, Reporting and Verification for GHG Emissions - July 2017", Table 400-2

(7) Ontario Ministry of Environment and Climate Change's "Guidelines for Quantification, Reporting and Verification for GHG Emissions - July 2017", Table 20-4

(8) Ontario Regulation 143/16 "Quantification, Reporting and Verification of Greenhouse Gas Emissions", Schedule 1

Witness: J. Murphy

TABLE 3: 2018 FACILITY-RELATED EMISSIONS

Line		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
		Volumes ¹ (10 ³ m ³)	CO ₂ Emissions ² (Tonnes CO ₂)	CH ₄ Emissions ³ (Tonnes CH ₄)	N ₂ O Emissions ⁴ (Tonnes N ₂ O)	CO ₂ e Emissions ⁵ (Tonnes CO ₂ e)
1.	Company Use - Buildings	1,388.8	2,587.3	0.1	0.0	2,603.5
2.	Company Use - Boilers	4,078.8	7,683.4	7.8	0.2	7,909.9
3.		5,467.6	10,270.7	7.8	0.3	10,513.4
4.	Company Use - Fleet	1,147.2	2,137.2	0.0	0.0	2,150.6
5.	Total Company Use	6,614.8	12,407.9	7.9	0.3	12,664.0
6.	Unaccounted For Gas (UAF)	106,077.0	197,621.5	3.9	3.7	198,854.8
7.	Compressor Fuel	15,957.3	30,059.2	30.4	0.8	30,945.5
8.	Total Facility-Related	128,649.1	240,088.6	42.2	4.8	242,464.3

Notes:

(1) Exhibit B, Tab 2, Schedule 1, Table 2, Col. 1

(2) Col. 1 x Table 4, Line 1, Col. 1 x 1000 (For Boilers and Compressor Fuel: Col. 1 x Table 4, Line 2, Col. 1 x Table 4, Line 3, Col. 1)

(3) Col. 1 x Table 4, Line 1, Col. 2 x 1000 (For Boilers and Compressor Fuel: Col. 1 x Table 4, Line 2, Col. 2 x Table 4, Line 3, Col. 2)

(4) Col. 1 x Table 4, Line 1, Col. 3 x 1000 (For Boilers and Compressor Fuel: Col. 1 x Table 4, Line 2, Col. 3 x Table 4, Line 3, Col. 3)

(5) Col. 2 + (Col. 3 x Table 4, Line 5, Col. 2) + (Col. 4 x Table 4, Line 5, Col. 3)

TABLE 4: CONVERSION FACTOR

Line		Units	Col. 1	Col. 2	Col. 3
			CO ₂ Emission Factor ^{6, 10}	CH ₄ Emission Factor ⁷	N ₂ O Emission Factor ⁷
1	Fleet, Buildings & Unaccounted For Volumes (UAF)	Tonne/m ³	0.001863	0.000000037	0.000000035
2	Boilers & Compressor Fuel Volumes	Tonne/GJ	0.04903	0.00004958	0.000001305
3	Budget Heat Value ⁸	GJ/10 ³ m ³	38.42	38.42	38.42
Line				Methane ⁹	Nitrous Oxide ⁹
4	Global Warming Potential for Carbon Dioxide Equivalent			21	310

Notes:

(6) Ontario Ministry of Environment and Climate Change's "Guideline for Quantification, Reporting and Verification for GHG Emissions - July 2017", Table 400-2

(7) Ontario Ministry of Environment and Climate Change's "Guidelines for Quantification, Reporting and Verification for GHG Emissions - July 2017", Table 20-4

(8) Assumed Budget Heat Value = 38.42 GJ/10³m³. This value should be assumed as a placeholder. In calculating actual emissions, actual heating value will be used.

(9) Ontario Regulation 143/16 "Quantification, Reporting and Verification of Greenhouse Gas Emissions", Schedule 1

(10) CO₂ Emission Factor for 'Boilers & Compressor Fuel': Ontario Ministry of Environment and Climate Change's "Guidelines for Quantification, Reporting and Verification for GHG Emissions - July 2017", Table 20-3

Witness: J. Murphy

TABLE 5: 2018 SUMMARY OF CUSTOMER-RELATED AND FACILITY-RELATED FORECAST GHG EMISSIONS

<u>Line</u>	<u>Description</u>	<u>2018 Forecast</u>
<u>Customer-Related GHG Emissions Forecast</u>		
1	Customer-related Forecast Volume (10^3 m ³)	10,591,615
2	ON.400 Emission Conversion Factor (tonnes CO ₂ e/m ³)	0.001875
3	Customer-Related Emissions (tonnes CO₂e)	19,855,327
<u>Facility-Related GHG Emissions Forecast</u>		
4	Facility-related Forecast Volume (10^3 m ³)	128,649
5	ON.20 Emission Conversion Factor (tonnes CO ₂ e/m ³)	0.001939
6	Facility-Related Emissions (tonnes CO₂e)	242,464
<u>Total Compliance Obligation</u>		
7	Total Compliance Obligation (tonnes CO₂e)	20,097,791

Witness: J. Murphy

CARBON PRICE FOR RATE SETTING PURPOSES

1. This evidence summarizes the derivation of Enbridge's carbon price for rate setting purposes.
2. In the Board's Framework¹, Section 6.2 states that:

The OEB has decided that the customer-related and facility-related charges will be set based on the annual weighted average cost of the Utilities' proposed compliance options.
3. Enbridge's annual weighted average cost of compliance ("WACC") is calculated by
i) determining the number of emission units or equivalent compliance instruments required, ii) identifying the price of each compliance instrument, iii) multiplying the compliance instrument price by the quantity of each compliance instrument, and iv) summing the values calculated in iii) for each compliance instrument and dividing by total number of emission units or equivalent compliance instruments identified in i).
4. As explained in Exhibit A, Tab 3, Schedule 1, Enbridge notes that the information required to calculate the Company's WACC is strictly confidential, being either market or auction confidential as defined by the Board's Framework.
5. Since the inputs into the Company's WACC are strictly confidential, Enbridge notes that the use of the Company's WACC at this time for rate setting purposes is not appropriate.

¹ Report of the Board, Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap & Trade Activities, EB-2015-0363, September 26, 2016, p. 31.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

6. Enbridge suggests that the carbon price for rate setting purposes be set based on inputs that are publically available. The Company believes that this is the most transparent means of developing a price for carbon for rate setting purposes.
7. As noted in the Framework, the Board has instructed the Utilities to set their annual carbon price forecast using the average of the [Intercontinental Exchange] ICE daily settlement of a California Carbon Allowance ("CCA") for each day of the forecast period for each month of the forecast year. Furthermore, the Framework states that the forecasting period should be 21 business days and should be as close as possible to the forecast year.
8. The Intercontinental Exchange ("ICE") 21-day strip of a California Carbon Allowance ("CCA") for delivery in each month of the forecast period, 2018, (the "ICE Price") was calculated in US dollars ("USD"). The USD ICE Price was converted to Canadian dollars ("CAD") using a 21-day USD/CAD strip rate. The 21-day period was from September 1 to September 29, 2017. The derivation of the ICE Price in CAD is detailed in Table 1.

Table 1: ICE Price

Strip Period	ICE Price (USD)	USD/CAD Exchange Rate ²	ICE Price (CAD)
September 1 to September 29, 2017	\$15.46	1.2284	\$18.99

9. The Company proposes to use the CAD ICE Price, as identified in Table 1, for rate setting purposes. While Enbridge acknowledges that the Board's EB-2016-0300

² Exchange rate based on a 21-day strip USD/CAD strip from September 1 to September 29, 2017.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

Decision and Order indicates (at page 3) that the Utilities should use the Ontario auction reserve price (in an unlinked market) for the carbon price forecast in their next Compliance Plan, the Company believes that the CAD ICE Price is a better indicator of the likely costs that will be observed assuming that Ontario is linked with the WCI market on January 1, 2018.

10. In future Compliance Plan filings, Enbridge will consider alternate rate setting approaches as additional details and methodologies become available.
11. At Exhibit G, Tab 1, Schedule 1, Enbridge sets out the derivation of its Cap and Trade Unit Rates for customer-related and facility-related costs. These Cap and Trade Unit Rates are calculated based on a carbon price of \$18.99 CAD.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

COMPLIANCE PLAN APPROACH OVERVIEW

1. In Ontario's transition to a low-carbon economy, the government issued the Green Economy Act (the "Act") which establishes GHG reduction goals for the province in combination with the implementation of Cap and Trade program. Proceeds resulting from Cap and Trade are then disbursed to drive forward GHG emission reduction priorities as outlined in the Climate Change Action Plan.
2. Progress towards meeting the ambitious provincial GHG reduction goals will take time require collaboration, focus and commitment on a broad scale from government and non-government actors including energy utilities, industry and regulators to name but a few. Enbridge maintains its commitment and focus on complying with the requirements of Cap ad Trade as well as to actively play a role in providing cost effective and meaningful GHG reductions.
3. This Exhibit outlines Enbridge's approach to its 2018 Compliance Plan keeping the broader context in which it sits as outlined above. In the (public) Decision and Order in EB-2016-0300, the Ontario Energy Board ("Board") concluded that Enbridge's 2017 Compliance Plan "...was based on reasonable option analysis and optimized decision-making and risk management processes and analysis"¹. Enbridge seeks to make continuous improvements and optimize decision making in the preparation and implementation of its Compliance Plans. As can be seen in this 2018 Compliance Plan, Enbridge has applied the learnings from one year of experience under Cap and Trade and has also taken guidance from the Board's EB-2016-0300 Decision and Order that endorsed Enbridge's 2017 Compliance Plan and gave some direction for future Compliance Plans.

¹ Decision and Order, EB-2016-0300, pg. 6

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

4. To start, it is important to understand the premises upon which the Company undertook its planning. In this document, Enbridge outlines the key assumptions, unknowns and knowns that were applied, and then proceeds to highlight other key aspects of the planning process underpinning the 2018 Compliance Plan.
5. Specific option analysis and decision making relative to each part of the compliance strategy are embedded in the separate evidence on each component of the 2018 Compliance Plan. Option analysis and decision making on allowances are found at Exhibit C, Tab 3, Schedule 1; on offsets at Exhibit C, Tab 4, Schedule 1. Exhibit C, Tab 5, Schedule 1 identifies the Abatement Construct, which guides the customer and facility abatement evidence filed at Exhibit C, Tab 5, Schedule 2 and Exhibit C, Tab 5, Schedule 3, respectively.

KEY ASSUMPTIONS

6. Enbridge has assumed Ontario will complete the steps necessary to implement linkage between Ontario's Cap and Trade program and Western Climate Initiative's ("WCI", includes California and Québec) Cap and Trade program for January 1, 2018.
7. Enbridge has assumed that in 2018 it will be a related person with Union Gas Limited ("Union") in Ontario and Gazifère Inc. ("Gazifère") in Québec, and will therefore be required to share and allocate the purchase and holding limits between the three entities. The Company's planning further assumes that it will not be a related person to any additional entities in 2018.
8. Enbridge has assumed that the final Offset Regulation will be similar to the draft Ontario Offsets Regulation (and associated Regulatory Proposal and draft landfill

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

gas protocol) released by the Ministry of the Environment and Climate Change (“MOECC”) in September 2017.

KEY UNKNOWNNS

9. The Company notes that although some of the unknowns it had in 2017 have been alleviated; however, several still exist. The key unknowns are outlined in this section.
10. Linkage of the Ontario Cap and Trade program with the WCI has been announced for January 1, 2018. And although there do not appear to be any additional steps to successful implementation of linkage on January 1, 2018 final details are still pending including for example the specific joint auction date.
11. The final Ontario Offset Regulation has not yet been issued. Only one draft offset initiative protocol has been released (for the Landfill Initiative Protocol). Enbridge understands that the final version of the Regulation and further draft offset protocols will be released later in 2017 or early 2018.
12. Many details on the abatement initiatives being supported by the Climate Change Action Plan (“CCAP”) and the GreenON Fund remain outstanding. Enbridge notes that these may impact the Board’s Marginal Abatement Cost Curve (“MACC”) and marketplace choices.
13. The DSM mid-term review (EB-2017-0127 & 0128) is underway, but not complete. Submissions were filed in September 2017 related to the possible relationship between DSM and Cap and Trade, but a decision has not been rendered. It

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remains to be seen what impact there may be on the Company's abatement plans from that proceeding.

14. The Board's gas supply planning process to address renewable natural gas ("RNG") and other environmental policies, such as potential clean fuel standards, have not been finalized.
15. In its 2018 Rate Adjustment case (EB-2017-0086), Enbridge requested approval of rate consequences of new abatement programs for Geothermal Energy Services and RNG Enabling Facilities. The Board directed Enbridge to file these requests in a separate application (EB-2017-0319), which is not to be heard until after the 2018 Rate Adjustment case. Accordingly, the outcome of these requests will not be known until some time in 2018, presumably after this Compliance Plan proceeding is completed.

KNOWN/BASE INFORMATION

16. As discussed in Exhibit B, Tab 3, Schedule 1, Enbridge's 2018 compliance obligation is forecasted to be 20,097,791 tonnes of carbon dioxide equivalent ("tCO₂e"). The Company notes that this amount is after customer abatement volumes applicable to the Green Investment Fund ("GIF") are removed from the forecasted volume, as shown in Exhibit B, Tab 2, Schedule 1, Table 1. Enbridge's total emissions forecasted in 2018 before removal of the customer abatement volume would be 20,108,211,280 tCO₂e.
17. Enbridge has not received free allowances towards its compliance obligation.

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18. Enbridge is able to use offset credits to cover up to 8% of its total obligation for the compliance period.

APPROACH TO 2018 PLANNING

19. With the carbon policy context understood, key assumptions, unknowns and knowns outlined, Enbridge set to work on its 2018 compliance planning. The diagram in Figure 1 captures the key elements of the planning approach which are further discussed in the body of this Schedule.

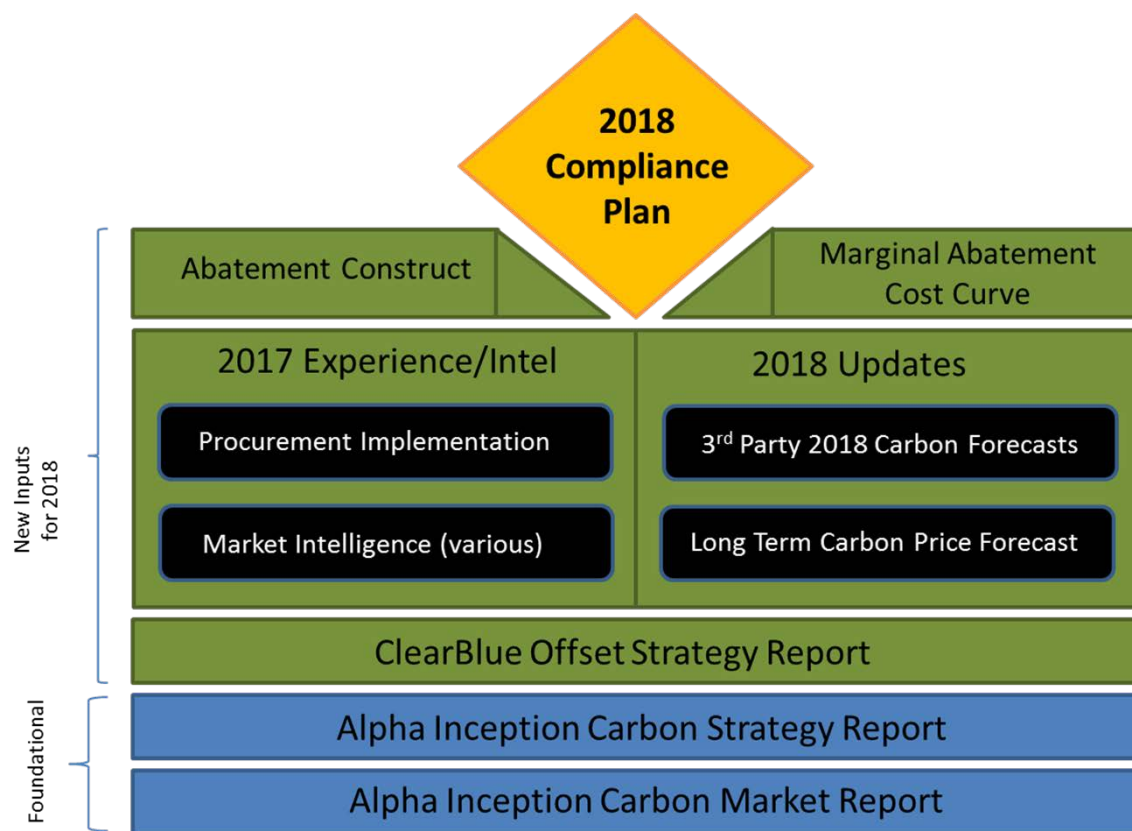


Figure 1: 2018 Compliance Planning Approach

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FOUNDATIONAL INPUTS

20. In 2016, Enbridge retained a third party carbon market expert, Alpha Inception LLC. (“AI”) to complete two reports to support its planning processes and ultimately its 2017 Compliance Plan filing. Those two reports were the Carbon Market Report and Carbon Strategy Report. The Carbon Market Report provided market insights and a discussion of financial compliance options. The Carbon Strategy Report outlined various procurement options viable for Enbridge during the 2017 timeframe. The two reports can be found at EB-2016-0300, Exhibit C, Tab 1, Schedule 1, Appendix A and Appendix B, respectively.
21. To begin 2018 planning, Enbridge revisited these reports that were completed less than a year ago to determine their relevance to a one-year 2018 Compliance Plan. Upon review, it became apparent that both reports were still largely relevant and provide foundational information and thinking. Although a full refresh was not necessary, Enbridge sought to gain updated thinking targeted around the probability and then hence the impacts of linkage.

NEW INPUTS FOR 2018

22. Enbridge realized that there was a need for two new key input to develop an effective procurement strategy for 2018:
- a. 2018 Carbon Price Curve: The first need was an updated 2018 market-based forward carbon price curve;
 - b. Offset Insight: The second need was a more in-depth analysis and recommended strategy around the offset market.
23. On May 31, 2017, Enbridge received the 10-year Long Term Carbon Price Forecast (“LTCPF”) from the Board. Although instructive in understanding demand-supply

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fundamentals for longer-term planning, the LCTPF is only directionally helpful for short-term procurement planning. This is because the LTCPF offers a single annual price forecast (i.e., one data point per year), and may not be relevant for procurement planning at any given point in time because of evolving market dynamics. Taking this into account, the Company determined more granular forecasting was required to ensure the Company could more effectively plan in an effort to minimize compliance obligation costs for its customers.

24. Enbridge determined it would be prudent to seek additional third party expertise around carbon price forecasting. As such, the Company retained consultants to provide additional forward carbon price curves showing intra-year pricing expectations. This approach was developed to emulate generally accepted best practice involving large investments where it is considered prudent to receive more than one expert forecast. The consultants' price forecasts, submitted in confidence, are found as Appendix A to Exhibit C, Tab 3, Schedule 1.
25. With the Guiding Principle of cost effectiveness top of mind, Enbridge will aim to minimize the costs of meeting its compliance obligation. Based on the volume of emissions allowances Enbridge must procure, and subject to the program rules in place (i.e., holding and purchasing limits), the Company must be attentive and flexible in its procurement activities.
26. By receiving and considering the details of these market experts' assumptions, Enbridge benefits from additional insight into the development of market demand and supply modelling. Enbridge will continue to work with third party experts and leverage their expertise in targeted ways that provide value to the compliance planning process and ultimately ratepayers.

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27. In addition to the 2018 carbon market price forecasts, Enbridge believed it was necessary to obtain additional third party assistance with the development of its offset strategy.
28. Irrespective of linkage, offsets become a more important consideration in 2018. The Ontario government has recently released a draft Offset Regulation and is in the midst of finalizing the Regulation as well as developing offset protocols. Although the exact timing is unknown, Enbridge anticipates that the final Offset Regulation and at least one offset protocol will be finalized in late 2017.
29. Enbridge retained ClearBlue Markets ("ClearBlue") to complete an offset strategy. Enbridge selected ClearBlue for this engagement given its vast experience in offsets. In particular, ClearBlue has participated in offset projects from many perspectives. Additionally, some of ClearBlue's staff have been employed by a Utility.² ClearBlue's Offset Strategy is a new input to the 2018 Compliance Plan and is found at Appendix A to Exhibit C, Tab 4, Schedule 1.
30. The existing and new inputs provided by third party consultants are important compliments to further round out Enbridge's carbon market experience, in understanding the players and nuances of the carbon markets, which has evolved since filing the 2017 Compliance Plan. The level of understanding has been aided by a number of market intelligence channels including membership in the International Emissions Trading Association ("IETA"), membership in the Carbon Market Compliance Association ("CMCA"), attendance at key trade shows, and discussions with many market players for formal and informal insights.

² Several of the ClearBlue consultants had worked during their careers in carbon markets at Vattenfall, the Swedish state owned Utility, which had a carbon compliance obligation in the EU Emission Trading Scheme.

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THE MARGINAL ABATEMENT COST CURVE AND THE LONG TERM CARBON PRICE FORECAST

31. Since the 2017 Compliance Plan filing, the Board led the development and release of two pieces of input for consideration in the development of compliance planning – LTCPF and MACC.
32. The LTCPF is a 10-year carbon price forecast based on broad based demand/supply market fundamentals. The LTCPF describes a minimum price scenario based on the formulaic Auction Clearing Price, a maximum price scenario based on non-linkage and a mid-price scenario. It is a useful tool for understanding the anticipated trajectory for carbon pricing as well as for longer-term investment planning as discussed earlier in this exhibit.
33. MACCs are intended to provide a prioritized visualization of carbon abatement options considering potential and costs of marginal abatement activities (i.e., incremental to what currently exists). The Board issued a MACC report, “Marginal Abatement Cost Curve for Assessment of Natural Gas Utilities’ Cap and Trade Activities” on July 20, 2017.
34. As explained at Exhibit C, Tab 5 , Schedule 1, Enbridge considered the results of the 2017 LTCPF and MACC study to the degree that time permitted in developing its 2018 Compliance Plan. In particular, Enbridge considered the guidance in the MACC about energy efficiency opportunities and RNG, being also mindful of the related DSM proceeding underway.

THE ABATEMENT CONSTRUCT

35. Enbridge recognizes that the Natural Gas Utilities are under a legal obligation to cover their customers’ emissions and emissions from their facilities through the

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Cap and Trade program but is also committed to advancing cost effective and meaningful GHG reductions. The Board's Cap and Trade Framework outlines several ways in which the Utilities may propose to meet their obligation which include: financial instruments (e.g. allowances, offset credits), customer abatement (e.g. RNG, energy efficiency, fuel switching, new technologies), and facilities abatement (e.g. leak repairs, capital upgrades). In the Framework, the Board states that in its evaluation of the cost consequences of the Utilities' Compliance Plans, it will consider whether the utility has "engaged in strategic decision-making and risk mitigation", "whether the Utility has considered a diversity (portfolio) of compliance options" and "whether a Utility has selected GHG abatement activities and investments that, to the extent possible, align with other broad investment requirements and priorities of the Utility in order to extract the maximum value from the activity or investment."³

36. In consideration of all applicable inputs, Enbridge developed an Abatement Construct. The Abatement Construct outlines the sustainment model by which low carbon initiatives are sought, vetted, categorized and advanced with the ultimate goal of broad based implementation. The Abatement Construct includes a four phased initiative funnel which provides clarity and common language around abatement initiatives. The Abatement Construct is proposed to be supported through resources that enable the advancement of low carbon initiatives. The Abatement Construct, Initiative Funnel and resource requirements are outlined in Exhibit C, Tab 5, Schedule 1.

³ Report of the Board, Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities, September 26, 2016, EB-2015-0363, pg. 21.

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37. Enbridge's Compliance Plans will provide details about the outcomes resulting from this initiative funnel, from concept through to specific proposals that may require a decision from the Board in order to proceed.
38. The Company's 2018 Cap and Trade Compliance Plan includes information on abatement initiatives that exist currently as well as those initiatives in various stages of the Initiative Funnel. Summary charts setting out each of the abatement activities that Enbridge has identified for 2018 can be found in Exhibit C, Tab 5, Schedule 2 for customer-related abatement and Exhibit C, Tab 5, Schedule 3 for facility-related abatement.

Governance and Accountability

39. Enbridge recognizes the continuing nascent nature of Ontario's Cap and Trade market which launched as a standalone market in 2017. Enbridge will continue the governance structure articulated in evidence in the 2017 Compliance Plan filing (EB-2016-0300, Exhibit C, Tab 1, Schedule 1). The Carbon Procurement Governance Group ("CPGG") is still relatively new, but is functioning well and will continue for 2018.
40. Enbridge has created a Carbon Strategy Working Group to monitor the implementation of the Compliance Plan and underpin the function of the CPGG. The Working Group will include members from the Carbon Strategy, Contract and Legal departments.

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Carbon Procurement Procedures and Policies

41. Procurement readiness remains an important ability that must be in place whether WCI linkage occurs or not. Fortunately, as noted below, the Company is in a position to be procurement ready under both scenarios
42. First, Enbridge notes that it can continue to use its existing Compliance Instrument Tracking System Service (“CITSS”) account upon linkage of Ontario with the WCI market and that it will continue to be able to meet the timelines set out in Table 1 below. As the Ontario timelines mirror existing WCI timelines, they are not expected to change.

Table 1: Auction-Ready Requirements:

Section in Regulation	Activities	Days Before (-) or After (+) Auction
60	Auction Notice Released	-60
67(1) 1.	Deadline to make changes in CITSS to any information required to be updated as a condition of registration	-40
66	Changes to the allocation of holding and purchase limits after this date prohibit participation in auction	-39
67(1) 2.	Deadline to apply for permission to bid in auction – names of all designated account representatives, names and contact information of Consultant that provided strategy advice, form of financial assurance	-30
67(1) 3.	Deadline to submit financial assurance	-12
71(3)	Auction exchange rate set	-1
	Auction Held	0
63(1)	Payment required for successful bids	+7
61(1) 2.	Earliest date for bid guarantee expiration	+26
64(2)	Summary of auction posted no later than	+45

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43. Second, Enbridge has established criteria associated with the purchase of allowances from the secondary market. This provides the Company with flexibility to procure instruments on the secondary market when opportunities arise that meets these criteria. These criteria are appropriate for the Ontario only market and/or the WCI linked market. Additionally, these criteria ensure rate predictability and prudence for the Company's rate payers.
44. Third, the Company has developed a Carbon Emissions Trading Agreement ("Agreement") for the purchase of carbon allowances. Having an Agreement in place with approved counterparties affords Enbridge the ability to more efficiently pursue particular transactions.
45. As a matter of principle, Enbridge may request a transacting party to sign a confidentiality agreement. This requirement is suitable for the WCI linked market and is intended to protect the Company in all its dealings.
46. Enbridge also maintains a subscription to the Intercontinental Exchange ("ICE") to ensure it stays abreast of carbon products it is offering as well as current pricing on the secondary market.
47. Finally, as discussed above, Enbridge has obtained an Offset Strategy report from ClearBlue. The Company is working to develop internal capabilities in order to participate in the offset market in Ontario and the WCI, including the development of policies and procedures.

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48. The culmination of the above steps and requirements is that Enbridge will be WCI ready when linkage proceeds so that the Company can take advantage of appropriate opportunities that might arise or exist in the broader WCI markets.

Resources and Capabilities

49. Throughout 2017, Enbridge has continued to attend and speak at carbon conferences and events to continuously learn more about Cap and Trade policy and market developments. Enbridge has been active in industry associations such as the International Emission Trading Association ("IETA") and the Canadian Energy Partnership for Environmental Innovation ("CEPEI") to name but two. The Company has established a strong network of relationships ranging from technical experts in the carbon and related offset markets, to policy makers and other compliance entities from a range of jurisdictions. These activities and relationships have provided significant and timely understanding of the broad trend developments and the specific regulation and market changes.
50. Enbridge recognizes that as the market develops, so too has and will its own resource requirements as outlined in Exhibit D, Tab 1, Schedule 1. Enbridge has taken a cautious approach to resourcing thus far and leveraged its existing resources where possible, but has identified the need for additional incremental resources which are necessary to properly meet and optimize its carbon obligation requirements. As Enbridge's internal personnel's market understanding and sophistication increases, the Company and its ratepayers benefit from the continuous improvement in the execution of its Compliance Plan. It is clear that the carbon market requires substantial attention to a number of different inputs to ensure an appropriate and optimal Compliance Plan is developed and implemented.

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OVERVIEW CONCLUSION

51. Though the Ontario only carbon market has been in operation for ten months, its development and the Company's experience and planning for 2018 and future years has evolved. The flexibility of the 2017 Compliance Plan has enabled this, but the need for flexibility, adaption and new strategies and business models will become increasingly vital in future so as to allow Enbridge to implement Compliance Plans which include additional amounts of customer abatement activities. The 2018 Compliance Plan is an important step in this direction and exhibits a clear evolution from 2017.

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COMPLIANCE PLAN – STRATEGY OVERVIEW

1. Enbridge provided an overview of its compliance approach, including the planning process, governance, policies and procedures, in Exhibit C, Tab 1, Schedule 1. This Exhibit provides an overview, including option analysis and optimization of decision making, of the Company's proposed strategy for 2018.
2. Enbridge has developed the strategy described in this 2018 Compliance Plan based on a series of key assumptions and base facts in conjunction with foundational inputs from 2017 and new inputs received in 2018. Enbridge also leveraged the experience and insights gained through various marketplace intelligence channels [REDACTED]. All of these elements are discussed in Exhibit C, Tab 1, Schedule 1.
3. The Company will only procure compliance instruments that can be used to meet the Company's compliance obligation, are readily available, are a reasonable cost option with a reasonable risk profile, meet acceptable counterparty credit requirements and uphold the Board's Guiding Principles. In addition, Enbridge will endeavor to minimize the costs and risks of compliance instruments it purchases. Enbridge is committed to a diverse portfolio of compliance options which will in due course include to an increasing extent, both customer and facility related abatement initiatives.

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11. Enbridge has considered abatement opportunities for 2018, as described in the Exhibit C, Tab 5 series of exhibits. The only abatement program with an incremental impact on emissions in 2018 is the home energy retrofit program, which is incremental to currently approved DSM programming, and which was funded by the government through the Green Investment Fund ("GIF"). The related emissions savings have been shown above in Table 1 and actual emissions savings will be included in the annual monitoring report upon verification.

[REDACTED]

13. The total amount that will be collected from customers during 2018 based on the proposed carbon proxy price of \$18.99 is \$381,657,052. [REDACTED]

[REDACTED] Actual
differences between the amounts collected from customers and the costs of meeting Enbridge's compliance obligations will be recorded in the applicable deferral and variance accounts for later disposition.

[REDACTED]

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Application of Guiding Principles

14. The Guiding Principles outlined by the Board in its *Report of the Board, Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities* (the "Framework") factored prominently in Enbridge's evaluation of the compliance options available to the Company and in the development of the compliance strategy formulated by Enbridge. Table 2 summarizes Enbridge's 2018 strategy with respect to each of the six Guiding Principles.

Table 2: Review of Chosen Strategy with Respect to Guiding Principles

Guiding Principle	
Cost-effectiveness	• Cost effectively leveraging consultant expertise • Building a highly capable and productive internal team • Building upon work done in 2017 rather than repeating the same work • Carbon procurement risk policy ensure risks are effectively identified and managed
Rate Predictability	• More price sensitive approach reduces difference between actual cost of compliance and proxy price used in rate, increasing predictability

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Guiding Principle	
Cost Recovery	• All compliance instruments are reviewed to ensure they can be used to meet the Company's compliance obligation • Only incremental administrative costs related to Cap and Trade are included in the Compliance Plan
Transparency	• All Cap and Trade instrument purchases will be tracked and reviewed as per Enbridge's governance structure • Cap and Trade activities will be reported to the Board in the Company's annual Compliance Plan filing • Compliance Plan includes as much information on the public record as possible, while maintaining market integrity. The strictly confidential information is transparent to the OEB.
Flexibility	

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Guiding Principle	
Continuous Improvement	• Governance structure includes frequent review of Cap and Trade instrument purchases, which will be analyzed to ensure continuous improvement in future purchase decisions. • Continuous review of various compliance instruments (including abatement opportunities) for inclusion into Enbridge's compliance portfolio • Development of an Ontario Emissions Trading Master Agreement

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ALLOWANCE PROCUREMENT STRATEGY

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[REDACTED]

23. Under Ontario Regulation 144/16, The Cap and Trade Program (“Cap and Trade Program”), related capped participants must share the purchase limit of 25%. In the WCI linked market Enbridge is a related person with two entities – Union Gas Limited (“Union”) in Ontario and Gazifère Inc. (“Gazifère”) in Québec. [REDACTED]

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26. It should be noted that under the California Cap and Trade regulation, natural gas utilities within the state receive free allowances that will decrease over time and are required to consign a portion of them to auction on an annual basis. Based on past auction notices, the amount of allowances consigned each auction is variable.

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CARBON ALLOWANCE PRICE FORECASTS

This information has been filed in confidence with the Ontario Energy Board.

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OFFSET PROCUREMENT STRATEGY

1. This evidence sets out Enbridge's strategy for the procurement of offsets.
2. Offset credits represent investment in real, verified emission reduction projects, and a cost-effective option for Enbridge to meet the Company's Cap and Trade compliance obligation.
3. The Ontario Compliance Offset Credits Regulation Proposal was released by the Ministry of Environment and Climate Change ("MOECC") in November 2016 with a draft Ontario Offsets Regulation and one associated offset protocol being released September 2017. Enbridge anticipates that a final Ontario Offset Regulation will be released late this year along with at least one final offset protocol. The Company also anticipates that the remaining twelve offset protocols¹ identified by the Ontario government will be released over the coming year or so.
4. Enbridge has been actively reviewing and providing comments, where opportunities existed, to offset policy documents including the Ontario Offset Credits Regulation and draft offset protocols. Enbridge has attended, where limited resources permit, offset stakeholder input webinars held by the Climate Action Reserve on behalf of the Ontario government.
5. Enbridge looks forward to an abundant supply of Ontario offsets so that it may invest back into the communities it serves. Enbridge believes that investing in

¹ The 13 protocols being developed for Ontario are listed in the Climate Action Reserve presentation available at <http://www.climateactionreserve.org/wp-content/uploads/2017/01/Adapting-Offset-Protocols-for-Ontario-Québec-and-Other-Jurisdictions-.pdf>

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Ontario offset credits will be critical to the development of a low-carbon economy. It also sees numerous co-benefits. For example, projects involving the use of waste to create energy – such as those converting landfill gas, anaerobic digestion and wastewater treatment facility feedstocks to renewable natural gas (“RNG”) – have the added benefit of driving a circular economy. Furthermore, Northern Ontario projects – such as carbon sequestration through forestry projects – may provide support for Indigenous communities.

6. Enbridge understands that offsets from California or Québec are fully fungible and can be used against Enbridge’s compliance obligation once linkage has occurred as expected on January 1, 2018. The Company will only invest in offset credits which are eligible towards meeting a carbon obligation in the Ontario Cap and Trade program, although the Company is hopeful that there will be an opportunity at some point in the future for a pan-Canadian approach to offset credits.
7. Under the current Cap and Trade regulation in Ontario, a capped participant can submit up to 8% of its obligation for the compliance period in the form of offset credits.
8. Enbridge recognizes the complexity and depth of information in the offset market. As such, the Company thought that it was prudent to gain insights and advice from a recognized and experienced consultant in the offset market. As discussed in Exhibit C, Tab 1, Schedule 1, Enbridge obtained an offset strategy from ClearBlue Markets (“ClearBlue” or the “Consultant”). ClearBlue was selected because of their past experience working at a large Utility in the area of carbon as well as hands on experience with numerous offset projects globally in respect of both offset

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procurement and protocol development. One of the consultants at ClearBlue was a member of the United Nations Framework Convention on Climate Change (“UNFCCC”) Clean Development Mechanism (“CDM”) Small-Scale Working Group for seven consecutive years.²

9. ClearBlue’s Offset Strategy report (the “Report”) is filed as Appendix A to this Exhibit. The report is structured in two parts: the first part provides information which can be placed on the public record, while the second part is the Consultant’s opinion on offset procurement and strategy, which is market confidential as defined by the Board’s Framework.
10. Enbridge has developed its offset strategy, which is outlined below, based on the insights gained, the technical expertise of Enbridge’s Carbon Strategy team and ClearBlue’s Report, and the Board’s Guiding Principles.

The remaining information in this Exhibit has been filed in confidence with the Ontario Energy Board.

² The UNFCCC is the body that is responsible for approving offset protocols that are utilized in the European Emissions Trading Scheme.

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J. Murphy
F. Oliver-Glasford



ClearBlue Markets

265 Rimrock Road
Suite 201, Toronto
Ontario, M3J 3C6
Canada

Tel 416-690-6369

Email mberends@clearbluemarkets.com
www.clearbluemarkets.com

ClearBlue Markets Cap & Trade Services

Offset Strategy

Internal paper for Enbridge Gas Distribution Inc.

Updated November 1, 2017

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Executive Summary & Recommendations [confidential]

We recommend keeping the Executive Summary and Recommendations confidential, see Section B for explanation.

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SECTION A – Background on Offsets (non-confidential)

1. What is an Offset?

A carbon offset is a reduction in emissions or a sequestration of carbon dioxide (CO₂) or other greenhouse gases¹ occurring outside the scope of a Cap & Trade system, that after all the relevant approvals, can be used for compliance within a Cap & Trade system such as Western Climate Initiative, Inc. (“WCI”), or for compensating emissions on a voluntary basis. Once all the necessary requirements are satisfied (see Chapter 2 and Annex I) and Ontario offsets have been issued into a Compliance Instrument Tracking System Service (“CITSS”) account, they can be sold and transferred, and used for compliance by entities such as Enbridge.

A key concept in understanding an offset is that of the baseline. This is a (counterfactual) scenario that shows how greenhouse gas emissions develop over time if the offset project would not have been implemented (e.g. the digester to treat manure was not built at the farm, or the forest conservation project was not implemented).

Figure 1 below shows an example of baseline versus project emissions. In the example, the baseline emissions are increasing each year. This could represent for example a landfill that is still receiving waste with the methane emissions from the decomposition of that waste increasing year by year are shown in the orange line. When the landfill gas capture project is implemented, the methane emissions are reduced to the level of the project emissions (blue line). The difference between baseline and project emissions would represent the number of offsets that can be awarded to the project. In WCI, this awarded amount is based on monitoring and verification that is completed on an annual basis, where the green area represents the offsets generated in the first year of project operation. See Annex I for more detail on the offset process.

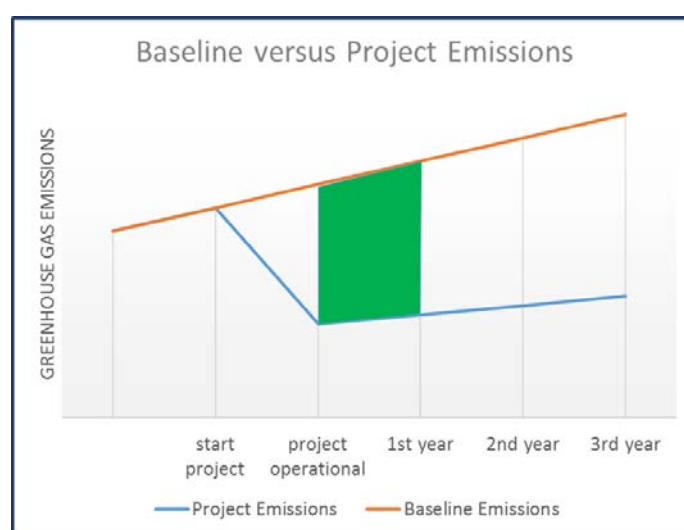


Figure 1. Baseline vs. Emissions chart.

¹ That would be calculated into CO₂ equivalent via their Global Warming Potential.

2. Offset Regulation and Protocols

The Ontario Regulation 144/16: The Cap and Trade Program (Ontario Cap & Trade Regulation) itself currently does not set out what the rules for the *creation* of Ontario offsets are, it only details how many offsets may be used for compliance (the 8% use).

On October 4, 2017, the MOECC posted an updated version of the proposed Ontario Offset Credits regulation and the one incorporated protocol- Landfill Gas (LFG). The new proposed regulation outlines the overall process, criteria and administrative requirements for the creation of an offset credit for compliance. The incorporated protocols outline the rules for each project type or class.

Currently, only the Landfill Gas Offset Protocol has been released. As future protocols are adapted by the Ontario and Quebec governments, they will be posted for public comment. Once they are approved by the Minister, they will be incorporated into the regulation (Offset Initiative Protocols for Ontario's Cap and Trade Program).

Key elements of the proposed Ontario Offset Credits regulation include:

2.1. Main actors involved in the offset project

It is important to understand the (legal) role of the main actors that will be involved in offset development. The 2016 Regulatory Proposal defined an '*Offset Initiative Operator*' and an '*Offset Initiative Sponsor*'.

- The role of *Operator* was included in the 2016 Compliance Offset Credits Regulatory proposal. The Operator was defined as the project developer and had the authority to apply for offset credits e.g. in a landfill project, own the land, operate the landfill and build and operate the LFG capture system. This role is not mentioned at all the current draft regulation, but there could still be a project developer that is not necessarily also the sponsor. This entity would not have a formal role in registering the project or applying for the offsets.
- The *Sponsor* would be the entity that registers the offset group and applies for the offset credits. The Sponsor is responsible for all applications and submissions to the registry and will receive the offsets in their CITSS account.

It is important to understand that the buyer could be the Sponsor of projects. However, a party also can procure offsets without deciding to take a role as a Sponsor.

- The main advantage of being a Sponsor would be to have control over all documentation, and to be directly receiving the offsets (which can be important in case of legal dispute or bankruptcy).
- The main disadvantage would be potential liabilities in case of offset reversals. Liability can remain even when you are no longer a sponsor, if the MOECC cannot find any other sponsor to hold liable.



2.2. Start date

The start date of a single offset project or a group of offset projects is the first day the project achieves a GHG reduction, avoidance or removal. All start dates must be in-line with the relevant protocol. For group projects, once the start date is determined, that date is not impacted by subsequent projects that are added to the group.

2.3. Eligibility criteria for sponsors

A registered Cap & Trade participant, individual, a corporation, a partnership or sole proprietorship can be a sponsor of an offset project or group offset project. The sponsor is authorized to register or re-register the project with the MOECC. The sponsor must be an individual that lives within Canada or a corporation that has an establishment in Canada². A sponsor cannot have a record of cancelled offset projects.

The sponsor is responsible for applying for the Ontario offset credits for the offset project. The credits are provided based on the GHG reductions, avoidances or removals an offset project for the GHG reductions, avoidances or removals that were achieved by an offset project during a crediting period. Sponsors face risk of project reversal. In the case of a reversal where there is no sponsor associated with the project, credits will be removed the holding or compliance account of any participant that was a sponsor in the past. Therefore, a risk still exists even if the sponsor is no longer sponsoring the project.

2.4. Eligibility criteria for initiatives, both single and in groups

In order to register a project as an offset project, the project or any component of it, cannot be registered or listed in any other program that recognizes GHG reductions, avoidances or removals. The offset project is must be located in Canada with a start date of January 1, 2007 or later. For any projects located in Quebec, those projects will follow Quebec's offset regulation.

In the event that an offset project is cancelled, a new sponsor will have to re-register the project. Upon re-registration, the crediting periods for the project will remain the same as before the cancellation. The new sponsor will assume the responsibility of being the project sponsor from the first day the project was originally registered.

There are special considerations outlined for a group offset project. The sponsor of the project will also be the sponsor of any other projects in the group. When registered offset projects are in a group, they will be treated as a group in regard to the creation or cancellation of Ontario offset credits. The project is able to use the same baseline and calculations determined in the applicable protocol to calculate GHG reductions, removals or avoidances as the other projects in the group.

2.5. Registration/ Re-registration requirements

When a sponsor registers or re-registers for a project they must disclose a description of the project, what protocol it applies to, the start date or anticipated start date of the project, and

² In the 2016 proposal, the sponsor had to be based in Ontario. The current regulation proposal has expanded the requirement to all of Canada.

an estimate of the anticipated GHG avoidance, removals that will be achieved over the reporting period. The sponsor must also provide a document proving that the sponsor is authorized to register or re-register the project, and documentation that neither the project nor any component of it is already registered or listed in any other programs that recognizes GHG reductions, avoidances or removals.

In addition to the criteria above, sponsors that register or re-register a project to be part of a group offset project must provide a list of other initiatives that have already been registered or intend to be registered within the group.

2.6. Time period for application

The application for an offset project may be made before the start date of the project, but not before the day the applicable protocol is published. The application must be completed within 18 months of the later date between the start dates of the offset project, or the day the protocol is published. For example, a project that started 4 years ago, would have 18 months from the time the offset protocol is published to get all documentation in order and apply as an offset project.

2.7. Crediting periods

A crediting period for a single offset project or project in a group is the period in which offset credits may be created for GHG reductions, avoidances or removals achieved by the project or project in a group. The first crediting period begins on the start date for the project.

For non-sequestration projects, projects that reduce or avoid GHG emissions, each crediting period is 10 years or the period specified by the applicable protocol. For sequestration projects, projects that remove GHG from the atmosphere through storage, each crediting period is 30 years or the period specified by the applicable protocol.

In terms of subsequent crediting periods, non-sequestration projects can only have three consecutive crediting periods (30 years). Currently, there are no limits for sequestration projects.

2.8. Reporting periods

The reporting period for individual and group offset projects is every 12 months. The timing of the reporting period depends on whether the project start date is before or after the applicable protocol is published.

If the applicable protocol is published before or on the start date of the project, the 12-month reporting period will begin on the start date of the project and each subsequent 12-month period. If the applicable protocol is published after the project start date, the 12-month reporting period will begin on the date the project is registered, and each subsequent 12-month period. The report must include details of the reductions, avoidances and removals that occurred within the 12-month period.

2.9. Reversals

Offset projects are subject to reversal if an error, omission or misstatement was made on either a project or verification report and the number of Ontario offsets created for the project is greater than the amount of credits it should have been issued. If the Minister suspects that a reversal has occurred, the sponsor must submit a reversal report and verification report that are prepared in accordance with the applicable protocol. During this time, neither the sponsor nor the designated account representative is allowed to transfer any emissions allowances from the holding account to any other account other than their compliance account. Once the reversal is corrected, the restrictions on the sponsor and the designated account representative are lifted.

2.10. Reporting and verification requirements

The initiative report consists of the total amount of GHG reductions, avoidance or removals achieved for the reporting period expressed in tonnes of CO₂e, calculations related to GHG sources, sinks and reservoirs, a description of the leakage assessed, and any violations of legal requirements that may have an impact on the amount of GHG reductions, avoidance and removals achieved during the reporting period. The initiative report must be verified by an accredited verification body. The accredited body will visit the project site once for each initiative report.

The reversal report consists of the total amount of reversal calculated in accordance with the protocol, as well as the calculations related to the total amount of the reversal. Reversal reports must also be verified by an accredited verification body.

After verification of an initiative report or a reversal report, the verification body will issue a verification statement and report.

2.11. Record keeping requirements

For sponsors, all records related to an offset initiative in either paper or electronic format must be kept for a minimum of seven years after the end of the last crediting period for the project.

2.12. Ontario and Quebec Offset Protocols

There is currently a joint Ontario and Quebec project by a team of consultants lead by Climate Action Reserve (CAR) to adapt protocols for use by the Ontario and Quebec Cap & Trade programs. The protocols will be applicable in Ontario and Quebec, but also will be made applicable for use in the rest of Canada if possible.

Each candidate protocol is evaluated against WCI criteria defined in the *WCI Offset System Essential Elements Final Recommendations Paper*. The key criteria from WCI related to offsets are:



- **Real** – offsets are quantified using accurate and conservative methodologies, taking into account leakage³
- **Additional** – offsets only awarded for the portion of greenhouse gas emission reductions or removals that would not have happened under a baseline scenario
- **Permanent** – reductions or removals are not reversible, or provisions must be in place in case removals are reversed (replacing offsets, 100-year timeframe)
- **Clear Ownership** – the offset developer must have legal ownership of the greenhouse gas emission reduction or removal resulting from the offset project⁴
- **Verifiable** – verifiable means that a GHG reduction or removal is well documented and transparent, such that it lends itself to an objective review by a qualified verifier.
- **Enforceable** – each WCI partner jurisdiction should have sufficient compliance/enforcement mechanisms to compel compliance with its requirements and with WCI offset protocols.

The following three 'priority protocols' have already been developed and the first (and second) drafts have been published.

1. Landfill Gas Capture and Destruction
2. Mine Methane Capture and Destruction
3. Ozone Depleting Substances Capture and Destruction ("ODS")

So far only the LFG protocol has been adopted in the draft offset regulation. In this protocol, projects located in Quebec can apply in Quebec only, and projects located in Ontario or the rest of Canada can apply in Ontario.

It is anticipated that the following protocols will be developed this year:

1. N₂O Reductions from Fertilizer Management
2. Emission Reductions from Livestock
3. Anaerobic Digestion (Organic Waste and Manure)
4. Organic Waste Management
5. Forest (avoided conversion, and improved forest management)
6. Afforestation and Reforestation
7. Urban Forest
8. Grassland
9. Conservation Cropping
10. Refrigeration Systems

All of these protocols are being developed via a 'top-down' process, i.e. the Ontario and Quebec governments have chosen which protocols are being developed. There is no formal procedure for 'bottom-up' protocol developments, however, it may be possible to request

³ Leakage refers to effects outside the boundary of the project itself, for example a forest conservation project might lead to increased logging outside the project boundary.

⁴ This is not always obvious, for example, we have seen disputes between operators of landfills and the owners of the land on which the landfills were located, both claiming ownership of the offset credits.

certain protocols for other project types, to then be developed 'top down', or possibly also to submit protocols that would then have to be approved.⁵

There have been some delays in developing the protocols and we now expect most of the protocols to be finalized by the end of 2017 or early 2018.

3. Considering an Offset

Given an offset credit can be used toward compliance obligations, as an equivalent to an allowance, a discussion of why and what a compliance entity may consider in evaluating offsets may be instructive.

Offsets at this point in time may provide entities with opportunities to meet their compliance obligation at a decreased cost. An offset, depending on type, timing, and other variables may be procured at a discount to an allowance. The discount in price does need to be considered in relation to the risks and costs. Offsets do inherently require more resources, as they are a more sophisticated instrument with a number of risks. Any entity wishing to consider offsets would need to fully understand costs and benefits, and be adequately resourced to manage the level of engagement appropriately.

There are different ways of purchasing offsets. These include:

- Primary offset sourcing – purchasing directly from project owners or developers, at various stages of project development.
- Secondary offset purchasing – purchasing from the secondary market
- Hybrid options including carbon fund participation.

Each route involves very different costs and risks, with the primary route carrying the most risks as the number of offsets that will be delivered typically remains uncertain until close to each delivery date. Also, sourcing offsets from Ontario, California, or Quebec will involve different risks and somewhat different price levels.

⁵ Since there is a significant cost and effort involved in developing an offset protocol, and this would be new (no bottom-up protocol has been approved yet), we would not recommend to start developing a protocol without prior consultation with the government to assess the likelihood of approval.



SECTION B – Enbridge Offset Strategy [Confidential]

Confidentiality

We recommend that the remainder of this document (including the annexes), which contains specific information and advice related to Enbridge's offset strategy, remains strictly confidential in its entirety. Even where, for example, general market information is provided, or risks are being explained, that information is market sensitive as it could lead others to draw conclusions on how Enbridge might use that information.

It is important to realize that Enbridge will be competing in a market to purchase offsets. Enbridge would not only be competing with other compliance buyers in the market for offsets, but also with intermediaries that take their own positions in the offset market. If Enbridge's strategy would involve a preference for a certain project type or jurisdiction, or for a certain route to market, this could lead others to buy into specific offset types ahead of Enbridge to generate a profit, and project developers may see their negotiating position improved.

We have, for example, experienced in Europe when entities were looking to buy certain specific types of offsets for different reasons, the price of those types of offsets would rise significantly, as soon as others became aware of such preferences.

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7.2. Carbon Funds

A carbon fund (or offset fund) is normally a legal structure set up to source and manage a portfolio of offset projects for multiple buyers. The Prototype Carbon Fund by the World Bank that started in 2000 was the first example of a carbon fund. It sourced offsets under the Kyoto Protocol on behalf of various governments. In Europe and Japan, there have since been many examples of private and public-sector carbon funds that sourced CERs (offsets in the Kyoto market) for both governments and companies under the EU Emission Trading

[REDACTED]

Scheme (EU-ETS). [REDACTED]

In WCI, we have not seen as much carbon fund activity as was seen historically in Europe and Japan. In the US, there is the Climate Trust Fund, and the COOP Carbone Fund recently announced a new offset fund in Quebec, it will also purchase in Ontario (see Annex V for more information on these funds). To date, we have not seen any announcement for a fund specifically aimed at the Ontario compliance market.

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8.1. Linkage of Ontario with the WCI market

On September 22, 2017, Ontario, Quebec and California signed the "*Agreement on the Harmonization and Integration of Cap-and-Trade Programs for Reducing Greenhouse Gas Emissions*", the linkage agreement that would link Ontario's market to the WCI market as of January 1, 2018.

[REDACTED]

Following the linkage agreement, the MOECC released the Proposed Amendments to the Cap & Trade Program and Reporting Regulations & Proposed Service Regulation, to account for the new linked market.

Quebec and California are anticipated to make similar changes to their respective regulation to ensure clarity and transparency. The comment period for the Ontario regulation amendments is open until November 6, 2017. The finalized regulation is expected by December 2017.

The Ministry is proposing the following changes related to offsets:

8.1.1. Recognition of Compliance Instruments

To ensure the effective linkage of Ontario's Cap & Trade program to California and Quebec's Cap & Trade programs; the Ministry will recognize compliance instruments from California and Quebec for compliance obligations in Ontario. Ontario entities would be able to purchase or sell compliances instruments along with Ontario's instruments, while entities in California and Quebec would be able to do the same.

The Ministry is proposing to treat emission allowances and credits from other jurisdictions similarly to Ontario instruments when being removed from accounts at the end of the compliance period. Compliance instruments, regardless of the jurisdiction they originate from, will be removed according to the same algorithm applied in Ontario.

Ontario will follow California's regulation regarding offset credit invalidation. Ontario entities that purchase California offset credits would be responsible to replace those credits in the event they are invalidated.

8.1.2. Holding and Purchasing Limits

The Ministry is proposing to adjust the holding limit formulas to account for the size of the new linked market. There is no mention of a holding limit for offsets in the proposed regulation amendments or in the proposed offset regulation. However, the 2016 Compliance Offset Credits Regulatory Proposal stated that holding limits do not apply to offset credits.

For Enbridge's offset purchasing, this means that California offsets can be bought and used for compliance, and as soon as linkage has been made operational in 2018, Enbridge would be able to take delivery of California offsets in its CITSS account.

It is important to note that jurisdictions can withdraw from the linkage agreement. It states that: "*A Party that intends to withdraw from this Agreement shall endeavour to give 12 months notice of intent to withdraw to the other Parties. A Party that intends to withdraw from this Agreement shall endeavour to match the effective date of withdrawal with the end of a compliance period.*" In practice, "de-linkage" will not be easy for governments to implement, for example because compliance entities will already be holding compliance instruments from other jurisdictions in their accounts.

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Annex I – Offset Process

As far as we can see from the regulatory proposal, the main steps in the Ontario offset process would be as summarized below. Note that part of the terminology used, and also some of the steps are different in the California and Quebec regulations. In each step below, the main actor(s) responsible is indicated in *italics*.

- Develop the 'offset initiative description' – ***Sponsor/Consultant***
 - Forms will be made available for this
 - It is important that the project is eligible in a protocol, and closely follows the instructions in the protocol
- (Optional: have the project plan Validated – ***Independent Validator***)
 - Validation is normally an important step in offset projects. It appears that Ontario will not require this step. However, that means there is more risk that any issues (in relation to the Protocol) will only be discovered at the stage of verification
- Initiative registration – *Sponsor -> Registrar (=MOECC)*
- Project implementation / operation – ***'Offset Initiative Operator'***
- Monitor (see Protocol) – ***Operator / Sponsor***
 - Monitoring should normally be done continuously, in line with all protocol requirements
- Initiative Data Report – *Sponsor*
 - This will present the monitoring data
- Verification report – *Independent Verifier*
 - Checks that the project itself and monitoring data is in line with all requirements
- Issuance – *Sponsor / MOECC*
 - Offsets will be issued in the Sponsor's CITSS account

Annex II – Summary of Protocols in the Pipeline

Below we provide a brief description of the protocols that are now available as a draft and some comments on project potential.

Landfill Gas Capture and Destruction

This protocol is for projects that capture and destroy landfill gas (or LFG, usually containing around 50% methane) from landfill sites. Landfill gas projects are a very common type of offset project, and are a cost-effective way to reduce emissions because of the high Global Warming Potential of methane (the GWP for CH₄ is 21 times that of CO₂, which if we simplify means that each tonne of methane from a landfill that is combusted could earn 21 offset credits).

Ontario intends to apply this protocol to landfill projects in all of Canada except Quebec. Projects located in Quebec would be submitted under the Quebec offset program.

As a general rule, reductions must be beyond 'business as usual' and beyond *the most stringent regulation of the three partner jurisdictions*. The implication of this rule is significant for the LFG protocol. Only projects that go above and beyond landfill gas capture and destruction requirements in the landfill regulations of California *and* Ontario *and* Quebec are eligible to generate offsets. More jurisdictions joining the WCI market in the future may lead to even more stringent requirements in future versions of the protocol. In practice, these requirements now imply that only smaller landfills, or certain larger ones that no longer receive waste, would be eligible as an offset project. The specific size thresholds based on the combination of existing landfill regulations in the three jurisdictions are included in the protocol itself.²²

The calculation of offsets in the LFG protocol is based on monitored gas flow and methane content.²³ To ensure a conservative calculation of offsets, several discount factors would apply:

- A discount factor for oxidation in the baseline. This is to correct for any methane that would have oxidized (into CO₂) in the baseline scenario on its way to the surface of the landfill.
- A discount factor for uncertainty in measurement. This only needs to be applied when the CH₄ content in the gas is established via samples, since the percentage of methane in the gas may vary significantly over time. When methane content is measured continuously, there is no requirement for this discount.
- A discount factor for methane destruction in the baseline, depending on the baseline scenario. This would only apply if there was already some methane capture and destruction in the baseline.

²² Enbridge has commented on this in the MOECC stakeholder consultation process

²³ After comments by ClearBlue, the second draft version of the protocol also allows an alternative calculation based on kWhs produced and the efficiency of the engine used, in case there is no past data on LFG flow and CH₄ concentration. This is important for projects that have already started (possibly several years ago) that do not have sufficient records of gas flow and methane concentration.

- The protocol also provides default values for flare efficiency and combustion efficiency of other devices used to destroy the methane (such as an engine or a boiler), these also have to be incorporated in the overall calculation to discount for any methane that is captured, but still remains uncombusted.

LFG project developers are usually municipalities or regions, private landfill operators, or specialized biogas companies.

Mine Methane Capture and Destruction

This protocol has a relatively broad applicability, as it combines two existing Quebec protocols:

- Active Drainage Protocol (drainage from active underground and surface mines)
- Ventilation Air Methane (VAM) Protocol (VAM from active underground mines)

The protocol applies to projects in all of Canada (coal mines in Canada are located mainly in B.C. and Alberta).

Enbridge has commented on the first draft (with inputs from ClearBlue) related to projects supplying the gas to the natural gas distribution grid. This was not considered an eligible project scenario, as it was considered not additional as this is common practice for some mines in the USA. At the same time, the protocol did allow flaring as an eligible project scenario, which would imply the offset protocol would promote an environmentally inferior option. This was amended in the second draft version.

Ozone Depleting Substances Capture and Destruction

The ODS protocol deals with destruction of refrigerant and foam blowing agent (contained in insulation materials). It applies to certain halocarbons with a very high global warming potential that have been phased out by the Montreal protocol and Kigali Amendments. The source of the materials recovered should be Canadian and should either be appliances (for refrigerant and foam blowing agent) or stationary installations (refrigerant only). The destruction facility can be in the US or Canada, and should apply ODS destruction technologies that were approved under the Montreal Protocol. It is very important for projects under this protocol to have documentation on the 'chain of custody', and to have evidence on the 'point of origin', to show that eligible refrigerant and foam blowing agent from Canadian appliances are destructed.

The baseline assumption for the foam blowing agent is that the insulation foam would be shredded and landfilled, and the halocarbons would leak into the atmosphere. In the project, the blowing agent would be extracted, transported, and destroyed. For the refrigerants, the baseline assumption is that these high GWP gases would be reused and would leak over time. The assumption for the project emissions is that the recovered refrigerants would be replaced by lower GWP refrigerants.

Emission reductions are thus based on 'future avoided leakage'. Projects cannot continue as long as a normal crediting period. The draft protocol allows for 5 years of 'destruction events' with annual reporting (this was only 12 months in a previous version). Emission reductions

are then still generated over the 10-year crediting period as the 'avoided leakage' is then assumed to occur during the whole crediting period.

This project type has a very high potential for generating offsets, as can be seen from the volumes issued in California and Quebec (see Annex 4). It should also be noted that there is a relatively high risk of errors, or even fraud for this project type. Due to the extremely high global warming potential of the gases, monitoring and recording of everything that happens needs to be very accurate. The only example seen so far in the California market where offsets were invalidated related to an ODS project.

The protocols below have not been published yet, we only provide a brief indication on what these protocols are expected to apply to.

N₂O Reductions from Fertilizer Management

Both the production and the use of fertilizers typically involve significant Nitrous Oxide (N₂O) emissions. N₂O has a global warming potential of 310 times that of CO₂. We expect this protocol to aim at quantifying the emission reductions achieved from better fertilizer management, which would involve farmers reducing their fertilizer application while achieving similar crop results.

Emission Reductions from Livestock

This protocol would aim at livestock feeding practices to reduce enteric fermentation (reduce animal flatulence).

Anaerobic Digestion (Organic Waste and Manure)

Projects under this protocol are expected to divert waste streams away from landfilling or other anaerobic storage that would emit methane, and introduce controlled digestion to treat the organic waste, e.g. food waste.

The protocol aims at organic waste (green bin waste) and manure, but could potentially also include wastewater treatment sludge. Co-digestion of different types of waste streams is expected to be allowed under this protocol.

Project developers could be municipalities and regions or private waste management companies or biogas developers. ClearBlue is already in contact with several Ontario developers looking to use this protocol.

Organic Waste Management

As an alternative to the organic waste digestion protocol, this protocol would aim at projects that avoid CH₄ emissions from organic wastes (e.g. food waste) through composting. Composting is an aerobic treatment that would not release methane when managed properly.

The protocol may also allow incineration of organic waste, which would also avoid the methane emissions.

As in the organic waste digestion protocol above, project developers could be municipalities or regions, and also private waste management companies. ClearBlue is also in contact with several Ontario developers looking at composting projects.

Forest (avoided conversion and improved forest management)

This protocol is expected to aim at various types of forest management, thus increasing or protecting carbon sequestration in the forest. The lifetime for all sequestration projects should be 100 years, and the project sponsor would be initially liable if somehow the carbon sequestration is reversed within those 100 years. As backup, MOECC would use the buffer account.

This protocol is expected to have a higher percentage than the normal 3% that would go into the buffer account, as the potential for reversal adds to the uncertainty around forest carbon sequestration projects. The specific percentage may vary for different project type options within this protocol.

This project type potentially has good PR value for having green local projects, but at the same time there is a risk of non-permanence. As can be seen from the California issuances (see Annex 4), this project type offers the largest potential for offsets.

Afforestation & Reforestation

This protocol would be similar to the 'forest' protocol above, but would aim at new forests or reforestation. Note that carbon sequestration in recently planted trees remains low for several years, so that this project type is not expected to generate many offsets in the first years of their lifetime.

This protocol is also expected to have more than 3% go into the buffer account, and also potentially offers good PR value.

Urban Forest

This is expected to be based on the California 'Urban Forest Projects' protocol. The California protocol aims at 'removal enhancement projects' defined as a planned set of tree planting and maintenance activities that permanently increase carbon storage, taking into account GHG emissions associated with planting and maintenance of project trees.

A 'removal enhancement' project is defined as a planned set of tree planting and maintenance activities that permanently increase carbon storage, taking into account GHG emissions associated with planting and maintenance of project trees.

This California protocol is applicable to three specific project types: urban forest projects undertaken (1) in municipalities, (2) on educational campuses, and (3) by utilities. Ontario and Quebec may not copy the specific provisions for utilities; however potential project developers are expected to be municipalities or regions. Note that the California protocol was already introduced in 2011, yet we have not seen any ARB issuance of offsets under this protocol.

Grassland

We expect this protocol to be inspired by an existing Climate Action Reserve 'Grassland Project Protocol'. When grasslands are disturbed, such as when the land is tilled for crop cultivation, a portion of the stored carbon oxidizes, releasing CO₂ into the atmosphere. The protocol aims at projects that avoid the loss of soil carbon by avoiding the conversion of grasslands to cropland.

Conservation Cropping

This protocol is expected to revolve around new farm practices. For example, by no longer tilling the soil, more carbon may be sequestered in the soil over time, while also reducing the need for herbicides.

The PR value of this project type may be more limited compared to other sequestration projects, as carbon sequestration in the soil may be less 'visible' to the public.

Refrigeration Systems

This protocol is expected to deal with projects that use alternative refrigerant gases. It would aim to replace refrigerants that do have a very high GWP, but that are still allowed under the Montreal Protocol and Kigali amendments, by low GWP refrigerant gases. For example, CO₂, with a GWP of only 1, maybe be used in some new refrigeration systems.

Annex III – California Offset Risks and Traded Contracts

Offset invalidation risk

In California, the risk of offset invalidation would be on the buyer who holds the offsets. The ARB has determined that it is the responsibility of the offset purchaser to replace invalidated offsets within six months. The market has termed this provision as 'buyer liability' and has openly expressed concern over the cost of developing and issuing offsets. This regulation characteristic has also hampered the development of a secondary offset market in the WCI Cap & Trade Program. Pursuant to § 95985 of the California Cap & Trade regulations if the California regulator (ARB) makes a final determination that an ARB offset credit is invalid credits are removed from any holding or compliance accounts (after granting parties the relevant cure-periods).

The grounds for invalidation are:

- *Overestimation*: if an offset project's data report contains errors that overstate the amount of GHG reductions or GHG removal enhancements by more than 5%.
- *Illegality*: if the project activity and implementation was not in accordance with all local, state or national environmental, health, and safety regulations during the Reporting Period for which the ARB offset credit was issued.
- *Double-Counting*: if the ARB finds that offset credits have been issued in other markets for the same project area during the same time period for which the project has received ARB credits.

The amount of time during which an offset could be invalidated after issuance is eight years. This term can be shortened if an offset project is 'double verified' by two different verifying bodies within three years of issuance. In this case, the invalidation period is shortened to three years or three reporting periods.

Forestry reversals do not result in invalidation. If reversal is unintentional but lowers a project's actual carbon stocks below its baseline, the project will be subject to termination. If, in turn, reversal is unintentional and does not drop the project below its baseline, ARB will retire credits from the forest buffer account in an equal amount. If reversal is intentional, the forest owner is under the obligation to replace the credits.

Invalidation Process:

- Initial Determination
 - With the reason for determination
- Notification to Applicable Parties
 - Current holders and entities that have retired ARB offsets
 - Offset project operator and, for forestry projects, the forest owner
- Opportunity to submit 'additional information'
 - 25 calendar days
 - ARB may request information
- Final Determination
 - 30 days from receipt of all necessary information

Consequences of Invalidation:

- Suspension of Transfers. ARB will suspend all transfers of ARB offsets subject to an initial invalidation determination
- Removal. ARB removes ARB offsets invalidated prior to retirement from the holding or compliance account where they reside at the time of invalidation
- Replacement. ARB offsets that have been retired prior to invalidation are subject to a replacement obligation.
 - Forestry: forest owner must replace invalidated ARB offsets within six months of final invalidation determination
 - Non-sequestration: retiring entity must replace invalidated ARB offsets within six months of final invalidation determination

Types of ARB offsets and contracts that are traded

For California offsets, different contracts have been introduced in an attempt to eliminate the invalidation risk, where the seller would take on the invalidation risk. Offsets that are purchased under these types of contracts are called Golden CCOs. These would, however, still involve a credit risk on the seller. Note that offset credits from other jurisdictions would fall within the same 8% limit that applies to Ontario allowances. For example, if California or Quebec offsets are used to cover 2% of emissions, only the remaining 6% can be filled with Ontario offsets.

These are the types of offsets and offset contracts we see in California, all of which relate to offsets that can be used under the 8% usage limit:

- Early Action Offset Credits (EAOCs): Early action offsets are issued to a voluntary offset project (approved by existing voluntary quantification methodologies) that represents a GHG reduction or GHG removal enhancement which occurred between 1 January, 2005 and 31 December, 2014. Early action offset projects must have been developed prior to 1 January 2014, and located in the United States
- ARB Offset Credits (ARBOCs): - CCO3
 - ARBOCs are offsets issued by CARB
 - Buyer invalidation liability risk continues for 3 years
- ARB Offset Credits (ARBOCs): - CCO8s
 - Same terms as above except 8 years of invalidation risk versus 3 years
- Seasoned CCOs
 - These are offsets that have gone through either the 8 or 3-year invalidation period, and no longer have invalidation risk
- Golden CCOs
 - Seller will replace the invalidated offset with either an offset or an allowance, depending on the contract specifics
 - Here the buyer has a credit risk on the seller of the offset
- "Platinum" CCOs
 - This is a newly introduced way of contracting CCOs, where an insurance company would cover the invalidation risk

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Annex V – WCI Carbon Funds

To date there are only a few carbon funds that have been created for the purpose of developing offsets for the WCI Cap and Trade programs (both in California and Quebec)

1) Climate Trust Fund:

The first, and to date, only carbon fund for WCI offsets based out of the USA was the fund launched by the Climate Trust.²⁵ The US-based Climate Trust created a \$5-15 million fund to finance projects that can generate offsets for the California Cap & Trade scheme and voluntary carbon markets. The Climate Trust said it has secured grant funding from the US Department of Agriculture and the Lucille Packard Foundation, adding that it hopes the fund can eventually be scaled up when other investors get involved.

It is hoped that after the pilot proves successful, the Portland, Oregon-based trust will scale the carbon fund to between \$100 million and \$250 million to attract institutional and impact investors. Projects will receive an upfront investment — equal to one half the current market carbon price, multiplied by the project's projected credit volume over 10 years — that can be used for costs such as development or land acquisition.

2) COOP Carbon Fund- Fonds Carbone:

This fund was first announced in Marrakesh during the COP meeting in November 2016. However, the official formal announcement of the kick-off of the fund is expected in the next few months. The Fonds Carbone is the first carbon contract fund to be created in Quebec. It will be a \$20 million fund dedicated to financing projects to reduce GHGs in exchange for offset credits that will be generated. The fund will be managed by an entity that will be co-owned equally by Fondation and Coop Carbone.

It is expected that the fund will provide financing for 15 to 25 projects. The contract for project developers will be for a minimum of \$500K and a maximum of \$2M of funding for projects that will generate offsets eligible in the WCI Cap & Trade Program. A maximum of 10% of the fund can be invested in the same project and 20% in projects belonging to the same sponsor.

3) The Climate Solutions Group (Low Carbon Finance Platform - LCFP)

Although The Climate Solutions Group (CSG) do not consider themselves to be a carbon fund for compliance buyers, the LCFP acts in a similar manner as a carbon fund. The LCFP is a large capital platform that intends to be comprised of several pools that purchase offsets from emission reduction projects tradable in the North American carbon markets (WCI, Ontario, Alberta). The LCFP intends to aggregate and sell offsets to compliance entities to help them meet compliance requirements through long-term contracts. The target of the LCFP will be large compliance entities (over 100,000 tCO₂e / year) and proposes to offer them large offset volumes, long-term contracts, a de-risked product and a “cost effective offsetting solution”.

²⁵ <https://www.climatetrust.org/carbon-investment-fund-launches/>

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Annex VII – IETA and ISDA Contracts

The International Emissions Trading Association (IETA) allowance and offset trading documentation for the secondary WCI market can be found via the following link:

<http://www.ieta.org/trading-documents>

- See 'California Emissions Trading Master Agreement', contains confirmation templates for allowances and offsets.
- Note that IETA is currently developing an Ontario annex.

The International Swaps and Derivatives Association (ISDA) allowance and offset trading documentation for the WCI market can be found via the following link:

<http://www.isda.org/publications/isdacommmderivdefsup.aspx#envprod>

- See 'Revised US Emissions Allowance Transaction Documents', and then the Annex and Confirmation.

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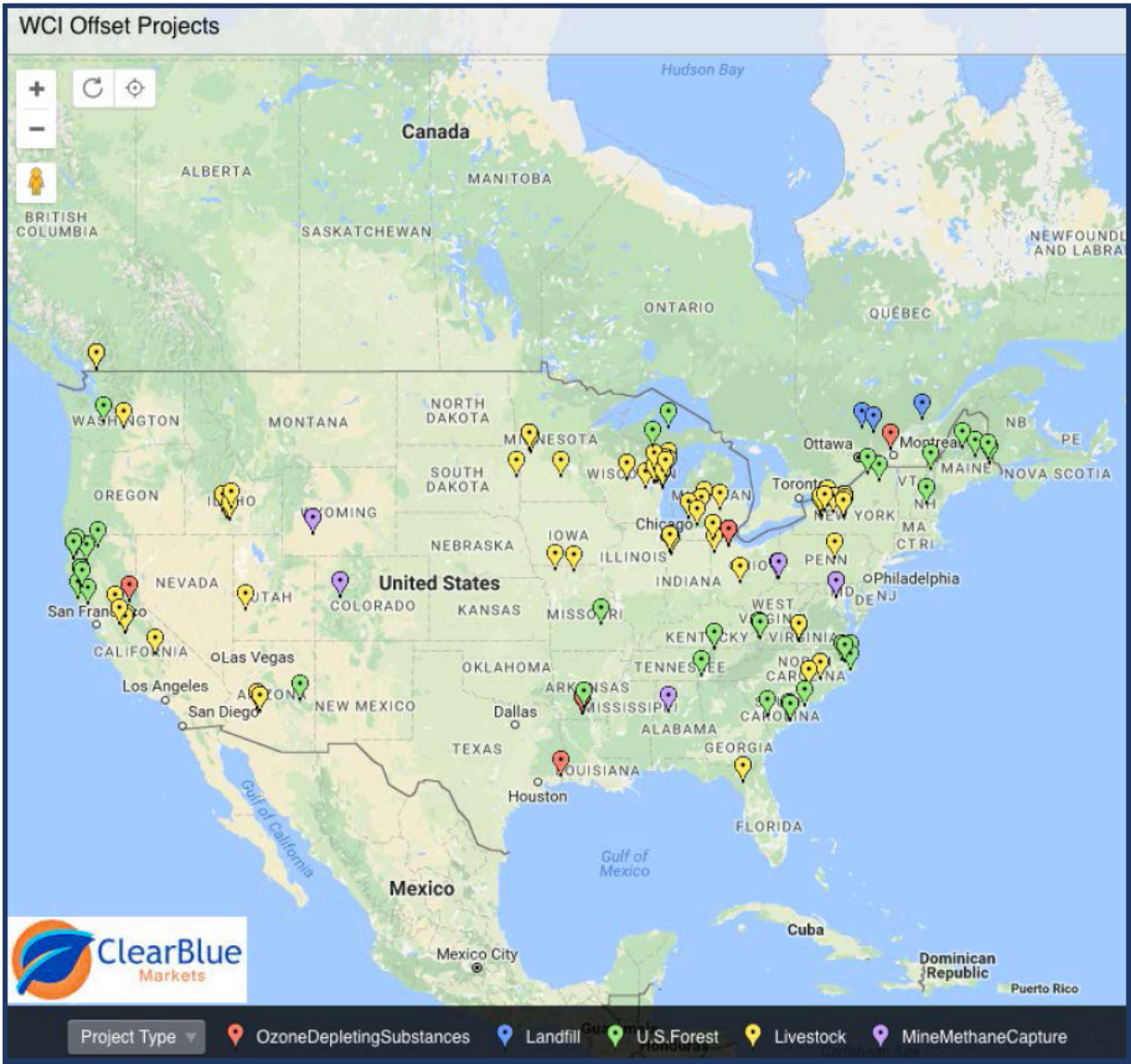
Offset Strategy

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Annex IX – WCI Offset Project Locations

Below is a map that indicates the location of each of the projects that have issued offsets under the WCI Cap & Trade program (i.e. both California and Quebec).



COMPLIANCE PLAN – ABATEMENT OVERVIEW

1. The Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities (the "Framework") recognizes that the natural gas utilities ("Utilities") have a number of compliance options available to meet their obligations under Ontario's Cap and Trade program. In addition to purchasing financial instruments, including allowances and offset credits, natural gas utilities can undertake GHG abatement measures to meet their compliance obligations.
2. Enbridge recognizes that Utilities are under a legal obligation to cover their emissions through the Cap and Trade program. The Utilities are statutorily mandated to procure allowances and offsets as part of regular business operations. Utilities are encouraged to take steps to reduce (abate) the emissions from their customers and from their own operations. This mandate is further articulated by the Framework which outlines several ways in which the Utilities may propose to meet their obligations which include: financial instruments (e.g. allowances, offsets), customer abatement (e.g. renewable natural gas ("RNG"), energy efficiency, fuel switching, new technologies), and facilities abatement (e.g. leak repairs, capital upgrades). In particular, at Table 2 of the Framework as shown below, the Board lists a number of Potential GHG Abatement Measures for consideration including:

Witnesses: S. McGill
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Measure	Applicability to Utilities
Customer abatement activities	Customer emissions
Renewable energy and fuel switching	Facility and customer emissions
New technologies	Facility and customer emissions
Building retrofits	Facility and customer emissions
Measures to mitigate and reduce fugitive emissions	Facility emissions
Biogas, renewable natural gas ¹	Facility and customer emissions

3. Furthermore, in the Board's EB-2016-0300 Decision and Order on Enbridge's 2017 Compliance Plan (p. 27), the Board encouraged Enbridge to consider abatement activities in future Compliance Plans.
4. In the Framework, the Board states that in its evaluation of the cost consequences of the Utilities' Compliance Plans it will consider whether the Utility has "engaged in strategic decision-making and risk mitigation," "whether the Utility has considered a diversity (portfolio) of compliance options" and "whether a Utility has selected GHG abatement activities and investments that, to the extent possible, align with other broad investment requirements and priorities of the Utility in order to extract the maximum value from the activity or investment."²
5. Given that the applicable costs of a Utility meeting its carbon obligations are included in the distribution costs of customers' bills, Enbridge has a responsibility to manage costs where possible, and provide cost effective service. This will become increasingly important as the cost of carbon inevitably increases due to the deliberate manner in which the Cap and Trade program has been structured. With

¹ Enbridge notes that biogas and renewable natural gas should be broadened to include renewable hydrogen and other renewable content as applicable for natural gas pipelines.

² Ontario Energy Board - Report of The Board: Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities, September 16, 2016, at page 21.

Witnesses: S. McGill
J. Murphy
F. Oliver-Glasford

the increasing cost of carbon and the increasing recognition of the value of avoiding GHG emissions, attractiveness of GHG abatement will evolve.

6. Enbridge is committed to providing solutions to help the Company and its customers reduce their emissions and thereby help Ontario reach its GHG emissions targets. Enbridge has developed and is implementing an Abatement Construct through which the Company is developing a number of GHG abatement opportunities. Some of the plans are ready for implementation, while others are still being investigated and formulated. As well, Enbridge's DSM activities will continue to make meaningful contributions to GHG abatement.
7. This evidence sets out the Abatement Construct approach that Enbridge is using to assess and implement these activities as well as the Company's related incremental resource requirements. Then the exhibit provides an overview and discussion of the Board's Marginal Abatement Cost Curve for Assessment of Natural Gas Utilities' Cap and Trade Activities (the "MACC") and the Board's Long-Term Carbon Price Forecast Report (the "LTCPF"). Enbridge's planned customer-related abatement activities are described in Exhibit C, Tab 5, Schedule 2. Enbridge's planned facilities-related abatement activities are described in Exhibit C, Tab 5, Schedule 3.

The Abatement Construct

8. As explained in the Compliance Plan Overview (Exhibit C, Tab 1, Schedule 1), Enbridge worked collaboratively with Union Gas Limited to outline an Abatement Construct to guide abatement initiatives which is expected to be subject of continuous improvement.
9. As outlined in Exhibit C, Tab 1, Schedule 1, the Abatement Construct outlines the sustainment model by which low carbon initiatives are sought, vetted, categorized

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and advanced with the ultimate goal of broad based implementation. Enbridge believes this construct will better enable abatement through setting common language and consistency in processes around which abatement initiatives can progress. This Abatement Construct in its entirety should increase the generation and implementation of abatement initiatives and therefore ultimately assist the Province in meeting its objective of a lower-carbon economy in a cost-effective, and economically sustainable manner. Enbridge believes the Abatement Construct is consistent with the Guiding Principles in the Framework, and with the stated GHG emissions reductions goals of the Government.

10. The Abatement Construct includes the following elements:

- Abatement program selection and screening criteria
- A four-phased “Initiative Funnel”
- A Low Carbon Initiative Fund (“LCIF”)

Abatement Screening Criteria

11. The Framework identifies “Guiding Principles” for the Compliance Plan. It also recognizes, as noted above, that longer term investments should be aligned with broader priorities. Therefore, Enbridge observes that abatement investments require complementary criteria to be applied in the assessment and selection of abatement programs that would be put forward as part of a Compliance Plan. Suggested abatement program selection and screening criteria for the Abatement Construct are outlined below:

- *Funding:* Abatement programs should be able to draw on a variety of funding sources, including Climate Change Action Plan (“CCAP”) funding, incremental amounts tracked through the Greenhouse Gas Emissions

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Impact Deferral Account (“GGEIDA”) and other Government funding (provincial or federal). Where appropriate, an abatement program proposal will be supported by an assessment which may use a range of funding models and appropriate valuations and assumptions. The assessment would use the best available information at the time but it is important that such information would not be reconsidered on a retrospective basis at the time cost recovery is determined.

- *Timely advancement of technology:* There must be recognition of the role natural gas utilities play in advancing the adoption of new technology over extended periods of time.
- *Support government targets:* Abatement programs will contribute towards the achievement of GHG emission reductions and/or meet the goals of related regulations.
- *Efficient and rational development:* Abatement programs should balance customer cost impacts by leveraging existing infrastructures (particularly utility infrastructure, including physical, brand, billing, program delivery) where appropriate and by not duplicating existing frameworks (e.g. DSM).
- *Respect appropriately modified regulatory constructs:* Abatement programs should manage customer cost impacts; adhere to cost causality (no undue cross-subsidization); use applicable valuations and appropriate costing (including marginal cost allocation where appropriate); and align with procurement and compliance guiding principles.

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12. In addition, when considering which initiatives should be pursued (and where the opportunities fit within the Initiative Funnel described more fully below), the following considerations may also be used:

- Market size – how meaningful can the technology/program be in reducing GHG emissions – both near and long term?
- Technological maturity – how quickly can the technology be brought to market?
- Market acceptance – What is the expected market uptake?
- Cost effectiveness – Do the current and projected costs of the technology/program compare favourably with or operate in conjunction with other options?
- Local content – Does the technology support or leverage Ontario's technology entrepreneurs?

13. Enbridge recognizes that abatement initiatives will develop, evolve and mature over time, particularly given the reliance on new and emerging technologies. In addition, there may be many concepts or ideas that Enbridge will investigate as abatement opportunities, with only some coming to ultimate fruition.

Abatement Initiative Funnel

14. Enbridge is using an "Initiative Funnel" approach to investigating, planning and implementing abatement activities through its Compliance Plan. The four-stage Initiative Funnel is depicted below and provides the basis under which abatement initiatives are categorized for purposes of discussion within the Company and in compliance planning.

Witnesses: S. McGill
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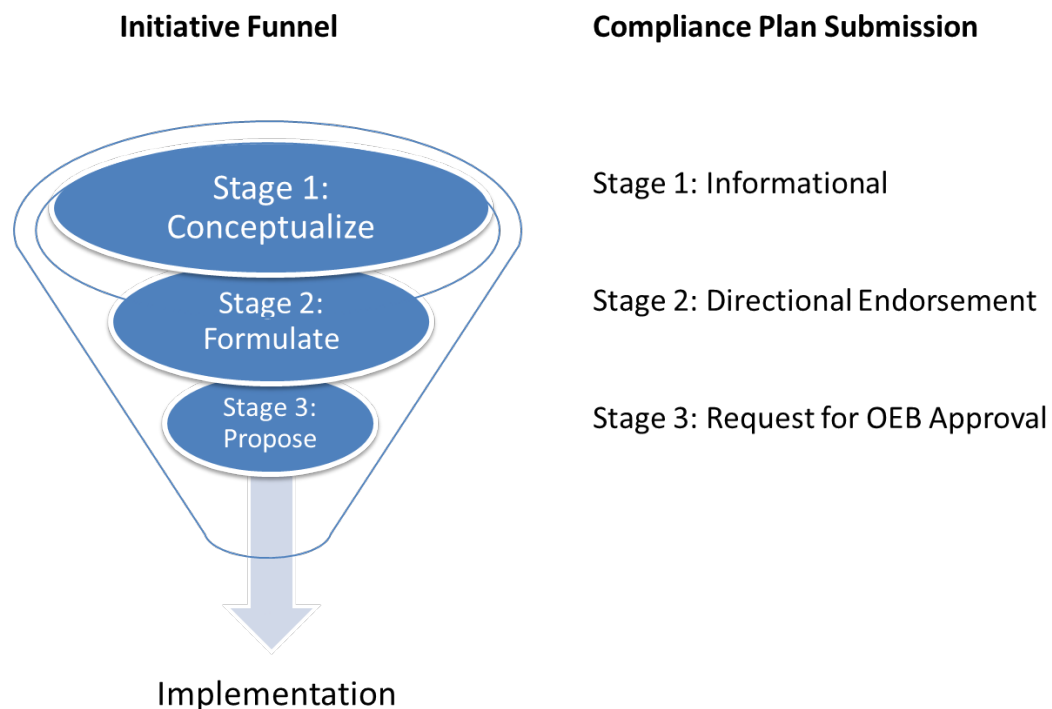


Figure 1: Compliance Plan Initiative Funnel

15. Enbridge's Initiative Funnel is comprised of four stages that initiatives will pass through. These stages are:

- Stage 1: Conceptualize – In this stage, technology and/or abatement ideas are identified and explored to determine applicability;
- Stage 2: Formulate – In this stage, technology and/or abatement ideas have received directional endorsement from the Company. Pilot programs or small scale development tests may be completed to prove the technology and its applications;
- Stage 3: Propose – In this stage, technology or abatement ideas and its applications have been identified along with the GHG reduction potential, and the Company is requesting specific approvals from the Board in the Compliance Plan or through other proceedings.

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- Stage 4: Implementation– This stage is the implementation of abatement initiatives and also captures existing abatement activity being undertaken by Enbridge including the Green Investment Fund (“GIF”) program.
16. It is possible that only some abatement initiatives would progress through the funnel to reach the Propose or Implementation stages. Progression of technology through the funnel will depend on a variety of factors such as commercial viability, technical feasibility and consideration of screening criteria listed above.
17. Initiatives that have received approval from the Board in Stage 3 will then proceed into the Implementation phase. Initiatives that have been implemented will be monitored and reported on through the Compliance Plan.
18. Enbridge’s Compliance Plans will provide details about the outcomes resulting from this “Initiative Funnel”, from concept through to specific proposals that require a decision from the Board in order to proceed. This type of presentation provides the Board with an indication of the state of advancement of each initiative and a reasonable expectation of the implementation timeframe associated with each potential opportunity.
19. Even where abatement program and implementation costs will not be incurred during the term of a specific Compliance Plan, providing information about prospective abatement activities in a Compliance Plan filing will offer the Board and stakeholders an opportunity to consider the direction of the Company’s future plans and to provide comments. This will provide Enbridge with input as plans evolve and greater certainty as to the acceptability of moving forward with the various abatement options. The scope and details of the initiatives that will fill the Initiative

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Funnel, and move through its various stages will ultimately be informed by, among other inputs, market signals, Government and Board policy, the MACC, the LTCPF, customer acceptance and technology development status.

20. Enbridge has included information at varying levels of detail for a number of potential abatement opportunities and activities that the Company currently has under consideration in Exhibit C, Tab 5, Schedule 2 (customer-related abatement) and Exhibit C, Tab 5, Schedule 3 (facility-related abatement). The degree of detail provided for each of these opportunities reflects the extent to which each one of these potential abatement activities has been examined by the Company at this time, consistent with the Compliance Plan Initiative Funnel approach.

The Low Carbon Initiative Fund and Abatement Resourcing Requirements

21. Each stage of Initiative Funnel activity will have associated resourcing requirements. The Company's budgets presented and approved in the Customized Incentive Regulation application did not contemplate Cap and Trade and carbon abatement activities. Therefore, in order to support and advance projects through the various stages of the Initiative Funnel, Enbridge will require incremental funding and dedicated resources.
22. For projects in the first three stages of the Initiative Funnel, the resourcing requirements shall be included as an administrative cost in the GGEIDA. For initiatives that have progressed out of Stage 3 and into the Implementation phase, costs would be identified and incorporated into the approved abatement activity.
23. The Low Carbon Initiative Fund ("LCIF") is proposed to enable the identification and development of GHG reducing technologies to progress into future abatement

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opportunities. The LCIF will provide Enbridge with access to up to \$2 million in available funds per year, starting in 2018, with only the actual costs being tracked in the GGEIDA.

24. The Company believes it must be able to anticipate a steady flow of funding in order to pursue innovative carbon abatement opportunities as well as to ensure the continued flow of ideas through the Initiative Funnel described above. The aim is that a consistent flow of funds should create a similarly consistent flow of new ideas and technologies into the Initiative Funnel thereby increasing the possibility of new viable abatement programs for implementation. This funding will allow Enbridge to advance pilot projects/demos and research to support a more comprehensive assessment of promising technologies and opportunities that could be evaluated in the Propose stage for full scale implementation. The LCIF may be used to support jurisdictional reviews, concept testing, pilot programs/demos and related measurement, analysis and validation. The LCIF is essential to pursue initiatives that may provide carbon abatement opportunities that help the Company reduce its carbon obligation, and aid the Government in meeting its provincial reduction goals.
25. Additionally, in some cases the Company will seek or has already endeavoured to supplement carbon abatement initiative costs with government funding. The LCIF will initially provide funding for Enbridge to better define each opportunity in order to successfully qualify for government grants. At the same time, pursuing pilot projects supported by a reliable funding source such as the LCIF will allow the Company to gain experience with integrating these products into the business and identify next steps necessary to enable a robust market solution.
26. Ontario's new 2017 Long-Term Energy Plan ("LTEP") acknowledges "Natural gas will continue to play a critical role in space and water heating, but we must use it as

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efficiently as possible and supplement it with the next generation of clean energy technologies, [such as ground-source and air-source heat pumps]”³. The LCIF will provide the means to accelerate innovative technologies necessary for the Province to meet its renewable energy and emissions reduction targets.

27. Enbridge will require two additional full time equivalent (“FTE”) employees to support the Company’s efforts to identify, formulate and begin to implement on new or expanded abatement activities within the Initiative Funnel. These two resources would be responsible for:

- An annual technology scan and related intelligence on new and emerging technologies for achieving GHG reductions;
- Making recommendations based on various abatement assessment criteria;
- Identifying and supporting the development of pilot projects;
- Managing and/or overseeing pilot projects administration and progress; and,
- Summarizing outcomes and making recommendation from pilot projects results.

These two resources are key to identifying and developing new abatement technologies and pilots to assist the Company in undertaking GHG abatement measures.

28. Enbridge estimates the 2018 cost associated with the two additional FTEs will be approximately \$350,000. These costs associated with these new FTEs have been included in in Enbridge’s evidence on Administrative Costs, found at Exhibit D, Tab 1, Schedule 1.

³ Ontario’s Long-Term Energy Plan 2017: Delivering fairness and choice, p. 109

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29. In order to have confidence that the costs associated with implementing and advancing the Abatement Construct are recoverable, Enbridge is requesting the approval (or a finding of reasonableness) of: (i) adding two new staffing resources related to the and low/no carbon technology assessment and deployment; and (ii) available funding of up to \$2 million for 2018 through the LCIF to pursue abatement initiatives. The costs for these activities would be recorded in the GGEIDA, such that Enbridge would only recover amounts actually spent. The Company anticipates that the LCIF amount would be funded annually, requested for future years through Compliance Plan submissions.
30. Resource requirements specific to the abatement initiatives identified for 2018 are further articulated in Exhibit C, Tab 5, Schedule 2 (customer-related abatement) and Exhibit C, Tab 5, Schedule 3 (facility-related abatement), and in the Company's evidence about Administrative Costs, found at Exhibit D, Tab 1, Schedule 1.

THE ROLE OF THE LONG TERM CARBON PRICE FORECAST AND THE MARGINAL ABATEMENT COST CURVE

31. In the Framework, the Board identified that a "long-term forecast of carbon prices is needed to effectively assess the reasonableness of [long term] investments", and that the "OEB will use this forecast to evaluate the cost-effectiveness of multi-year abatement programs and any longer-term investments that Utilities propose as part of a Compliance Plan".⁴
32. The Board retained ICF International ("ICF") to develop a LTCPF. On May 31, 2017 the Board released its first LTCPF, which provided a carbon price forecast for a 10 year period from 2018 to 2028.

⁴ Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities (EB-2015-0363), page 19.

Witnesses: S. McGill
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33. The LTCPF is broad demand/supply analysis out to 2018 which does not necessarily illustrate intra-year market fluctuations. As stated in the LTCPF, it is “intended to inform the utilities during the development of their compliance plans and to assist the OEB in its evaluation of the cost-effectiveness of utilities’ strategies for complying with the cap and trade program”. The Company sees the LTCPF as a useful guide that can be used to inform longer-term carbon abatement investment planning and recognizes it will be updated annually.
34. In the Framework, the Board identified a MACC study as “an essential input that the OEB expects all Utilities to use in developing their Compliance Plans”.⁵ The Board subsequently retained ICF, and convened a technical advisory group to develop a generic MACC to help inform natural gas utility Compliance Plans.
35. On June 21, 2017, Enbridge was provided with a draft version of the MACC study and the final report, “Marginal Abatement Cost Curve for Assessment of Natural Gas Utilities’ Cap and Trade Activities,” was delivered on July 20, 2017. The study is for the 2018-2020 period, and incorporates the Board’s LTCPF.
36. The MACC is intended to provide guidance on the most appropriate customer abatement opportunities. The goal of a MACC is to provide a prioritized visualization of carbon abatement options considering potential and costs of marginal abatement activities. The MACC developed by the Board provides one important input for the Utilities in assessing various tools to meet their compliance strategy. The opportunities outlined in the MACC include: energy efficiency and related low carbon technologies including heat pump technologies and RNG.

⁵ Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities (EB-2015-0363), pg. 20.

Witnesses: S. McGill
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37. Enbridge appreciates the work of ICF, stakeholders and the Board developing this first LTCPF and MACC study under condensed timelines. The Company has, time permitting, considered the LTCPF and the MACC in its Compliance Planning. Enbridge notes that the Board convened a group of stakeholders, called the Technical Advisory Group (the "TAG"), for review and input towards the development of the first LTCPF and MACC. Informed in part through TAG discussion, ICF suggested a series of recommendations for future iterations of the MACC. Enbridge feels it is necessary to raise three key items of consideration for the next MACC study.

- The first consideration is that MACCs are best suited to short-term planning because of changing inputs (such as changing technology costs, changing market place incentives on various technologies, and evolving policy).
- The second consideration is that the breadth of activities and technologies considered should be broader moving forward. And, where possible, consideration of the cost/benefit impacts of fuel switching should be integrated.
- The third consideration is that the visual representation of the MACC should clearly illustrate marginal activity. This ensures that the work done already is captured in the analysis, making the tool more readily useable by the utilities.

38. Enbridge considered the results of the LTCPF and MACC as one input to the degree that time permitted in developing its 2018 Compliance Plan filing. Enbridge made specific use of the Board's MACC study in the following ways:

Witnesses: S. McGill
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- Enbridge considered the guidance and information provided in the MACC study about energy efficiency programs to assess whether it should be expanding DSM programs. As described in Exhibit C, Tab 5, Schedule 2, Enbridge concluded that additional DSM programs would not be cost-effective; in some cases the marginal costs of new programs may be higher than the cost of compliance instruments.
- Enbridge used the information about RNG found in the MACC to consider and develop its proposal for RNG procurement. That proposal is discussed in Exhibit C, Tab 5, Schedule 2.

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COMPLIANCE PLAN – ABATEMENT ACTIVITIES – CUSTOMER

1. This evidence outlines Enbridge’s customer abatement activities for 2018 related to each stage of the Initiative Funnel discussed in Exhibit C, Tab 5, Schedule 1.
2. The Board notes in section 5.6 of the Framework that the introduction of abatement activities under the Cap and Trade program “creates the potential for significant overlap between existing DSM programs and future Compliance Plans.” The Board concludes that “The DSM Framework also includes a mid-term review provision (to be completed by June 1, 2018) that will provide an appropriate opportunity to assess the DSM Framework in light of the Cap and Trade program.”
3. Enbridge is committed to providing solutions to help its customers reduce their emissions and thereby assist Ontario in reaching its GHG emission targets. Some of this is being achieved through DSM programs, and some will be addressed through other customer abatement activities described in this Compliance Plan.
4. Given the evolving energy landscape and Government policies, Enbridge believes it remains in the best position to deliver reliable energy efficiency programs in the Province. Since the Government announced its Climate Change Action Plan (“CCAP”), the Company has been responsive to evolving Government objectives and has made several proposals to advance energy efficiency in the province.
5. Over the course of the past year, Enbridge has worked to advance the development of several new activities, initiatives and business opportunities that will have the potential to have a positive impact on carbon emissions associated with the Company’s core business. All of these initiatives relate in some way to the

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province's objective of reducing Ontario's carbon emissions as articulated in its Climate Change Mitigation and Low-carbon Economy Act, 2016 ("Climate Change Act") and the CCAP.

6. In terms of the "Initiative Funnel", some of these opportunities are in the Propose stage (or, in the case of DSM, beyond that stage) and ready to advance for implementation and/or approval in this 2018 Compliance Plan (or in other OEB proceedings). Some opportunities are in the Conceptualize and Formulate stages and are described in the 2018 Compliance Plan, but no project-specific approvals are being sought at this time.
7. Table 1 below identifies the customer abatement activities that Enbridge plans to pursue in 2018 indicating the stage of the Initiative Funnel that each has reached. The items that fall into Stage 3 ("Propose") are presented first, because these are the activities that Enbridge plans to implement in 2018.

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M. Lister
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F. Oliver-Glasford
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Table 1: Abatement Initiatives Summary

Initiative Development Stage	Initiative	2018 OEB Approvals Required
Stage 3: Propose	Renewable Natural Gas Procurement	Approval to procure RNG in 2018 as per the model identified in this exhibit.
	Natural Gas Renewable Enabling Program	Approval of new rates for RNG processing and injection, and approval to record deficiency and sufficiency in the applicable variance account. This program will be addressed in EB-2017-0319.
	Geothermal Energy Services Program	Approval of geothermal energy service fees and approval to record deficiency and sufficiency in the applicable variance account. This program will be addressed in EB-2017-0319.
Stage 2: Formulate	Hydrogen (Power to Gas)	Approval for 2 FTEs to support investigation, planning and project management activities, to be funded through the GGEIDA. Approval of funding of up to \$2M starting in 2018 in the Low Carbon Innovation Fund ("LCIF") to advance pilot projects and research throughout stages one to three of the Initiative Funnel that would enable a more complete assessment of promising technologies and opportunities for eventual implementation. The LCIF would be tracked through the GGEIDA.
	Net-Zero Homes/ Micro-Generation	
	Expanded NGV Program	
	Natural Gas Air-Source Heat Pumps	
Stage 1: Conceptual	Smart Metering	The LCIF would be tracked through the GGEIDA.
	RNG – Gasification	
	Carbon Capture	
Implementation / Existing Activity	Demand Side Management	Enbridge's 2015 to 2020 DSM Plan has already been approved in EB-2015-0029/49. The DSM mid-term review which as one component is assessing the interconnection between DSM and Cap and Trade is in progress (EB-2017-0127 and EB-2017-0129).
	Green Investment Fund Program	Enbridge's incremental residential energy efficiency abatement through the Green Investment Fund has been in place since 2016 and does not require an approval through this 2018 Compliance Plan.

8. The balance of this evidence sets out details about each of the customer abatement initiatives and activities set out in the above Table, organized by Initiative Funnel Stage. As with the Table, those items that fall into Stage 3 ("Propose") are presented first, as they are the activities that will be pursued during 2018.

Thereafter, information is provided about the Stage 2 ("Formulate") and Stage 1

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(“Conceptualize”) projects. The implemented or also referred to as existing customer abatement programs, DSM and Green Investment Fund (“GIF”), are discussed at the end of this Exhibit.

STAGE THREE (PROPOSE) PROJECTS

9. The projects that are at Stage 3 of Enbridge’s Initiative Funnel are activities that the Company plans to pursue and implement during 2018. The evidence below describes each of these initiatives, and the approvals that Enbridge requests for each.

Renewable Natural Gas Procurement

10. RNG is a potential Ontario natural gas supply source that offers environmental, economic and waste management benefits. RNG (also known as biomethane) is ungraded gas produced from organic waste, such as that found on farms, at waste water treatment plants, food processing facilities and in landfills. RNG has been identified as a significant GHG abatement opportunity in the Fuels Technical Report¹ prepared by Navigant Consulting Inc. on behalf of the Ontario Ministry of Energy and Climate Change (the “MOECC”), the Board’s Marginal Abatement Cost Curve (“MACC”), and now the province’s Long Term Energy Plan: Delivering Fairness and Choice (the “LTEP”)².
11. The LTEP was released on October 26, 2017³. In this plan the government reiterated its support for the advancement of RNG production and markets stating that it plans to invest proceeds from the auctions in the carbon market to help introduce RNG in the province. These investments are intended to help consumers

¹ Fuels Technical Report: Navigant Consulting Inc. on behalf of the Ontario Ministry of Energy and Climate Change (the “MOECC”), September 2016.

² Ontario’s Long-Term Energy Plan 2017 – Delivering Fairness and Choice.

³ Ibid.

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defray the cost of shifting to RNG, since RNG is expected to be more costly than conventional natural gas for the foreseeable future.

12. RNG has similar physical properties to conventional natural gas. Once upgraded to pipeline quality RNG can be comingled with traditional gas supplies in the pipeline system, thereby displacing traditional fossil based gas supplies. With respect to GHG emissions RNG provides benefits through; 1) emission reduction; and 2) fuel substitution. Emission reduction is achieved by capturing emissions of methane that would otherwise enter the atmosphere from landfills, the decomposition of organic waste and wastewater. The fuel substitution benefits results from the displacement of traditional fossil fuels. The source of RNG therefore has a significant impact on its carbon abatement potential and carbon offset value.
13. Over the past year Enbridge has given consideration to RNG from three main perspectives; 1) the procurement of RNG supplies for the purpose of reducing the Company's requirement to acquire carbon allowances or carbon offsets; 2) the advancement of RNG production in Ontario; and 3) supporting customer activities related to RNG and RNG production.
14. In its CCAP, the Ontario Government indicated that it would provide support to encourage the use of cleaner, renewable natural gas in industrial, transportation and buildings sectors. The CCAP, the Ministry of Energy's Fuels Technical Report and the LTEP all identify RNG as a significant contributor to the achievement of the Province's GHG emission reduction objectives.
15. In a letter dated December 10, 2016, Glenn Thibeault, Ontario's Minister of Energy, asked the OEB to examine the prospect of RNG becoming a component of

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Ontario's natural gas supply. The Minister also encouraged the OEB to move forward in a timely manner to include RNG as a means of helping to reduce GHG emissions by becoming part of the natural gas utilities' gas supply portfolios. The Board followed through on the Minister's request by identifying RNG as a key point of interest in formulation its upcoming Framework for the Assessment of Distributor Gas Supply Plans (the "Gas Supply Framework").

16. Enbridge is now ready to proceed with RNG procurement opportunities in 2018, and will look to purchase a portion of its annual gas throughput from renewable sources. The Company's planned activities to support RNG production in Ontario with its proposed RNG Enabling Program are discussed at a high level later in this Exhibit; however, will be fully outlined in the Company's EB-2017-0337 submission to the Board to be made later this year.
17. Since the early supplies of renewable pipeline fuel will be predominantly derived from waste streams, RNG can help reduce GHG emissions through both the displacement of conventional natural gas and also through the creation of carbon offsets that account for the capture of biogenic created methane that would otherwise have been vented to atmosphere as fugitive emissions. RNG development represents an innovative way for Ontarians to turn a waste product into a useful energy source and lower GHG emissions at the same time.
18. Many jurisdictions are ahead of Ontario in moving to RNG, and several models exist for delivering it to customers. European markets are actively developing renewable pipeline fuels through both RNG and Power-to-Gas ("P2G") developments. In North America, California, British Columbia and Québec have all moved forward with the

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early development and procurement of RNG to complement the renewable energy options that have traditionally been focused on the electricity grid.

19. The MACC⁴ prepared by ICF International, Inc. ("ICF") on behalf of the Board is intended to provide guidance in the assessment of natural gas utilities' Cap and Trade initiatives. The introduction of RNG supplies to the Ontario natural gas market was identified by ICF as a means by which the natural gas utilities could reduce future carbon allowance or offset purchase requirements as part of the formulation of its MACC.
20. ICF identified a range of carbon abatement costs associated with RNG in the range of \$77 to \$1,990 per tCO₂e. In its report ICF indicated that these values were based on a desk top review of studies dating back to 2011. In pages 50 to 53 of its report ICF also noted a number of limitations and caveats relating to its analysis of RNG potential and costs.
21. A key limitation concerning the economic value of RNG in the MACC report is that ICF does not take into account the potential sale of associated emissions reductions or offset credits that would be associated with avoidance of methane emissions to the atmosphere, which would instead be captured in the production of RNG. Also, the MACC report did not take into account the economic benefit resulting from the use of existing infrastructure and customer owned assets (furnaces, boilers, water heaters etc.) in the reduction of GHG emissions through the consumption of RNG.

⁴ Marginal Abatement Cost Curve for Assessment of Natural Gas Utilities' Cap and Trade Activities (EB-2016-0359): July 20, 2017, ICF.

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M. Lister
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22. The typical development timeline for RNG and P2G hydrogen projects is expected to range from 18 to 30 months. Some potential producers of renewable gas supplies are at the early stage of project development in anticipation of market opportunities developing in Ontario while others are closer to fruition. As a result, this 2018 Compliance Plan does not anticipate the introduction of significant RNG volumes into the Company's 2018 gas supply portfolio. However, Enbridge believes that renewable content will play an increasing role in future compliance plans as RNG production facilities are developed and brought into commercial operation.
23. As previously indicated, Enbridge is now ready to pursue RNG procurement opportunities in 2018, and will look to purchase a portion of its annual throughput from renewable sources in Ontario. The planned activities to support RNG production in Ontario encompassed in Enbridge's proposed RNG Enabling Program are longer-term in nature and will be presented in the Company's EB-2017-0337 submission to the Board.
24. As there is no established RNG market in Ontario, in order to ensure the lowest cost for RNG, Enbridge will utilize a tendering process for RNG supplies. Terms of the tendering process will be subject to pre-defined criteria. These criteria will include the volume of RNG to be purchased, the term of the procurement contracts, quality standards, identification of receipt points, etc. Enbridge expects that this process will be similar to that now employed to contract for the purchase of traditional natural gas supplies. Enbridge is of the view that it would be beneficial if this tendering process was carried out cooperatively with the Province.

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25. Biogas producers require longer term contracts in order to support capital investments in RNG production facilities. Enbridge is considering entering into RNG procurement contracts with terms of up to 10 years in duration. This approach is appropriate in that the province has determined that the development of RNG production facilities in Ontario is a significant aspect of its GHG emission reduction strategy. The Company is specifically seeking the Board's approval of the use of long term gas cost forecasts in respect of RNG procurement volumes in the derivation of the PGVA Reference Price, as well as the Board's acceptance of the Long-Term Carbon Price Forecast (the "LTCPF") as part of its RNG Procurement Model.
26. RNG Procurement and Funding: It is expected that in the short and medium term, RNG will be priced at a premium over conventional natural gas. The RNG funding model proposed by Enbridge will be consistent with the province's CCAP and LTEP. Enbridge plans to undertake the following steps in 2018 with respect to the procurement of RNG supplies:
- a. Conduct a rigorous RFP process to determine the cost, contract term and other RNG procurement agreement terms and conditions;
 - b. Negotiate and enter into a contractual arrangement between the Company and the Province whereby the Province agrees to compensate ratepayers for the difference between the cost of the RNG purchased and the carbon abated cost of natural gas. The latter will be determined by summing the forecast cost of traditional gas supplies over the term of the RNG procurement contract with the Board's LTCPF mid-range forecast carbon cost applicable for each respective year of the same time period;
 - c. The forecast cost of traditional gas supplies will be determined by the use

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of a forward price forecast covering each year of the RNG procurement contract using discoverable forecast market prices available at the time negotiations around a contract for Provincial funds are conducted;

- d. Subject to receiving approval for the use of the forecast commodity and carbon cost methodology in this proceeding and successful negotiation of contract terms and funding, the cost implications related to RNG procurement will be incorporated in future proceedings relying upon existing rate setting mechanisms (i.e. QRAM, Compliance Plan).
27. The Company's two main objectives in its RNG procurement proposal are; 1) to enter into an arrangement for Provincial funds that provides both the Province and the Company with a large degree of certainty as to the level of government support for RNG procurements over the life of the underlying RNG procurement agreements; and 2) to provide RNG at a cost comparable to the cost of natural gas inclusive of the cost of carbon over the term of RNG procurement agreements.
28. Table 2 below illustrates how the Company's proposed RNG procurement model will work.

Table 2: Renewable Natural Gas Procurement Funding Model

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 9	Year 9	Year 10
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
(a) Forecast Cost of Traditional Gas Supplies (\$/GJ) ¹	\$ 3.69	\$ 3.45	\$ 3.42	\$ 3.43	\$ 3.46	\$ 3.59	\$ 3.65	\$ 3.73	\$ 3.82	\$ 3.86
(b) Forecast Cost of Carbon: Mid-Range LTCPF (\$/GJ) ²	\$ 0.85	\$ 0.90	\$ 0.90	\$ 0.95	\$ 1.00	\$ 1.05	\$ 1.56	\$ 1.81	\$ 2.16	\$ 2.51
(c) Required Provincial Subsidy (\$/GJ) ³ (c) = (d) - (a) - (b)	\$ 11.46	\$ 11.65	\$ 11.68	\$ 11.61	\$ 11.53	\$ 11.35	\$ 10.79	\$ 10.46	\$ 10.02	\$ 9.63
(d) Assumed Cost of RNG (\$ / GJ)	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00

Notes:

1) Long term natural gas price forecast; Enbridge CDA.

2) Assumed Cost of Carbon = OEB Mid-Range LTCPF.

3) Required Provincial subsidy must be secured by contract based on life of RNG procurement contracts.

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29. In this hypothetical example the contract price for a ten year supply of RNG is assumed to be \$16.00 per GJ. The forecast cost of gas is shown in row a) ranging from \$3.42 to \$3.86 per GJ. The forecast cost of carbon is the OEB / ICF Mid-Range carbon price forecast. Row (c), the required Provincial subsidy amount equals the Assumed Cost of RNG, minus the WACOG and Cost of Carbon.
30. It should be understood that based on the expected level of Provincial funding, the initial round of the RNG RFP process is likely to capture less than 0.1% of the Company's annual gas volume requirement. This proposal will allow the Company to achieve the two main objectives previously noted. As well, the launch of the RNG Procurement Program as articulated in this submission will also provide for the establishment of RNG price and volume data that will inform future policy and support the broader introduction of RNG volumes into the province's gas distribution system.
31. This RNG procurement model will provide for:
- a. The acquisition of competitively priced RNG supplies.
 - b. Entry into long term RNG supply agreements necessary to support investment in Ontario RNG production facilities.
 - c. RNG to become part of the Company's gas supply portfolio with little potential for additional costs for the account of customers beyond what they would otherwise face in Ontario's Cap and Trade environment.
32. To conclude, the Company is seeking the Board's endorsement of this RNG procurement model as part of its 2018 Cap and Trade Compliance Plan. The Company will bring forward the results of the RFP process after the RNG tendering

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process and funding negotiation are complete, for incorporation into rates under existing regulatory approval processes when RNG begins to flow.

RNG Enabling Program

33. With respect to the advancement of RNG production in Ontario, Enbridge sees that it can play an important role as a facilitator that can assist RNG producers in the process of upgrading raw untreated biogas into pipeline quality RNG and the injection and transportation of this gas to market. To that end, Enbridge is proposing the “RNG Enabling Program”.
34. Enbridge provided details about the RNG Enabling Program in evidence originally filed in the 2018 Rate Adjustment Application (EB-2017-0086). The Board’s Letter of Direction in that case directed Enbridge to remove that evidence from the Rate Case and instead file the “cap and trade related proposals” in a standalone application (EB-2017-0319) which will not be processed until after the Decision and Rate Order in the 2018 Rate Adjustment case is issued. Enbridge plans to file this standalone application in due course.
35. Therefore, while Enbridge is providing brief evidence about the RNG Enabling Program in this Compliance Plan proceeding for information purposes, Enbridge is not seeking any approval or other relief related to the RNG Enabling Program in this proceeding.
36. Over the course of the past eighteen months, the Company has conducted discussions with several municipalities and other potential RNG producers with respect to the services Enbridge could provide to accelerate the development of RNG production capacity in its service area. Enbridge believes that it can provide

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services that will support the growth of RNG production which will facilitate lower cost RNG to supply market demand.

37. This dialogue has led the Company to develop the RNG Enabling Program which is based on utility investment in RNG upgrading and injection equipment. The Company proposes to offer RNG upgrading services on an optional basis. As such RNG producers will have the choice of upgrading biogas to pipeline quality themselves or having Enbridge perform this function for them. All RNG producers who wish to use Enbridge's distribution system to transport RNG will have to contract with Enbridge for RNG injection services. This will enable the Company to meet its basic responsibilities as a distributor of natural gas and ensure the safe and reliable distribution of RNG to market.
38. Given Ontario's current GHG reduction objectives, supporting legislation and regulatory framework, the RNG Enabling Program (like the Geothermal Energy Service program discussed below) is an appropriate utility activity. Both programs over their respective lifetimes will reduce the number of Cap and Trade allowances that the Company will need to procure and hence lower the compliance costs for its existing and forecasted customers. The activity is captured within the scope of the Undertakings between the Company and the Province. The associated utility investments will significantly contribute towards the attainment of Ontario's GHG emission target reductions by displacing the consumption of natural gas in the Company's service area while having minimal effect on Enbridge Gas Distribution rates.
39. For the RNG Enabling Program, Enbridge will seek approval of Rates 400 and 401, to recover the costs to serve customers. These rates will be set on a project-

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specific basis, so that the projects attain a PI (profitability index) equal to or greater than 1.0 (applying the principles set out in the EBO 188 Guidelines). This approach will ensure that the recipients of the RNG Enabling Service will pay the full cost of these programs. Existing ratepayers are not harmed and will benefit over the life cycle of these programs.

40. Enbridge recognizes that in applying the EBO 188 principles there will be a deficiency in terms of the revenues versus the costs of the program in the early years. However, in later years there will be a sufficiency in terms of the revenues versus the costs of the program. As time goes on and the assets' net book value decreases, the associated assets will deliver annual revenues in excess of their revenue requirements thereby returning and to some extent exceeding the revenue deficiency underwritten by ratepayers in the early years.
41. While the program will be part of the Company's regulated business activities and constitute carbon abatement activities, the best methodology to address their utility revenue requirement implications over their asset lives will be to treat the annual utility revenue sufficiencies and deficiencies associated with these programs as costs of carbon abatement.
42. Enbridge proposes that these differences (deficiencies in early years and sufficiencies in later years) be captured within the Greenhouse Gas Emissions Compliance Obligation-Customer-Related Variance Account ("GHG-Customer VA") and be periodically cleared to ratepayers. The recovery of these amounts through the GHG-Customer VA is appropriate because the objective of these initiatives is to reduce GHG emissions associated with natural gas deliveries and customers' consumption of natural gas.

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Geothermal Energy Services

43. Enbridge provided details about the Geothermal Energy Program in evidence originally filed in the 2018 Rate Adjustment Application (EB-2017-0086). As noted earlier, the Board's Letter of Direction in that case directed Enbridge to file the "cap and trade related proposals" in a standalone application (EB-2017-0319) which will not be processed until after the Decision and Rate Order in the 2018 Rate Adjustment case is issued. As already noted, Enbridge plans to file this standalone application in due course. Enbridge is providing brief evidence about the Geothermal Energy Program in this Compliance Plan proceeding for information purposes. As with the RNG Enabling Program, Enbridge is not seeking any approval or other relief related to the Geothermal Energy Program in this proceeding.
44. Ground source heat pump heating and cooling systems ("geothermal systems") are typically electrically powered, are highly efficient and do not release GHG emissions. A ground-source heat pump uses the earth or ground water or both as the sources of heat in the winter, and as the "sink" that stores heat removed from the home in the summer. Geothermal systems can be used with forced-air and hydronic heating systems. They work by transferring heat from and into the earth by circulating a liquid, such as ground water or an antifreeze solution, through a closed loop of pipe via a heat pump system. During heating season the heat pump system extracts heat from this liquid and uses that heat is used to heat indoor air. This process is reversed during summer months when heat is removed from indoor air and transferred to the earth by the ground water or antifreeze solution.
45. Geothermal systems have been readily available in Ontario for a number of years; however, the adoption of this technology has been hampered by high initial cost

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compared to other building heating/cooling technologies and a disparate and fragmented contractor base. These factors have resulted in low market penetration of ground source heating and cooling systems and less than desirable levels of customer satisfaction with this technology.

46. As in the case of RNG, the adoption of ground source heating systems has been identified by the province as means of abating GHG emissions associated with building heat. The province's CCAP identifies geothermal heating as another measure that intends to promote as part of its effort to achieve its GHG emission reduction targets.
47. Enbridge has been active in discussions with the Ontario Geothermal Association ("OGA") and the MOECC to find solutions that will overcome these barriers faced by the geothermal industry which will lead to further the adoption of ground source heating and cooling systems. The solution that Enbridge has developed is a utility service that combined with financial support from the Province's Green Ontario Fund will make this technology cost competitive compared to more traditional building heating and cooling alternatives.
48. Enbridge's proposed Geothermal Energy Service program is focused on making geothermal systems more broadly available and implemented for customers who would otherwise be using natural gas for space and water heating. Under the Geothermal Energy Service program, Enbridge will own and maintain geothermal loops at customers' homes and the customers will own the heat pump and other geothermal system equipment. This approach will make geothermal technology cost competitive compared to more traditional building heating and cooling alternatives (natural gas space and water heating combined with electric air

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conditioning) because customers will be able to receive financial support from the Green Ontario Fund, and will pay for the use of the geothermal loops over time.

49. To calculate the Geothermal Energy Service program service fees, Enbridge has built a Discounted Cash Flow ("DCF") model using a 10 year customer forecast, estimates of capital, operating costs and taxes, applying the principles set out in EBO 188. This approach ensures that the PI for the program is equal to or greater than 1.0, so that existing ratepayers are not harmed and will benefit over the life cycle of the program thereby adhering to the 'Respect applicable regulatory constructs' criteria by adhering to cost causality.
50. The Company's 10 year customer forecast was based on several factors including expected demand for geothermal systems (which will be driven in part by a Green Ontario Fund Geothermal Rebate program), current capacity in the market, and ramp-up capability of the market to meet future demand. The Company expects about 170 customers in 2018 and over a period of 10 years a total of about 18,000 customers.
51. As is the case with the RNG Enabling Program, there will be an early year deficiency and later year sufficiency associated with the Geothermal Energy Services Program. Enbridge proposes that these differences (deficiencies in early years and sufficiencies in later years) be captured within the GHG-Customer VA and be periodically cleared to ratepayers.

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S. McGill
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STAGE TWO (FORMULATE) PROJECTS

52. The projects that are at Stage 2 of Enbridge's Initiative Funnel are activities that the Company plans to closely review and begin to implement (perhaps on a pilot project basis) during 2018.
53. Enbridge will report on its activities and progress and future plans for each of these Stage 2 initiatives within its next and future Compliance Plan submissions to the OEB.
54. Set out below is a description of each of the Stage 2 projects, noting that incremental costs associated with each project are required from the LCIF, and incremental workload require the applicable incremental FTEs along with an indication of the LCIF funding that will be required in 2018 to advance the project.

Power to Gas

55. Power to Gas ("P2G") energy storage can help Ontario integrate more renewables into the larger energy economy. In Ontario, many occurrences exist where renewable electrons are wasted, such as the curtailment of wind power, the spilling of water over hydroelectric dams without generating electricity and nuclear generation exported at low or zero prices. With P2G, this electricity can instead be used to produce hydrogen gas. The hydrogen gas can then be injected into the natural gas system as a way of increasing the renewable content, and decreasing the carbon content of the gas, within the pipelines that supply homes and business with thermal energy.
56. The hydrogen produced can also be used to generate electricity during periods of high electricity demand, effectively converting a proportion of the province's natural

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gas storage infrastructure to an electricity storage asset. Hydrogen produced by P2G can complement Ontario's supplies of both RNG and electricity, while helping to decarbonize the province's energy infrastructure.

57. Enbridge has partnered with a P2G manufacturer to demonstrate that this technology can provide ancillary services to the IESO-controlled market as early as 2017. This service can help the IESO integrate more renewable generation into the province's electricity system. It is expected that by 2019 or 2020 hydrogen blending could contribute to the Company's renewable content requirements as part of future Cap and Trade Compliance Plans.
58. In 2018, Enbridge will further evaluate the opportunity to blend hydrogen into its existing gas infrastructure. This will include research into what has been accomplished in other jurisdictions (primarily Europe) and working with North American companies (through the Canadian Gas Association and American Gas Association) to develop test protocols that will lead to the development of industry standards. Enbridge will also research and develop hydrogen pipeline standards for transportation of pure hydrogen to blending sites within the Company's existing gas network. The additional staffing resources requested will coordinate this work and continue the research into hydrogen gas blending and other opportunities for hydrogen within the low carbon economy. LCIF money will be expended on working with consultant research around the remaining steps required for advancing the introduction of hydrogen into the energy market.

Net-Zero Ready Homes

59. Net-Zero Ready ("NZR") homes continue to gain attention in the new construction market and are becoming an increasingly achievable option for home buyers. NZR

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homes are designed and constructed to reduce household energy to a minimum; in the extreme producing more energy than they consume, reducing overall GHG emissions and relieving pressure on the electricity and gas systems.

60. An important factor to considering determining components within NZR homes is the ability to reach the desired decrease in long-term energy consumption that aligns with government targets without negatively impacting cost, comfort or customer choice.
61. Enbridge would leverage funds from the LCIF to greatly expand on a NZR home pilot that was launched in 2017 in partnership with an LDC and Municipality. The pilot involves testing variations of hybrid heating concepts and other embedded power generation platforms in an effort to validate achievable GHG reductions. Preliminary modelling of existing homes has shown that the thermal assets under consideration for these concepts have the ability to save 2.25 tCO₂e per year. The 2018 expansion pilot project would entail piloting 10 homes to test additional variations of components to help achieve Net Zero readiness. Based on the current pilot, estimated GHG savings could therefore be approximately 22.5 tCO₂e per year. This expanded pilot would help reduce timelines towards commercialization of NZR homes as testing and validation of savings would be greatly accelerated.
62. One of the components within the Net Zero program is a Micro Generation unit. Similar to larger cogeneration systems, these units use natural gas to generate electricity and produce heat as a by-product, however on a smaller scale they can be used in residential and small commercial applications.

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M. Lister
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63. According to NRCan, the average Canadian home only exceeds 1.5kW electrical consumption about 15% of the time. As a result, the optimum Micro Generation size for the average Canadian for residential use is in the 1-1.5 kW range. For several years, Micro Generation has been commercially utilized around the world most particularly in Europe and Japan, with only recent entry to the North American market. There are currently a very limited number of manufacturers that produce Micro Generation units producing less than 5kW.
64. Enbridge's calculations show that in Ontario, a 1.5kW Micro Generation unit can generate GHG reductions of 0.7 to 1 tCO₂e annually by operating the unit during peak periods, to offset grid connected gas powered generation plants. With estimated market penetration in year one being 500 units, this would equate to a total abatement opportunity in the first year of (500 x 0.7 tonne) = 350 tCO₂e, growing to a total of 875,000 tCO₂e over 10 years (125,000 units x 0.7 tCO₂e x 10 years).
65. For 2018, Enbridge will engage in pilot projects across Ontario for new and retrofit single detached homes using the current 1.5kW Micro Generation units that are available while also working with manufacturers to aid in the production of additional products in the 1-1.5kW range. The work plan involves using pilot projects to demonstrate that Micro Generation can help transform the market to a lower carbon economy.

Natural Gas Air Source Heat Pumps/Integrated Option

66. Enbridge will expand its work with vendors and/or other interested parties in the pursuit of developing natural gas heat pumps which will result in lower emissions while providing a cost effective alternative to electric heat pumps for customers.

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Enbridge will also support the integrated approach which includes electric heat pumps in the Net Zero program discussed above.

67. The focus in 2018 will be to conduct field tests to quantify actual savings and provide performance data vs. energy efficient furnaces as well as electric heat pumps. The initiative will also encourage and support other manufacturers to invest in new product development. The aim of that research is to develop competitively priced natural gas heat pumps specifically for the residential market. Field tests of prototypes will be required to ensure real life performance and address any barriers at the pre-commercialization stage. The GHG savings could range from 0.8 – 1.5 tCO₂e per year by installing a natural gas heat pump instead of new ENERGYSTAR gas furnace in a home.

68. As above, the incremental costs associated with this project and required from the LCIF include field tests and research described above.

Expanded Use of Natural Gas as a Vehicle Fuel

69. In partnership with the Government, the Company plans to increase the use of natural gas for vehicles used in activities such as waste collection, trucking, and transit. It should be noted that while this initiative will see total natural gas throughput volumes, and therefore the Company's Cap and Trade obligation, increase, GHG emissions in the province will decrease significantly as natural gas displaces diesel, which is a more carbon intensive fuel. The province has committed up to \$270 million in their CCAP to "increase the use of low-carbon trucks and buses", which includes but is not limited to those powered by natural gas.

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70. The Ontario Trucking Association projects 5,100 natural gas powered long haul trucks on the road by 2020 if the CCAP funding is implemented, which would result in a GHG reduction of almost 90,000 tCO₂e per year. There are approximately 10,000 transit buses operating in Ontario. If one third of these were operated on natural gas the GHG reduction would be about 45,000 tCO₂e per year. These initiatives could help Ontario reduce GHG emissions by 135,000 tCO₂e per year. Enbridge believes that it will have to work with the various associations and governments to ensure that this market transformation works.
71. Enbridge plans to focus on developing the large transport truck market within Ontario. Projects could include specialized research and development to further develop market receptiveness to natural gas vehicles and specialized small demonstration projects with small fleets.

STAGE ONE (CONCEPTUALIZE) PROJECTS

72. The projects that are at Stage 1 of Enbridge's Initiative Funnel are activities that the Company plans to investigate and potentially advance during 2018. The evidence below describes each of Enbridge's "Conceptualize" stage initiatives.
- a. Smart Metering: Under typical smart metering plans for utilities the benefits have tended to focus on economic drivers such as reduced meter reading costs. As part of the net-zero market developments, stakeholders like Natural Resources Canada have identified a need for dual-fuel (hybrid) heating systems that are both electrical heat pumps and high-efficiency natural gas systems which are integrated in a home. These hybrid heating systems hold the potential to reduce GHG emissions from home heating while preserving affordability and energy resiliency. To

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further increase the benefits, Enbridge has identified an opportunity to integrate smart metering platforms with the dispatch control of hybrid heating systems. The control would switch between electricity and gas input energy supplies in such a manner as to maximize GHG reductions while minimizing the utility bill impact for consumers. Early pilots that demonstrate the integration of hybrid heating with smart metering are expected in 2018.

- b. Gasification: As noted with respect to the Company's RNG Procurement Plan it is expected that the early adoption of renewable content in Ontario's natural gas system can be met with biogas originating from organic waste. Over the medium-term, increasing the supplies of renewable content will require the commercialization of promising technologies. Solutions can include biomass conversion to RNG through gasification. It can also include harvesting carbon dioxide, from industrial processes, to upgrade into RNG by incorporating green hydrogen with a catalyst. In effect, this becomes a means of recycling carbon dioxide back into a renewable fuel to displace volumes of conventional natural gas. This becomes a way of achieving deep decarbonization within natural gas pipeline systems.
- c. Carbon Capture: In support of achieving lower carbon emissions, Enbridge will actively pursue/support technology development around carbon capture in all sectors of the economy. The initiative would include a market scan of existing technologies/limitations, development/leveraging of strategic partnerships as well as financial support for vendors to develop new technologies that can achieve up to 100% carbon capture.

Witnesses: A. Chagani
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EXISTING CUSTOMER ABATEMENT PROGRAMS

73. The following sections outline existing customer abatement programs that will continue to be implemented in 2018, and do not require approval in this proceeding.

Demand Side Management ("DSM")

74. DSM is a very important means by which Enbridge will continue to assist the Government in meeting emissions reductions targets. The Company continues to offer a broad range of DSM programs through its 2015-2020 Multi-Year DSM Plan. For clarity, the volumetric impacts attributable to OEB approved DSM activity for 2018 are reflected in the volumetric forecasts upon which the Company's Cap and Trade compliance obligation planning is based.
75. An analysis of the MACC study results as compared to the Company's DSM plans shown in Table 3 below indicates that Enbridge's current DSM Plan delivers results for ratepayers that are well in excess of what the MACC study would otherwise indicate is cost-effective under a Mid-Range LTCPF scenario. At present, Enbridge does not have sufficient insight into the underlying analysis of the MACC study to fully understand what is driving the clear differences between the MACC study results, the Conservation Potential Study results and the Utilities' DSM Plans. At a minimum this analysis serves as a reminder that in designing and deploying DSM to date, Enbridge has been aggressive in its pursuit to reduce volumes and emissions through the most cost-effective opportunities available.

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Table 3: MACC Potential vs. DSM Plan⁵

Customer Segment	Province-Wide Gross Savings in MACC Study (Mid-Range LTCPF) (m ³)	Net Savings ⁶ (m ³)	% of Potential in EGD Franchise	Net Potential in EGD Franchise as per MACC (m ³)	DSM Plan as originally filed in EB-2015-0049 (m ³)
Residential	97,000,000	82,450,000	62%	51,119,000	56,224,675
Commercial	99,000,000	83,160,000	58%	48,232,800	169,335,715
Industrial	96,000,000	48,000,000	44%	21,120,000	
Total	196,000,000	165,610,000	-	120,471,800	225,560,390

76. In the Framework, the Board also acknowledges that offering customer abatement programs “creates the potential for significant overlap between existing DSM programs and future Compliance Plans... [However, the Board] is confident that any potential overlap can be appropriately addressed through the robust Evaluation, Measurement & Verification (“EM&V”) process of the DSM Framework.”⁷ The Board further clarifies that any “customer-related GHG abatement activities must be incremental to the Utilities’ 2015-2020 multi-year DSM plans (EB-2015-0029/49)”.⁸

77. Enbridge shares the Board’s concern regarding the potential for overlap between existing DSM and additional energy efficiency programs under the banner of Cap

⁵ Values shown are annual savings taking place by the end of the year 2020. These values will include the sum of recurring annual savings achieved as a result of efforts in 2018, 2019 and 2020 respectively.

⁶ Freeridership values applied are 15% for residential, 16% for commercial and 50% for industrial as filed in EB-2014-0354, Exhibit B, Tab 1, Schedule 2, page 9. Commercial freeridership has been determined as a simple average of 12% freeridership in the commercial sector and 20% freeridership in the multi-residential sector.

⁷ Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities (EB-2015-0363), Section 5.6.

⁸ Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities (EB-2015-0363), Section 5.3.1.1.

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and Trade Compliance Plans⁹ and believes that managing any overlap via the EM&V process will be overly complex and difficult. Enbridge notes that because the Company's Cap and Trade obligation is specific to emissions associated with natural gas volumes, practically speaking the "targeted programs" referenced in the Cap and Trade Framework would take the same approach as existing DSM programs. Whether titled "DSM" or "abatement", the activities in question would use a combination of consumer education, technical expertise, and financial incentives to help customers reduce their natural gas consumption.

78. As indicated in the Company's DSM Mid-Term submission (EB-2017-0127/0128), the Company believes the Board has an opportunity to ensure that the existing DSM Framework does all that it can to support a level of abatement activity that produces the best value for ratepayers. Enbridge believes that in light of the new policy environment, certain features of the DSM Framework should be enhanced to ensure that DSM activity is maximized to meet the needs of ratepayers moving forward.
79. The Company's submission in the DSM Mid-Term Review outlined the requirements to achieve this end. Briefly, the Company maintains that value for ratepayers will be maximized by aligning the Cap and Trade and DSM Frameworks. To achieve this, ratepayer and shareholder benefits should be aligned, ensuring that both realize meaningful benefits through the aggressive reduction of energy use and GHG emissions. The proposed outcomes outlined in the Company's DSM Mid-Term Review submission represent the best available opportunities to achieve this alignment and maximize benefits for all parties:

⁹ EB-2016-0300 Exhibit C, Tab 3, Schedule 4, page 2.

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- i. Modernize the approach to calculating and applying net to gross values to reflect the complex policy environment created by Cap and Trade;
- ii. Re-align DSM budgets and targets to recognize the increased need for a robust DSM presence in the energy efficiency market as a result of Cap and Trade; and
- iii. Align the timing and magnitude of benefits as between shareholders and ratepayers by revising the weighted scorecard incentive formula, maintaining the annual incentive cap of \$10.45 million per utility approved by the Board.

80. In summary, the Company believes that DSM should be considered a vital part of its overall long-term Compliance Plan. This is especially so where the results from incremental conservation and energy efficiency are known to be more cost effective over the long term than the purchase of compliance instruments. Enbridge reviewed the MACC relative to current DSM targets and found that all cost effective savings are already captured.

Green Investment Fund Residential Energy Efficiency

81. In 2016 Enbridge entered into an agreement with the Ministry of Energy ("MOE") to offer an advanced home energy audit and retrofit program over the course of three years through the Green Investment Fund ("GIF"). The primary objective of this program is to help homeowners save on their energy bills year after year while also reducing overall GHG emissions. The whole home retrofit program was designed to be similar to Enbridge's existing DSM offer, the Home Energy Conservation program, and is available to all Ontario homeowners regardless of primary fuel type. In addition, the funding was also meant to increase the deployment of the Adaptive

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Thermostats offer, also consistent with the Company's DSM program, as well as funding to pursue educational and behavioural-based GHG reductions.

82. As captured in the volume forecast found in Exhibit B, Tab 2, Schedule 1, the incremental volume reduction coming from GIF in 2018 is anticipated to be 5,559 10^3m^3 which equates to 10,420 tCO₂e.

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COMPLIANCE PLAN – ABATEMENT ACTIVITIES – FACILITY

1. Enbridge recognizes that abating Greenhouse Gas (“GHG”) emissions from its own operations helps the province reach its GHG emission targets, and can also be a tool to reduce the Company’s overall Cap and Trade compliance obligation.
2. Enbridge is committed to identifying and reviewing opportunities to reduce its operational GHG emissions; however, the Company notes that the facility-related obligations only represent 1% of its total obligation under the Cap and Trade regulation, and therefore the potential abatement opportunities present smaller GHG savings than the customer-related abatement opportunities.
3. Enbridge notes some facility-related GHG abatement activities that it may undertake will reduce overall emissions in Ontario, but may not impact on the Company’s own Cap and Trade compliance obligations. As an example, energy efficiency initiatives that reduce the Company’s use of electricity do not reduce its Cap and Trade obligation, though they do help to reduce provincial emissions on an overall basis. Additionally, initiatives such as natural gas vehicles (“NGV”) may increase the Company’s emissions from natural gas, however, these can lower emissions from use of other types of fuel (in the case of NGV this would be diesel and gasoline).
4. Table 1 below identifies the facility-related abatement initiatives that Enbridge plans to pursue, indicating the stage of the Initiative Funnel that each has reached. The stages of the Initiative Funnel are discussed in Exhibit C, Tab 5, Schedule 1.

Witnesses: J. Murphy
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Table 1: Abatement Initiatives Summary

Initiative Development Stage	Initiative	2018 OEB Approvals Required
Stage 1: Conceptual	Portable Booster Compressor	Approval for 2 FTEs to support investigation, planning and project management activities, to be funded through the GGEIDA. Approval of funding of up to \$2M starting in 2018 in the Low Carbon Innovation Fund ("LCIF") to advance pilot projects and research throughout stages one to three of the Initiative Funnel that would enable a more complete assessment of promising technologies and opportunities for eventual implementation. The LCIF would be tracked through the GGEIDA.
	High Bleed Pneumatic Devices	
	Building Efficiency Improvements	
	Natural Gas Air Source Heat Pump	
Implementation / Existing Activity	Existing Facility Abatement Initiatives	None

Stage One (Conceptual) Initiatives

5. As outlined in EB-2016-0300 (Exhibit C, Tab 3, Schedule 5), in 2016 Enbridge developed a multi-department team to discuss abatement opportunities for facility-related GHG emissions related to distribution and storage operations. This team developed a list of potential abatement opportunities; however, this work did not include quantifying the emission reduction potential, costs or feasibility of the opportunities identified.
6. Enbridge has undertaken a study in 2017 to review the electricity and natural gas use, and the resulting emissions, from the operations of six of its office buildings. This study has identified potential abatement opportunities and has suggested several initiatives that can be explored over the next five years. The results of any abatement initiatives that are implemented at these six buildings will be evaluated and incorporated as applicable to the Company's other facilities.

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7. In 2018, Enbridge intends to review the following initiatives that were identified by the work conducted in 2016 and 2017. These initiatives have been identified as those that are most likely to assist the Company in achieving GHG reduction on sources of emissions that are covered by Cap and Trade:
- a. Portable booster compressor: Enbridge has previously purchased a portable booster compressor, which is used to transfer natural gas out of a pipeline segment that requires isolation into another pipeline segment. This is done to reduce the amount of natural gas that is vented to the atmosphere. In 2018, the Company will undertake an assessment of the use of this technology in order to identify its current limitations and required improvements, with the goal to maximize its use where possible to avoid venting natural gas. As part of this initiative, Enbridge will do a scan of other technologies that can be used to reduce pipeline venting emissions to determine if alternative solutions exist.
 - b. Pneumatic devices: Enbridge has already removed many high bleed pneumatic devices from its distribution system. In 2018, Enbridge will review the remaining high bleed pneumatic devices to determine if low or no-bleed alternatives could be installed in a cost effective manner.
 - c. Building efficiency improvements: As a result of the study on its energy efficiency and emissions from office buildings, Enbridge will be undertaking a review of operational improvements to ensure current building systems are operated in an efficient manner that reduces natural gas use.

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- d. Natural gas air source heat pumps: The study on energy efficiency and emissions from office buildings has identified natural gas air source heat pumps as a potential abatement opportunity at the Company's office facilities. As discussed in Exhibit C, Tab 5, Schedule 2, Enbridge intends to conduct field tests on natural gas air source heat pumps for residential applications. In 2018, Enbridge will review the outputs from this customer-related abatement initiative to determine the applicability for replacing natural gas boilers at its own office buildings, and other Company owned-facilities.
8. To pursue the initiatives described above, Enbridge will make use of the incremental FTEs and Low Carbon Initiative Fund ("LCIF") that are discussed in Exhibit C, Tab 5, Schedule 1.
9. The initiatives identified above will be reviewed in 2018 to determine if they can be advanced to either Stage 2 (Formulate) for pilot scale testing or Stage 3 (Proposal) for full scale implementation. The results of these initiatives will be reviewed in future Compliance Plans submissions as appropriate.

Existing Facility Abatement Initiatives

10. Enbridge has previously completed several key projects that have reduced facility-related GHG emissions to 20% below what they were in 1990. This includes the complete replacement of cast iron pipe, replacement of pneumatic controllers, and efforts to reduce fugitive emissions through damage prevention and improved leak survey and leak repair programs.

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11. Enbridge has also undertaken initiatives that, although they do not reduce the Company's Cap and Trade compliance obligation, have led to an overall reduction in its direct and indirect GHG emissions. Examples include Enbridge's fleet of over 600 natural gas vehicles, building and renovating the Company's buildings to LEED certification requirements, energy conservation measures and the installation of a turboexpander to generate clean electricity for the Company's head office.
12. Through ongoing participation in industry committees, such as the Canadian Energy Partnership for Environmental Innovation ("CEPEI"), the Company continues to work to better understand and refine the estimates of fugitive and venting emissions on its gas distribution and gas storage systems. Better estimation methods lead to improved accounting for methane emissions, which are a portion of the Company's unaccounted for gas.
13. As part of Enbridge's asset management program, ongoing asset replacement and upgrade projects are undertaken. Often the projects and programs under consideration have the added benefit of reducing gas loss from distribution assets and therefore reduce GHG emissions. Enbridge has initiated updates to its asset management process to enable the review of the GHG reduction potential of projects and take into account the cost of GHG emissions (using the Board's Long-Term Carbon Price Forecast).
14. Projects that are included in Enbridge's current asset management program that result in the greatest reduction of GHG emissions include:
 - a. AMP fitting replacement program;
 - b. Meter set replacements; and
 - c. Vintage steel replacement program.

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15. Cumulatively, these three projects are estimated to reduce annual GHG emissions by approximately 800 tonnes CO₂e each year.

Abatement Required Under Federal Methane Regulation

16. Enbridge is staying abreast of the evolution and possible requirements from the proposed “Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)” (the “Methane Regulation”), which is still in a consultation phase. Once the final Methane Regulation is posted in Canada Gazette II, Enbridge will work to identify the specific abatement initiatives that are required in order to comply with this complementary climate change regulation by the required timelines. In the interim, the Company is taking the following steps to become ready for the Methane Regulations:
- a. In late 2017, Enbridge will conduct leak detection surveys at its gas storage compressor stations to identify leaking components, as required under Ontario’s GHG reporting regulation. In 2018, Enbridge will review the results of the survey to determine if any repairs are required. The Company will begin to develop formalized leak detection and repair (“LDAR”) program. This initiative will prepare Enbridge for compliance with the LDAR requirements under the Methane Regulations.
 - b. In late 2017, Enbridge will conduct surveys of the rod packing emissions from each of its reciprocating compressors, as required under Ontario’s GHG reporting regulation. In 2018 the Company will review the results of the survey to determine if any maintenance is required.

Witnesses: J. Murphy
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RISK MANAGEMENT – IDENTIFICATION AND MITIGATION MEASURES

1. This evidence discusses Enbridge's overall risk management approach, and includes identification and discussion of the specific risks applicable to Enbridge in the carbon market for 2018, along with planned mitigation measures to address the risks. Where the analysis and mitigation measures specific to a particular risk are confidential, redactions have been made.

Overall Risk Management Approach

2. As set out later in this evidence, Enbridge has evaluated the specific risks associated with meeting its Cap and Trade obligations, and has developed mitigation strategies to address each one. More generally, however, the Company has developed broad policies, procedures and approaches to identify and manage risks associated with meeting compliance obligations.
3. Enbridge's Carbon Procurement Governance Group ("CPGG") is charged with overseeing the implementation of Enbridge's Compliance Plan. The CPGG is responsible for reviewing natural gas sales volumes and resulting emissions, carbon market information, and implementing adjustments to Enbridge's carbon procurement strategy. To ensure that the strategy meets the OEB's Guiding Principles, it will be reviewed periodically throughout the year. Enbridge's Compliance Plan provides the flexibility to adjust its procurement plans to reflect changes in market conditions and other relevant factors. Any adjustments will be subject to Enbridge's internal governance processes and will be recorded as required in the Company's annual monitoring report to the Board. For additional

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information regarding specific details of the CPGG refer to EB-2016-0300, Exhibit C, Tab 1, Schedule 1.

4. Flexibility in the Company's Compliance Plan strategy in combination with closely monitoring the carbon regulations and markets will ensure Enbridge achieves its compliance obligations and the OEB's Guiding Principles. A focus on market intelligence and market involvement results in: 1) cost effectiveness and procurement optimizations by monitoring supply and demand dynamics; 2) rate predictability by positioning the Company to meet its compliance obligations; 3) cost recovery as the Company is able to demonstrate it acted diligently in understanding and responding to market information; 4) flexibility by Enbridge being knowledgeable of market conditions and regulatory changes to adapt its compliance strategy; and, 5) continuous improvement through an increasingly expert group of resources inside the Company around carbon markets, related policies and Cap and Trade sustainment.
5. As discussed in EB-2016-0300, the Company has developed a Risk Management document. This document was prepared in collaboration with Enbridge's Risk, Carbon Strategy and Legal groups. The document was reviewed and approved by the CPGG and then provided to Enbridge's Compliance Financial Risk Management Committee ("CFRMC") for approval. The Risk Management document, which is strictly confidential in nature, provides input and insights into the Company's procurement strategy.

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6. The Company's Risk Management document sets out the compliance instruments that the Company deems to be acceptable from a risk perspective. Enbridge notes that this document will be updated, as required, to reflect factors such as, but not limited to, market conditions, compliance instrument availability and general market knowledge. The Risk Management document was previously filed in EB-2016-0300 and is filed for reference as Appendix A to this Exhibit.
7. The Risk Management document contains a Delegation of Authority section, which specifies the maximum amount that an individual can purchase based on their rank within the Company. In addition to providing control over such actions, this also addresses operational risk by ensuring there is no purchase that is administratively inaccurate or cannot be completed.
8. Furthermore, the Risk Management document contains an Operational Risk procedures section to identify and attempt to mitigate any operational type. It should be noted that due to the nascent state of the markets, both primary and secondary, these Operational Risk procedures are subject to change.
9. Enbridge introduced at the start of 2017 and will continue in 2018 with the 'Plan-Do-Check-Act' cycle for the implementation of its Compliance Plan. This cycle will assist the Company in identifying new risks and ensuring that new and existing risks are recognized and effectively mitigated.
10. The Company will stay abreast of changes to regulations and market conditions through a number of activities, which may include, but are not limited to, attending conferences, establishing relationships with market players, seeking consulting or

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legal support where required, subscribing to carbon market intelligence platforms, involvement in Cap and Trade associations and/or committees in various applicable industry associations, reading relevant Cap and Trade market articles, and actively staying involved in policy stakeholder processes to support the interests of ratepayers. Understanding market behavior and the impact of regulatory changes will assist the Company in making appropriate and timely risk-based decisions around its strategy.

Discussion of Specific Risks

11. An understanding of the risks inherent to Ontario and the broader Western Climate Initiative ("WCI") Cap and Trade markets is important to ensure flexibility is built into Enbridge's Compliance Plan in order to address these risks. Through risk identification, Enbridge will be able to implement risk management programs proactively. Enbridge has been actively taking steps to identify risks, with the Board's Guiding Principles foremost in mind. The fewer unmitigated risks, the greater probability of Enbridge's Compliance Plan achieving the Board's Guiding Principles. Exhibit C, Tab 2, Schedule 1, Table 2, shows how Enbridge's selected procurement strategy mitigates risk against each of the Guiding Principles.
12. In the Framework, the Board has identified that the following risks must be discussed in the Compliance Plan:
 - a. allowance price variability;
 - b. volume variability;
 - c. emission unit availability;
 - d. market risk; and
 - e. non-compliance.

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13. For clarity, Enbridge has defined market risk as risks present due to the design of the Cap and Trade market.
14. Enbridge has identified additional risks that it believes are applicable for discussion within the Company's Cap and Trade Compliance Plan. They include:
- f. financial transaction risks;
 - g. risk of data dissemination to market participants;
 - h. operational risks; and,
 - i. offset specific risks.
15. The following sections provide details on the risks that have been identified by the Board as well as the additional risks identified by Enbridge. The details about Enbridge's analysis of each risk, and the mitigation measures to address each risk, are found below (where the information is confidential, it has been redacted).

Allowance Price Variability – Risk Identification

16. The price of an emission allowance in 2018 may vary as a result of many factors, most notably the following:
- i. Fluctuation in currency exchange, inflation and interest rates;
 - ii. Price differences between auction and Over the Counter ("OTC") markets; and
 - iii. Regulatory changes in the California Cap and Trade program.

Each of these items is discussed in the following paragraphs.

17. The auction reserve price, also referred to as the floor price, is set by the greater of the Ontario, California or Québec floor prices. Provided that the emission

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allowance price is set by the California auction reserve price, exchange rate fluctuations will result in allowance unit price variability. This is a risk embedded into the Ontario Cap and Trade program where costs are converted to Canadian dollars ("CAD") from US dollars ("USD").

18. The Consumer Price Indices for Ontario, United States, and Québec are inputs into the derivation of the annual auction floor prices for Ontario, California and Québec, respectively. As such, a significant change in an inflation rate will alter the floor price of an emission allowance. Due to federal government policies in both Canada and the United States, the risk associated with significant fluctuations in inflation is minimal. Inflation rate risk is inherent to all market participants. Following the establishment of the annual auction floor price, market dynamics and foreign exchange rates are the primary factors that affect the price of an allowance.
19. As evident historically in the WCI market, there were periods where the price of emission allowances on the OTC market traded both above and below the floor price. This is an example of pricing differences that may result in emission allowance price variability.
20. Changes to the California Cap and Trade program design or regulations (such as those being discussed for post-2020) could also impact the price of emission allowances in the joint WCI markets.

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Allowance Price Variability – Analysis of Risk and Mitigation Measures

21. In the Framework (page x), the Board requested that the Utilities conduct scenario analysis on the price of emission units, including foreign exchange rate risk.

22. As discussed in Exhibit C, Tab 3, Schedule 1, Enbridge obtained updated 2018 carbon price forecasts [REDACTED]

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

23. Due to the recent confirmation of linkage of the Ontario and WCI market, and California's regulatory changes, these price scenarios are no longer appropriate. Enbridge obtained an addendum to this report, which provides [REDACTED] price forecast; however, does not include revised scenarios.

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

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Table Deleted

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[REDACTED]

[REDACTED]

[REDACTED]

30. Enbridge has obtained [REDACTED] foreign exchange rate forecast for 2018. These forecasted foreign exchange rates have been provided in Exhibit C, Tab 3, Schedule 1, Table 2.

31. For illustration purposes, between May 1, 2007 and April 28, 2017, the lowest exchange rate was 0.9215 and the highest was 1.4559, based on Bank of Canada nominal closing exchange rates.¹ Current exchange rates remain between these extremes.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Table Deleted

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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33. As can be seen in Table 2, the exchange rate can have a significant impact on the total annual cost of compliance.

[REDACTED]

35. Enbridge intentionally requested that its third party carbon market Consultants provide forecasts in USD. The Company sought the ability to incorporate its consensus foreign exchange rate forecast. In the development of the Company's procurement strategy, it took into account the consensus forecasted exchange rates (see Exhibit C, Tab 3, Schedule 1).

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

Volume Variability – Risk Identification

40. Volume variability is primarily attributed to the following factors:
- a. weather, measured in heating degree days (“HDD”);
 - b. decrease in throughput as a result of pricing signals from carbon costs or gas costs (e.g., price sensitivity);

[REDACTED]

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- c. decrease in throughput due to demand side management (“DSM”) programs including incremental energy efficiency programming (e.g., Green Investment Fund (“GIF”) activity) and changes to codes and standards;
 - d. change in the number of Cap and Trade program participants;
 - e. increase in throughput as a result of community expansion, incremental customer additions and uptake of natural gas as a transportation fuel; and,
 - f. changes in demand by natural gas fired power generators.
41. As a result of all of the factors listed above that may cause volume variability, Enbridge’s Customer-related greenhouse gas (“GHG”) emissions could vary from the forecast provided in Exhibit B, Tab 3, Schedule 1.
42. Natural gas demand is influenced by a number of factors, most notably weather. Gas prices are another factor that may impact demand. Details on the derivation of the 2018 gas volume forecast can be found in Exhibit B, Tab 2, Schedule 1.
43. To the extent that actual weather in 2018 differs from the assumed weather conditions embedded within the volumetric forecast, significant swings in actual volumes and emissions generated could be realized.
44. Enbridge’s volume variability may also be impacted by new and existing DSM initiatives, implementation of the GIF-funded and other abatement programs, electrification projects and de-carbonization technologies, changes to building codes and standards and execution of the government’s Climate Change Action

Witnesses: A. Langstaff
J. Murphy
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Plan. The successful implementation of any or all of the above initiatives will result in volume variability.

45. Variability from Enbridge's forecast volume included in Exhibit B, Tab 2, Schedule 1 may also arise if the number of customers who are capped participants changes from those that were known at the time the forecast was developed. This could occur, for example, as entities decide to individually manage their own compliance obligations, and opt-in to the Cap and Trade program as voluntary participants. Additionally, if RNG is procured and injected in the system in place of conventional natural gas in 2018, then emissions will decrease. If and when these things occur, Enbridge's compliance obligation will decrease.
46. Enbridge has used a list of known capped participants from the Ministry of the Environment and Climate Change ("MOECC") and also reached out to potential opt-in customers in order to subtract volumes forecasted for capped participants. This list is current as of September 2017; however, voluntary participants may register for participation in Ontario's 2018 Cap and Trade program up to December 31, 2017.
47. Any initiative that increases Enbridge's aggregate in-franchise natural gas usage could increase volume variability. For example, customer additions, community expansion and an increase in the use of natural gas as a transportation fuel could increase Enbridge's natural gas throughput if such increases more than offset reductions in existing customer usage. The impact of such initiatives is not expected to be material in 2018.

Witnesses: A. Langstaff
J. Murphy
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48. As per the Regulation, Enbridge has compliance obligations for emissions from in-franchise natural gas fired power generators. Enbridge notes that approximately 4% of its customer-related GHG emissions are derived from natural gas fired power generators served within its franchise area. Volumes are varied and less predictable than Enbridge's average customer, due to their large usage and because natural gas fired power generators are dispatched by the Independent Electricity System Operator ("IESO") as needed. Volumes may also be impacted by nuclear power refurbishments, which may increase natural gas use by power generators.
49. In the development of Enbridge's 2018 volume forecast, Enbridge requested annual forecast volumes from the power generators in its franchise area. Most of these power generators supply and balance their daily natural gas requirements, and provide Enbridge with daily nominations as required. The Company notes that there is no contractual mechanism or rate class parameters for natural gas fired power generators on an unbundled distribution rate to comply with annual forecasts.

Volume Variability – Analysis of Risk and Mitigation Measures

50. In the Framework, the Board has requested that the Utilities conduct volume variability scenario analyses. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: A. Langstaff
J. Murphy
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[REDACTED]

[REDACTED]

[REDACTED]

Table Deleted

[REDACTED]

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Witnesses: A. Langstaff
J. Murphy
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Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

Emission Unit Availability – Risk Identification

58. Reduced emission allowance availability could be a result of several factors, including:

- a. Cap and Trade program design; and,
- b. participation of market participants.

Each of these items is discussed in the following paragraphs.

59. Enbridge understands that the 2018 cap for Ontario was set by the MOECC to match the forecasted province-wide GHG emissions for the sectors covered by Cap and Trade in 2017, less the annual cap decline factor. While Enbridge is not privy to all of the details underpinning the government's forecasting methodology, the Company recognizes that there is some inherent risk in all forecasting. As such, it is possible that the cap will actually be lower than actual emissions and demand may be much higher than anticipated. This could happen in particular due to an increase in heating fuel use across the province, and therefore an increase in emissions, due to a colder winter than forecast. Enbridge recognizes, however, that linkage with the WCI market will provide a larger availability of allowances.

60. Greater participation by banks, insurance companies and other speculators as market participants may also reduce emission unit availability at auction. Each market participant may purchase up to four percent of available allowances at auction.

Emission Unit Availability – Analysis and Mitigation Measures

61. An analysis of the supply and demand economics of the WCI Cap and Trade market, including Ontario, is included in the carbon market price forecasts, filed (confidentially) at Appendix A to Exhibit C, Tab 3, Schedule 1.

Witnesses: A. Langstaff
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[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

64. As for mitigation measures, as explained in the Overall Risk Management Approach section above, Enbridge will monitor the Cap and Trade market and adjust its compliance strategy as necessary.
65. Enbridge recognizes that its compliance obligation may change should a change in natural gas volumes occur. The flexibility of the Company's strategy in conjunction with the ongoing planning and governance processes will assist in mitigating any potential impact.

Witnesses: A. Langstaff
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Market Risk – Risk Identification

66. Market risk could be realized due to several factors, including:

- a. change in carbon policy;
- b. Cap and Trade and GHG reporting regulation changes; and,
- c. linkage with other markets.

Each of these items is discussed in the following paragraphs.

67. It is anticipated that in 2018 there will be an Ontario election. Cap and Trade has been introduced to the Ontario market by the current Liberal government. Signals from the Progressive Conservative party indicate an interest in moving from Cap and Trade system to a Carbon Tax policy. If for any reason Cap and Trade was discontinued by the government in 2018, any carbon allowances purchased may be devalued or possibly rendered useless. Although the Company has identified this risk, beyond staying abreast of the Progressive Conservative's policy platform and associated plans, there may be no way to reasonably or fully mitigate this outside risk. Enbridge finds it difficult to believe that there would not be a time horizon or grace period rendered to any businesses that have participated thus far.

68. More generally, Enbridge recognizes that future changes in the Regulation, and any associated regulations, could impact the Company's compliance obligation, costs to comply and ability to comply with the Cap and Trade program.

69. For example, Enbridge has identified the potential (in future years) for GHG emission forecast changes as a result of the inclusion of new emission sources, or adjustments to calculation methodologies, default emission factors and global warming potentials ("GWP") in the Ontario GHG reporting regulation. Any

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adjustment will impact the number of emission allowances required for the compliance period. This risk is similar to that of volume variability.

Market Risk – Analysis of Risk and Mitigation Measures

70. As discussed in Exhibit C, Tab 6, Schedule 1, Enbridge will remain current on changes to the Cap and Trade and GHG reporting regulations. To ensure this, Enbridge will continue to maintain a close relationship with the MOECC so that it will be included as a stakeholder during discussions about future regulatory changes. Enbridge also actively participates in industry associations such as Canadian Energy Partnership for Environmental Innovation (“CEPEI”) to remain current on GHG reporting.
71. Enbridge has calculated that if the Global Warming Potentials (“GWP”) values provided in Ontario’s GHG reporting regulation⁸ change to values that have been published more recently by the Intergovernmental Panel on Climate Change (“IPCC”)⁹, then Enbridge’s compliance obligation would remain materially the same.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁸ <https://www.ontario.ca/laws/regulation/090452>

⁹ For information on GWPs, refer to <http://ghginstitute.org/2010/06/28/what-is-a-global-warming-potential/>

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Non-Compliance – Risk Identification

74. Non-compliance occurs when a capped participant does not hold an adequate number of emission allowances in its compliance account for the compliance period, to meet its carbon compliance obligation. If an entity is short allowances relative to its obligation, it will be required to procure those allowances at the market price. Additionally, the entity will be also be assessed a penalty of three allowances for each allowance that it is short at the time of remittance. These additional penalty allowances will have to be procured at the market cost.
75. Non-compliance could occur as a result of any number of the risks that have been identified or others that have not yet been identified.
76. The Cap and Trade program design is such that participants do not need to surrender allowances to the government until the end of the compliance period. For the first compliance period of 2017 to 2020, Enbridge will be required to surrender allowances totaling its 2017 to 2020 cumulative emission compliance obligation, by November 1, 2021. This is done by placing the appropriate amount of allowances into the Company's Compliance Instrument Tracking System Service ("CITSS") compliance account.

Non-Compliance – Analysis and Mitigation Measures

77. As noted above, the cost of non-compliance is three allowances for every one allowance short. In other words, if Enbridge did not hold sufficient allowances at

Witnesses: A. Langstaff
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the end of the compliance period, the Company would need to purchase four allowances for each allowance it was short. Additional administrative monetary penalties may also apply¹⁰.

[REDACTED]

79. Enbridge recognizes that Cap and Trade is a compliance requirement, and therefore the Company has mitigated against the risk of non-compliance through the development of a robust and flexible procurement strategy. Furthermore, Enbridge's governance structure for the Cap and Trade program will minimize the risk of non-compliance through proper and diligent oversight of emission allowance transaction and reporting. Governance with respect to the Compliance Plan is discussed in Exhibit C, Tab 1, Schedule 1.

Financial Transaction Risks – Risk Identification

80. Enbridge has identified counterparty credit risk as the primary financial transaction risk when dealing with external parties.

Financial Transaction Risks – Analysis and Mitigation Measures

81. Through its experience with natural gas procurement, Enbridge has developed relevant procedures that will be used in the event of counterparty allowance

¹⁰ Details of the planned framework for "Administrative Penalties" were set out in a Discussion Paper issued by the MOECC on September 24, 2017.

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procurement. These procedures will minimize counterparty credit risk.

82. Enbridge's Carbon Emissions Trading Agreement for bi-lateral transactions includes a clause for credit requirements. The Company's credit policies for carbon transactions will be based on its credit policies in place for natural gas procurement.

Risk of Data Dissemination to Market Participants – Risk Identification

83. In order to avoid "tipping,"¹¹ Cap and Trade participants are prohibited under the Act from disclosing information, including, but not limited to, future or past participation in auctions, bidding strategies, the amount of a participant's bids and financial information.
84. Enbridge recognizes that it is a large Cap and Trade participant and any dissemination of information regarding Enbridge's procurement strategy or auction participation could cause prices on the Cap and Trade market to go up. Even a very modest increase in allowance prices could cause noticeable increases in Enbridge's costs that are passed on to ratepayers.

Risk of Data Dissemination to Market Participants – Analysis and Mitigation Measures

85. It is difficult to determine the impact that disclosure of data could have on the market without knowing the specifics of the data disclosed and the available uses that such data might offer to the recipient. This being said, Enbridge recognizes that the impact could be financial and detrimental to ratepayers and should therefore be carefully avoided.

¹¹ Section 29(5) of the Act refers to tipping as informing 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 emission allowance or credit.

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86. To mitigate against the risk of improper disclosures of market sensitive information the Company has established appropriate internal controls. A restricted group of employees will be privy to the carbon procurement strategy and planned future or past auction participation. While this group of people will be as small as possible, the Company notes that employees in key departments such as Finance, Law, and Regulatory Affairs, will have access to certain aspects of the Company's Cap and Trade strategy or auction participation. All employees who are granted access to Cap and Trade strategy and auction participation will be required to confirm their obligation to treat the auction and market confidential information with the upmost sensitivity.
87. More generally, the Company recognizes the importance of confidentiality with respect to its Cap and Trade activities. Internally, the Company has developed training to explain the Cap and Trade program along with its confidential aspects and implications. New employees who have access to or knowledge of Enbridge's Cap and Trade file will be required to review this training material.

Offset Risks – Risk Identification

88. The following risks are associated with the procurement of offset credits:

- a. volume delivery risks;
- b. operational risks; and
- c. invalidation risks.

Each of these items is discussed in the following paragraphs. The Company notes that the influence of the above mentioned risks depends on the type of offset (i.e.,

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primary¹² or secondary¹³) procured.

89. Volume delivery risk arises from the inability of an offset project sponsor to deliver the contracted amount of offsets on an agreed upon date. This risk is mainly associated with primary offset projects, where a contract for the offset credits may be in place before the project is operational and its results verified. Volume delivery risks are less likely to be of concern through the purchase of secondary offsets.
90. Similar to volume delivery risk, operational risks are primarily associated with primary type offsets. Operational risk may result from improper, insufficient or inaccurate measurement of the GHG abatement capacity of a specific project. Operational risks are not considered to be material for secondary offset projects.
91. As noted in Enbridge's 2017 Compliance Plan submission, some offset credits available in the California Cap and Trade market can be subject to invalidation risk. The California Air Resources Board ("ARB") notes that, "...[it] may implement its invalidation provisions if it finds that an ARB offset credit does not meet the requirement of the Regulation."¹⁴
92. Based on the draft Ontario Offset Credits Regulation published by the MOECC on October 4, 2017, Enbridge understands that purchasers of Ontario offset credits will not bear invalidation risks. As is the case in Québec, under the proposed Ontario Regulation, it will be sponsors of offsets that are later invalidated who will have to replace those credits.

¹² Exhibit A, Tab 5, Schedule 1

¹³ Ibid

¹⁴ https://www.arb.ca.gov/cc/capandtrade/offsets/arboc_guide_regul_conform_invalidation.pdf

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Offset Risk – Analysis and Mitigation Measures

93. Enbridge notes that the offset market in Ontario is not yet launched and is still uncertain as the protocols and applicable Regulations have not yet been finalized. At this point, the only draft protocol that has been published relates to landfill gas. Once finalized, Enbridge will seek to evolve its understanding of the risks.
94. As detailed in Exhibit C, Tab 1, Schedule 1, Enbridge has retained ClearBlue to develop an offset strategy. ClearBlue's team has multiple years of experience in offset project development, origination and trading. This strategy along with additional support from ClearBlue will assist Enbridge in gaining experience and the 'know-how' to mitigate the above mentioned risks from its offset portfolio.

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Witnesses: A. Langstaff
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EGD Carbon Procurement Appendix (Parameters)

April 10, 2017

[Table of Contents deleted]

EGD Carbon Procurement Appendix (Parameters)

April 10, 2017

Introduction

These Parameters set forth the risk management policies and procedures to be followed by Enbridge Gas Distribution Inc. ("EGD" or the "Company") and applicable personnel in affiliated companies in the conduct of EGD's carbon allowance procurement activities. These Parameters and any amendments thereto are approved by the EGD Carbon Procurement Governance Group ("CPGG") and the Enbridge Inc. ("EI") Corporate Financial Risk Management Committee ("CFRMC") and are consistent with EI's other risk policies. EGD's risk management governance is the responsibility of the EI Board of Directors.

The authorities granted by these Parameters shall be used only to manage the risk of EGD's commercial carbon instrument procurement activities and are a further delineation of EGD's Business Unit Risk Management Policy specific to the referenced business areas. In no way shall these Parameters be interpreted to permit the execution of transactions creating incremental risk with an intention to generate profits based on a market view.

Cap and Trade legislation imposes strict conditions of confidentiality in order to prevent fraud, insider trading, tipping and financial manipulation of the cap and trade market. A bidder or auction participant is prohibited from disclosing if they plan to take part in an auction or, after the fact, if they have participated in an auction. In addition, bidders or participants must not disclose any information about their bidding strategy, the amount of bids or the quantity of allowances they plan to purchase in a specific auction. As required, operational risk procedures will address these confidentiality obligations.

Carbon Compliance Obligation

As a result of the *The Climate Change Mitigation and Low-carbon Economy Act, 2016* ("Climate Change Act") and Ontario *Regulation 144/16, The Cap and Trade Program* ("Cap and Trade Regulation") EGD will have the following compliance obligations in connection with greenhouse gas emissions:

- Facility-related obligations for EGD-owned and operated facilities, and
- Customer-related obligations for natural gas-fired generators and residential, commercial and industrial customers who are not Large Final Emitters or voluntary participants

EGD is bound by the Cap and Trade Framework ("Framework") issued by the Ontario Energy Board ("OEB") on September 26, 2016. The Framework requires EGD to outline its approach to meeting its compliance obligations, which may include both carbon emission allowance procurement and abatement opportunities. The Compliance Plan ("Compliance Plan") details the Company's allowance procurement strategy ("Procurement Strategy").

EGD's Compliance Plan for meeting its obligations must be filed with the OEB according to a set schedule. The OEB will not approve the Compliance Plan *per se*, it will approve the cost consequences of the Compliance Plan through an assessment of the Plan's adherence to a principles-based framework including cost-effectiveness, rate predictability,

EGD Carbon Procurement Appendix (Parameters)

April 10, 2017

transparency, flexibility and, noting the nascent state of the market, continuous improvement. A summary of Carbon Procurement Policy and Procedures for OEB reporting purposes is attached as Appendix “A”.

The following instruments and their markets are set out in the OEB Framework as compliance options to meet obligations under the Cap and Trade Program. Not all of the instruments contained in Table 1 are currently approved for use by the Corporation. Refer to Section 3 for a list of currently approved instruments.

Table 1: Instrument and Market Listing

Instrument	Market	Definition
Auction Allowances	Primary	Available through government administered auction. Clearing price risk in competitive auction with some predictability.
Allowance Bi-laterals	Secondary	Negotiated price for government sourced allowances between counter-parties, improves price certainty, higher availability risk
Allowance Futures	Primary	Standardized futures contract traded on an exchange by a broker with delivery dates, volume and terms and margin call requirements
Allowance Forwards	Secondary	Customized contract traded over the counter (OTC) that includes both market and credit risk
Offsets	Secondary	Compliance-grade instrument generated by emission reduction activities outside of regulated scope.
Offset Futures	Secondary/Tertiary	Exchange traded futures contracts for verified offsets
Allowance Derivatives	Secondary/Tertiary	Allowance derivative products offering the right to buy or sell an allowance for a set price during a future period (options) and swaps

In these Parameters, the use of the term “Allowances” is inclusive of carbon allowances purchased via auctions, secondary market or tertiary market sources, which represent one set of compliance instruments, including verified offsets. The term “Offsets” is used as defined in Table 1 to represent another source of compliance instruments. “Auction” refers to the Ontario Government administered cap and trade carbon auctions for both current and future vintage allowances. The term “Secondary Market” includes allowances purchased on the secondary or tertiary markets.

As these are nascent markets and legal obligations, 2017 will be the first year that EGD will be implementing a Compliance Plan and participating in the Cap and Trade market as a capped participant. These Parameters are based on information obtained from the Ontario Government, OEB and EGD consultants and research about this new marketplace. As

EGD Carbon Procurement Appendix (Parameters)

April 10, 2017

EGD gains experience in participating in the market, implementing and reporting on its Plan, amendments to these Parameters to accord with such experience and any new information will be necessary.

[The remainder of this document has been filed in confidence with the Ontario Energy Board.]

MONITORING AND REPORTING

1. In the Framework, the Ontario Energy Board (the “Board” or “OEB”) set out a requirement for annual reporting by the Utilities on the results of their Cap and Trade activities to “...support the OEB’s assessment of future plans for cost-effectiveness and to identify whether the Utilities are improving their planning and delivering greater value to customers”¹.
2. As noted in EB-2016-0300’s Decision, “...the OEB intends to establish a Monitoring and Reporting Working Group to: further refine the metrics, facilitate the monitoring and review of the Gas Utilities’ compliance activities; and to support the OEB’s review of the Cap and Trade Framework during the initial cap and trade compliance period.”² Enbridge intends to participate in the Monitoring and Reporting Working Group, in order to assist the OEB in the development of a consistent set of monitoring and reporting protocols for future Compliance Plans.
3. In the Board’s Decision and Order on the 2017 Compliance Plans (EB-2016-0300), the Board found that monitoring and reporting filings should be adopted consistently across the Gas Utilities. The Board directed the Gas Utilities to work together to develop a consistent set of monitoring and reporting protocols to be used in future Compliance Plans. The Board indicated that the Monitoring and Reporting Working Group will coordinate this process.³

¹ Report of the Board, Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities, pg. 37, September 26, 2017, EB-2015-0363.

² EB-2016-0300, Decision and Order, September 21, 2017, pg. 28

³ IBID, pp. 30-31.

Witnesses: A. Langstaff
J. Murphy
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4. In advance of this proceeding, Enbridge has collaborated with Union Gas Limited (“Union”) to use a combination of Enbridge and Union Monitoring and Reporting templates and has produced the updated monitoring and report templates for use in 2018, eliminating any redundancies. These monitoring and reporting templates are available as Appendix A to this Exhibit. The approach adopted by Enbridge and Union is consistent with the approach that Board Staff had suggested in their public submissions in the 2017 Compliance Plan proceeding.⁴
5. Enbridge submits that these templates should be used as a starting point for the OEB’s Monitoring and Reporting Working Group.
6. Enbridge proposes to use the monitoring and reporting templates provided at Appendix A until different templates are developed through the Monitoring and Reporting Working Group and/or approved by the OEB.
7. Enbridge will provide completed monitoring reports for 2017 as part of the Company’s 2019 Compliance Plan submission. Partial results for 2017 have been provided to the Board in this proceeding (Exhibit C, Tab 7, Schedule 2), because there are no full-year results available at this time. In future years, Enbridge anticipates that it will no longer be necessary to provide partial year results for the current year.

⁴ OEB Staff Submission, 2017 Cap and Trade Compliance Plans, Public Evidence, at pp. 15-16.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

[COMPANY]
 Actual Activity
 for Activity in the 12 month period ending December 31, 20xx

Line No.	Compliance Option	Forecast										Variance							
		(a)	(b)	(c) = (a)*(b)	(d)	(e)	(f) = (c) + (d) + (e)	(g) = (f) / (a)	(h)	(i)	(j) = (i) * (j)	(k)	(l) = (k) + (l) + (m)	(m)	(n) = (n) / (i)	(p)	(q) = (l) - (a)	(r) = (n) - (f)	
		Volume (tCO ₂ e)	Price (\$CAD/tonne of CO ₂ e)	Cost (\$CAD)	Transaction Cost (\$CAD)	Financing Cost (\$CAD)	Total Cost (\$CAD)	Total Cost (\$CAD/tCO ₂ e)	Percentage of Portfolio	Volume (tCO ₂ e)	Price (\$CAD/tonne of CO ₂ e)	Cost (\$CAD)	Transaction Cost (\$CAD)	Financing Cost (\$CAD)	Total Cost (\$CAD)	Total Cost (\$CAD/tCO ₂ e)	Percentage of Portfolio	Volume (tCO ₂ e)	Total Cost (\$CAD)
	Compliance Instruments																		
1	Allowances - primary market ¹																		
2	Allowances - secondary market ²																		
3	Offsets - primary market ³																		
4	Offsets - secondary market ⁴																		
5	Subtotal - Compliance Instruments																		
	Abatement																		
6	Customer Abatement Programs																		
7	Facility Abatement Programs																		
8	Subtotal - Abatement																		
9	Total - Compliance Plan																		

Notes

- 1 - Primary market allowances include purchases of allowances from auction
- 2 - Secondary market allowances include purchases of allowances from bilateral deals and allowance futures/forwards
- 3 - Primary market offset purchases include purchases from offset projects
- 4 - Secondary market offsets include the purchase of offsets that have already been issued. This includes, but is not limited to, offset bi-laterals and offset forwards/futures

[Company]
Auction Transaction Summary
for activity in the 12 month period ending December 31, 20xx

		(a)	(b)	(c)	(d)	(e)
		2018				
Line		Bid Quantity	Bid price	Settlement	Settlement	Cost
No.	Auction date *	(tonne of CO2e)	(\$CAD)	Quantity (tonne of CO2e)	price (\$CAD/tonne of CO2e)	(CAD) (e) = (c) x (d)
1	March	-	-	-	-	-
2	March	-	-	-	-	-
3	March	-	-	-	-	-
4	Total/Average	-	-	-	-	-
5	June	-	-	-	-	-
6	June	-	-	-	-	-
7	June	-	-	-	-	-
8	Total/Average	-	-	-	-	-
1	September	-	-	-	-	-
2	September	-	-	-	-	-
3	September	-	-	-	-	-
4	Total/Average	-	-	-	-	-
5	December	-	-	-	-	-
6	December	-	-	-	-	-
7	December	-	-	-	-	-
8	Total/Average	-	-	-	-	-
9	Grand Total/Average	-	-	-	-	-

* Auction dates are provided illustratively

PARTIAL 2017 MONITORING AND REPORTING

1. As directed in the Board's EB-2016-0300 Decision on Enbridge's 2017 Compliance Plan¹, Enbridge is providing the Company's partial year monitoring and reporting for 2017. This is attached to this Exhibit as Appendix A. Appendix A provides strictly confidential information up to and including October 31, 2017.
2. Future monitoring and reporting templates will be provided for full year actuals, as part of the annual monitoring and reporting filings due August 1 following the year of activity.

¹EB-2016-0300, Decision and Order, September 21, 2017, pg. 28.

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PARTIAL 2017 MONITORING AND REPORTING TEMPLATES

This information has been filed in confidence with the Ontario Energy Board.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

FORECAST OF 2018 ADMINISTRATIVE COSTS

1. Enbridge forecasts its 2018 Administrative Costs that will be captured in the 2018 Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA") to be a total of \$5.2 million. Of that amount, \$2.0 million is related to the Low Carbon Innovation Fund ("LCIF") as detailed in Exhibit C, Tab 5, Schedule 1. The current forecast of \$5.3 million represents less than 1.4% of Enbridge's forecast overall compliance cost for 2018.¹ Enbridge anticipates that there will be additional currently unquantified costs (such as OEB proceeding costs) that will be recorded in the GGEIDA in addition to the current forecast as further discussed later in this exhibit.
2. As detailed in Enbridge's 2017 Compliance Plan (EB-2016-0300, Exhibit C, Tab 3, Schedule 6), administrative costs associated with the Company's participation in the Cap and Trade program were not contemplated or included in Enbridge's 2014-2018 Customized Incentive Regulation ("CIR") application; therefore, any incremental administrative costs related to the Cap and Trade program will be accounted for in the GGEIDA.
3. Enbridge will continue to use the GGEIDA to record actual incremental 2018 administrative costs associated with the ongoing sustainment and operation of Enbridge's Cap and Trade activities. Enbridge will seek disposition of the actual 2018 GGEIDA costs with the annual monitoring and reporting filing on August 1, 2019.
4. Enbridge will continue to apply the same criteria as the Company did in 2016 and 2017 when determining the appropriateness and subsequent tracking of costs in

¹ As noted in Exhibit G, Tab 1, Schedule 1, the forecasted compliance plan cost at the proxy price is \$382 million.

Witnesses: A. Langstaff
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R. Small

the GGEIDA. The criteria are that all costs included in the GGEIDA are to be incremental to the Company's current business and required for the purposes of fulfilling the Company's Cap and Trade obligations. Additionally, these costs must not have been included in the forecasts of costs upon which the rates for the CIR term were set.

5. In the EB-2016-0300 Decision on Enbridge's 2017 Compliance Plan, the OEB found that the 2017 costs proposed by Enbridge (and the other Gas Utilities) to meet cap and trade compliance obligations were consistent with the expectations established in the Cap and Trade Framework.²
6. This Exhibit provides information about the applicable Cap and Trade administrative costs forecasted for the 2018 calendar year.
7. A forecast of the 2018 administration costs is set out in Table 1.

Table 1: 2018 Forecasted Administrative Costs

Cost Element	Forecasted Amount
Revenue requirement implications of IT billing system upgrades	\$191,000
Staffing Resources	\$1,500,000
Low Carbon Initiative Fund ("LCIF")	\$2,000,000
Consulting Support and Market Intelligence	\$400,000
OEB Cap and Trade related Consultation ³	\$100,000
Incremental Cap and Trade related GHG Reporting and Verification Audit	\$40,000

² EB-2016-0300 Decision and Order, pg. 16

³ Includes any required updates to the MACC, LTCPF and any costs associated with the OEB's Cap and Trade Working Group.

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Cost Element	Forecasted Amount
Bad Debt Provision	\$960,000
Other Miscellaneous Costs	\$60,000
Applicable Compliance Plan Proceeding Costs	TBD
Total 2018 Forecast Administrative Costs for GGEIDA	\$5,251,000

8. The amounts set out in Table 1 are the Company's current forecasts of relevant costs. The actual amounts incurred and thus sought for clearance may differ.
9. A discussion of each cost element is contained in the paragraphs below.

Revenue requirement implications of IT billing system upgrades

10. In 2016, Enbridge implemented billing system changes to allow for the collection of Cap and Trade charges. As noted in EB-2016-0300, Exhibit C, Tab 3, Schedule 6, Enbridge will seek an annual revenue requirement associated with these billing system changes until the cost can be incorporated into delivery rates.
11. For 2018, Enbridge anticipates a revenue requirement of \$191,000 to recover the costs associated with the billing system changes implemented in 2016. This amount will be recorded in the GGEIDA.

Staffing Resources

12. Enbridge's estimate for 2018 staffing resources is \$1.5 million. This cost is fully allocated and includes pension, benefits and related overheads.

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13. Enbridge recognizes the importance of further developing an internal team to effectively manage the Company's Cap and Trade related obligations on behalf of its ratepayers. As explained in EB-2016-0300, the Company's core Cap and Trade staffing resources in 2016 totaled four full time resources.
14. The Company notes that the Cap and Trade file affects and interacts with a variety of groups within the existing organization. Wherever reasonable to do so, Enbridge has leveraged existing staff and managerial time and effort from persons outside of the Company's Cap and Trade group, highlighting a commitment to cost effectiveness, productivity gains and continuous improvement. These ancillary resources' time and related costs will not be recorded in the GGEIDA.
15. Moving forward, Enbridge will continue to optimize resources, where possible, recognizing that as some activities decrease and others increase, incremental resources may become necessary to adequately manage the Company's Cap and Trade obligations. Any incremental resources required for Cap and Trade will be articulated in the respective Compliance Plan and captured in the GGEIDA for subsequent clearance.
16. In 2017, staffing resources evolved to reflect the changing demands on the business to meet its Cap and Trade obligations. In particular, focus has shifted from the earlier days of business system and infrastructure readiness to carbon market expertise and program implementation. To this end, during 2017 Enbridge added one formal role around Carbon Market Financial/Offset Instrument Procurement, as well as a Document Control Administrator. The Business Implementation and Compliance Reporting role was an evolution from the Business Readiness role and is in the process of being filled.

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17. This evolution will continue into 2018 with the result being a team of eight with increased sophistication and targeted accountabilities in the combined task of planning for and implementing all aspects of the Compliance Plan.

Table 2: Cap and Trade Roles/Accountabilities in 2018

Role/Accountability	Number of FTEs
Manager	1
Cap and Trade and Related Regulation Senior Advisor	1
Carbon Market Financial/Offset Instrument Procurement Specialists	2 (1 new for 2018)
Business Implementation and Compliance Reporting Lead	1
Document Control Administrator	1
Abatement Initiative Identification, Development and Reporting Specialists	2 (new for 2018)
Total	8

18. For 2018, it is evident that the Company's roles and responsibilities will become more complex as linkage with the WCI market occurs (bringing a diversity of available compliance instruments) and as Enbridge increases its focus on carbon abatement activities. A more complete team with targeted and an increasingly sophisticated skills will be required as assessments of instruments and advancement of abatement initiatives become more complex. While Enbridge has reassessed the need for a full time Communications Lead, the Company Group has determined that a second carbon market financial instrument procurement resource as well as the two new abatement initiative resources are necessary to effectively

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navigate the increasingly complex carbon markets, meet Compliance Plan and related deliverables and meet the increased expectations around abatement initiative assessment and low/no carbon technology deployment.

19. Refer to Exhibit C, Tab 5, Schedules 1 to 3 for details about the Enbridge's abatement plans for 2018, which includes a request for approval or endorsement of the two new Abatement Initiative Identification, Development and Reporting Specialists.

Low Carbon Initiative Fund ("LCIF")

20. As detailed in Enbridge's Abatement Activities evidence at Exhibit C, Tab 5, Schedules 1 to 3, the Company is requesting approval for (or endorsement of) a "Low Carbon Initiative Fund" ("LCIF") of up to \$2 million accessible each year starting in 2018 in order to provide funding for carbon abatement activities.
21. Details about the specific projects that would be funded from the LCIF are set out at Exhibit C, Tab 5, Schedules 1 to 3. As with other Administrative Costs, only the LCIF-related amounts actually spent would be recorded in the GGEIDA (up to a cap of \$2 million).

Consulting Support and Market Intelligence

22. In order to continue to be well-informed about and responsive to the Cap and Trade markets and environment, Enbridge participates in industry associations and receives support from experts and consultants for development and execution of the Cap and Trade activity. Consulting and market intelligence costs, which are captured in Table 3 below, are forecasted to be approximately \$400,000 and cover:

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- a. Expert insights and support related to Enbridge's development and implementation of its Compliance Plan;
- b. Specific offset market insight (including technical review of regulations and protocols) necessary to build an effective offset strategy as well as help support development of an active offset market;
- c. Carbon market and related climate policy insight and analysis at the International, Federal and Provincial levels gained via industry memberships and market intelligence channels; and,
- d. Legal and/or technical review of regulation amendments and commercial contract support where required.

Table 3: Forecasted 2018 Consulting and Market Intelligence Cost by Component

Component	Forecasted Cost
Compliance Plan Consulting and Implementation Support	\$150,000
Offset Market Consulting Support	\$100,000
Carbon Market and Related Climate Policy Support	\$100,000
Compliance Plan Enabling Legal Support	\$50,000
Total	\$400,000

OEB Cap and Trade Consultation Costs

23. The Company estimates that it will incur costs of approximately \$100,000 in 2018 attributable to OEB consultations related to Cap and Trade issues. This includes costs related to an update of the LTCPF, as well as costs related to the OEB's Cap and Trade Working Group.

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Incremental Cap and Trade related GHG Reporting and Verification

24. Enbridge is only permitted by Regulation to use the same GHG verification firm for a period of six years. As of 2017, Enbridge will have utilized the services of Ernst and Young for six years; therefore, for the purposes of the 2018 GHG audit, Enbridge must seek the services of a new GHG auditing firm.
25. Enbridge estimates that the cost of the GHG audit may increase from previous verification audits given a new auditor may have to spend more time becoming familiar with our systems, equipment and process. In addition, there may be incremental GHG reporting support that is required based on amended Cap and Trade regulations. As such, the Company has forecasted \$40,000 for those two requirements.
26. It should be noted that the incremental cost associated with the GHG audit only relate to Enbridge's customer-related emissions. All auditing charges related to facility-related emissions will be allocated to the Company's O&M budget, as captured through Enbridge's CIR application.

Bad Debt Provision

27. Enbridge's forecast for bad debt in 2018 is \$7.5M. It should be noted that the Company's Customized IR proceeding did not contemplate or forecast any bad debt expense as a result of the introduction and ongoing sustainment of the Cap and Trade program and therefore, any bad debt impact as a result of the Cap and Trade program is incremental and should be recorded in the GGEIDA.
28. As filed in EB-2017-0086, Exhibit F1, Tab 2, Schedule 1, Enbridge has forecasted a 2018 allowed revenue requirement of \$2,982.2M under the current Customized IR

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D. McIlwraith
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model. This allowed revenue requirement does not take into account the impacts of the Cap and Trade revenue requirement. As filed at Exhibit G, Tab 1, Schedule 1, Enbridge's 2018 Cap and Trade revenue requirement is approximately \$381.7M.

29. Taking the foregoing into account, Cap and Trade represents approximately 12.8% of the Company's allowed revenue requirement; therefore, assuming the Company's 2018 bad debt forecast, the bad debt attributed directly to the introduction of Cap and Trade is estimated at \$960,000.
30. Enbridge proposes that the bad debt costs associated with the 2018 Cap and Trade Compliance Plan be recorded in the 2018 GGEIDA.

Other Miscellaneous Costs

31. Enbridge anticipates incurring approximately \$60,000 in miscellaneous costs related to customer outreach and communications, conferences and travel expenses. Enbridge recognizes conferences as invaluable learning opportunity, where the Company has been provided opportunities to speak about its Cap and Trade experiences and gain perspective from other regulated and non-regulated Cap and Trade participants.
32. There are other administrative costs that Enbridge may incur in 2018 that would be recorded in the GGEIDA, but for which amounts have not been forecast at this time.
33. As an example, Enbridge expects to incur costs in 2018 related to OEB proceedings (such as this one) to review Compliance Plans. The costs of such proceedings (including OEB costs, legal costs and consultant costs) will be recorded in the GGEIDA.

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34. As another example, Enbridge may incur additional communications costs to meet OEB expectations. In order to support objectives set out in the Board's Framework, Enbridge will continue to advise its customers of rate changes and Cap and Trade updates using existing cost-effective channels. If deemed necessary by the Board and/or sought by customers through feedback, Enbridge could produce a standalone bill insert at a cost of roughly \$30,000. To date, no such demand appears to exist.

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2016 ADMINISTRATIVE COSTS

1. Under the Climate Change Act and Cap and Trade Regulation, Enbridge is required to acquire sufficient emission allowances related to Greenhouse Gas ("GHG") emissions from its customers' natural gas use, excluding capped participants, and natural gas used in its own operations.
2. The Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA") was originally approved through EB-2012-0459 to record impacts arising from regulations related to GHG emissions requirements, such as the Cap and Trade program.
3. In order to ensure Enbridge was ready to implement Cap and Trade on January 1, 2017, the Company spent time and resources to ensure business and regulatory readiness. These activities included incremental resourcing requirements, billing system upgrades, customer communications, compliance plan development, procurement capability development and cap and trade knowledge attainment. As detailed in Enbridge's 2017 Compliance Plan (EB-2016-0300), the cost associated with the implementation of Cap and Trade were not considered as part of Enbridge's 2014-2018 Customized Incentive Regulation ("CIR") application and as such have been recorded in the 2016 GGEIDA.
4. The 2016 GGEIDA which Enbridge seeks to clear in this proceeding has a balance of \$0.840 million (exclusive of interest). The amounts included in the 2016 GGEIDA are broken down as follows:

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Table 1: 2016 GGEIDA

Cost Element	Actual Amount
IT billing system – revenue requirement	\$ (99,500)
Staff Resources	\$533,321
Market Intelligence, and Consulting Support	\$268,199
Customer Outreach and Information	\$44,783
External Legal Counsel (Compliance Readiness and C&T Regulatory Proceeding Preparations)	\$93,533
Total (exclusive of interest)	\$840,336

5. The interest cost (or carrying costs) associated with the balance in Table 1 will be calculated prior to disposition.
6. The above amounts do not include the actual total installed capital costs associated with the IT billing system of \$564,200. The majority of the capital spending associated with this system was spent in 2016 with a small remainder spent in 2017. The IT billing system was put into service in late 2016 and the impact of the capital costs is appropriately being sought to be recovered through a revenue requirement calculation. The resulting revenue requirement for 2016 is a credit of \$99,500 (because of the impact of accelerated depreciation for tax purposes). The revenue requirement for the IT billing system will be a debit amount in future years.
7. Enbridge notes that some services that were rendered in 2016 towards Cap and Trade readiness were not invoiced until early 2017. Those costs were recorded in the 2017 GGEIDA.

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CUSTOMER OUTREACH AND INFORMATION

1. The Board's Framework indicates that it "...considers appropriate customer outreach and information to be essential as customers need to understand the Cap and Trade program and the way in which the program will affect their bills."¹ Enbridge agrees and has been communicating to customers about Cap and Trade since mid-2016. Through 2017 (the first year of Cap and Trade implementation), Enbridge has continued to communicate with its customers through existing cost-effective channels with the Board's outreach objectives in mind. In the Decision and Order on Enbridge's 2017 Compliance Plan (EB-2016-0300), the Board found that Enbridge's proposed customer outreach strategy is "reasonable and appropriate".²
2. In 2018, Enbridge will continue its efforts to communicate about the Cap and Trade program through the most effective existing customer communication channels. Under that premise, the 2018 Cap and Trade customer outreach and communication plan has been developed and is attached in Exhibit E, Tab 1, Schedule 1, Appendix A. This plan will be updated for any new regulatory changes and stakeholder feedback via existing channels such as the call centre and the Board's Cap and Trade working group (when it is established).
3. Set out below is a brief summary of Enbridge's customer outreach and communication plans and activities for 2018.

Cap and Trade Customer Outreach 2018

4. Enbridge has and will continue to listen to the needs of customers as they relate to Cap and Trade through existing channels. For example, the Company monitors the

¹ Framework, p. 35.

² EB-2016-0300 Decision and Order, September 21, 2017, at p. 32.

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number of Cap and Trade calls and content trends to the mass market and business customer call centres and the customer Ombud's office. As well, the Company will continue to monitor website traffic to enbridgegas.com/capandtrade and various franchise media outlets for coverage of the topic to garner insight into customer sentiment.

5. Enbridge incorporates information relating to the role of energy efficiency to reduce Cap and Trade costs into various in-person presentations aimed at commercial business customers. Audience questions and feedback will be used as another means of understanding customers' perspectives.
6. Enbridge's Large Volume Account Executives regularly email and meet with large volume customers and these employees provide a channel for feedback related to Cap and Trade.

Cap and Trade Customer Information 2018

7. Enbridge's messages to customers in 2017 included the following:
 - a. Cap and Trade is a new government program intended to reduce GHGs with funds collected directed to GHG reduction initiatives,
 - b. Cap and Trade started to impact natural gas bills in January 2017,
 - c. Company energy efficiency programs and tips can help reduce GHGs and costs,
 - d. The Company is required to acquire GHG allowances to cover the emissions for the natural gas consumed by residential and business customers; some businesses with large emissions may need, or will be able, to acquire their own emission allowances,

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- e. The Board will review and approve Cap and Trade rates before the costs are passed through to customers, and
 - f. Business customers need to understand what Cap and Trade means to them and have been directed to: Ontario.ca/capandtrade.
8. As additional information about Cap and Trade is known or the Cap and Trade program evolves, the Company will update its messages to customers.
9. As proposed by the Board, Enbridge includes a message on the bill to advise customers that applicable Cap and Trade costs are included in the Delivery line on the bill. The message highlights that applicable Cap and Trade charges are encompassed within the 'Delivery to You' line item and also points customers to the Company's website for information. Enbridge includes both the customer-related and facility-related Cap and Trade rates in the tariff sheets available on the Company's website. These messages will be updated as appropriate. For example, should the Cap and Trade rates change and/or be trued up in future, this information will be incorporated into existing rate related communication channels.
10. Enbridge continues to provide information about Cap and Trade for both business and residential customer segments on its website. In 2017, the Company added an online calculator to the website (enbridgegas.com/capandtrade) to help customers estimate their Cap and Trade charges as shown below. The example depicted is based on a typical Enbridge residential customer's annual use of 2,400 cubic metres of natural gas a year (Exhibit E, Tab 1, Schedule 1, Figure 1).

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Figure 1: Screenshot of online Cap and Trade calculator, January 2017

Estimate your cap and trade costs

Please enter the amount of natural gas used:

▸ Where can I find this?

2400 [Clear](#)

Your estimated cap and trade charges would be about \$80.44

About the Calculator

This calculator can be used by residential and most business customers to estimate the cap and trade costs based on the interim rate of 3.3518 cents / m³ approved by the Ontario Energy Board. Large Business Account and Regulated Storage and Transmission customers should reference Enbridge's online [rate handbook](#) or contact their Account Executive for their applicable rate.

Cap and trade charges are included in the *Delivery to You* charge on your bill starting January 1, 2017. The January bill includes gas usage for part of both December and January. When entering gas usage from your January 2017 bill into the calculator, note that the calculator will estimate your cap and trade charges to be higher than what was applied to your bill. This is because this bill includes partial charges for December.

11. Enbridge delivers tailored messages for large volume businesses since Cap and Trade may affect these customers differently from customers that are not eligible to participate in Cap and Trade directly. For these customers, participation in Cap and Trade, as either a mandatory or a voluntary participant, has and will continue to be confirmed with the use of a declaration form. The intent of this form is to clearly identify the accounts for which the customer holds customer-related Cap and Trade obligations. This will help minimize any risk that the Company and a customer both acquire allowances for the same facility.
12. Business customers continue to be directed to Ontario.ca/capandtrade for specific Cap and Trade related questions including questions about GHG reporting. Enbridge incorporated a message on its business customer website regarding government GHG reporting changes for businesses with site emissions over 10,000 t CO₂e but less than 25,000 t CO₂e effective June 1, 2017.

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2018 Large volume customer communication

13. Enbridge recognizes the importance of providing large volume customers with the information they need to better understand their energy costs so that they may manage resources wisely. To this end, the Company will continue its communications to large volume customers around pertinent market information including where applicable energy efficiency program opportunities, rate changes and marketplace insights. Communication occurs directly from the Enbridge Account Executives, the website, email and volume customer annual meetings, if warranted.
14. The Board requires the Utilities to separately identify charges associated with the recovery of Cap and Trade program compliance on their tariff sheets which are posted on Utility websites. Enbridge will notify industrial and other large natural gas customers, along with gas-fired electricity generators, of the charges.
15. To communicate rate information to these customers, Enbridge will leverage existing communication processes for its Large Natural Gas Customers to include Cap and Trade information and updates. This communication will be led by Enbridge Account Executives and may include periodic email updates about rate changes listed in tariff sheets and other relevant information, one-on-one meetings and making annual requests for forecasted volumes in the subsequent calendar year.
16. These same channels will be used to reach direct purchase agent/broker/marketer ("ABM") which manage some of Enbridge's large volume customers.

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17. Enbridge will also engage with large volume customers through their respective industry associations such as the Industrial Gas Users Association (“IGUA”) and the Association of Power Producers of Ontario (“APPrO”).

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Enbridge Gas Distribution

2018 Cap and Trade Customer Outreach and Communication Plan

Background

Enbridge is committed to proactively communicating with customers about changes that will affect them.

In May 2016, the Government of Ontario passed the Climate Change Mitigation and Low-carbon Economy Act, 2016 and posted its related Cap and Trade regulation. These changes are part of its intention to lower Greenhouse Gas emissions (GHGs) as part of the province's climate change strategy. The Cap and Trade program began on January 1, 2017. Enbridge Gas Distribution has a compliance obligation set out in both the law and regulation.

With Cap and Trade, there are costs related to the GHG emissions from natural gas used by Ontario homes and businesses. The Cap and Trade rate charged to customers is determined through a regulatory process, and is reviewed and approved by the Ontario Energy Board (the "Board") before it is passed through to customers.

In 2016, the Board approved interim Cap and Trade rates for customers effective January 1, 2017. The Cap and Trade rates were approved as final in the Board's September 2017 Decision and Order on Enbridge's 2017 Compliance Plan. Enbridge's 2018 Cap and Trade rates are included in the 2018 Compliance Plan, which is being filed with the Board in November 2017.

Applicable Cap and Trade costs for customer and/or facility related emissions will be included in the Delivery charge of customer natural gas bills.

Some business customers with large emissions are required, or are able, to acquire their own customer-related allowances.

Cap and Trade is relatively new in Ontario and as a result Enbridge will refine this plan as customers become more familiar with the program, as additional details of Cap and Trade unfold, and as it receives feedback from customers.

Objectives

The Ontario Energy Board has set out four Cap and Trade-related communication and outreach objectives:

- a. Improve customer awareness of the government's climate change actions including the Cap and Trade program;
- b. Provide an explanation of the Utilities' role in relation to emissions reduction, and the two types of emissions – facility-related and customer-related;
- c. Provide an understanding of the regulatory review and approval of Utility costs of compliance that will occur before customers will be charged; and,
- d. Provide customers with information on how to manage their GHG emissions and reduce their bills by reducing gas consumption.

Enbridge Gas Cap and Trade Outreach and Information Goals

1. Understand how customers in different segments prefer to be communicated with about Cap and Trade
 - a. Leverage existing Cap and Trade research filed with the Board last year
 - b. Monitor customer feedback
2. Communicate with each segment using existing, effective and appropriate channels
3. Adjust messages as needed to meet customer needs

Target Audiences

Cap and Trade program customer communications in 2018 will build on prior communication for the following audiences including:

- Mass market customers
 - o Residential customers
 - o Low-income residential customers
 - o Small business customers
- Business customers
 - o Gas-fired power generators
 - o Mandatory Cap and Trade participants
 - o Customers who choose to opt-in as voluntary Cap and Trade participants
 - o Potential Cap and Trade participants
- Customer Intervenors and Industry Associations

- Internal (primarily customer-facing staff)
 - o Call centre/Large Volume Customer Account Executives

Communication Themes

To deliver on the Board's communication objectives, Enbridge will continue to focus on Cap and Trade as it relates to its natural gas customers.

1. How Cap and Trade will affect customer bills
 - Enbridge will communicate to customers about
 - o How Cap and Trade fits into the government's climate change actions, how it impacts customer bills and that the government has indicated that the funds collected through Cap and Trade will go to programs to reduce GHG emissions.
 - o Our role in managing Cap and Trade costs including energy efficiency and customer abatement programs and an explanation of facility-related costs
 - o The Ontario Energy Board's role in reviewing and approving Cap and Trade costs before they are passed through to customers and the true-up process.
 - o [Link to Ontario.ca/capandtrade](http://Ontario.ca/capandtrade)
2. Ways to reduce GHGs and costs
 - Since GHGs and the cost of Cap and Trade to customers is largely determined by the amount of natural gas a customer uses and costs related to Enbridge facility use of natural gas, the utility will continue to highlight the role of energy efficiency and other customer abatement programs in helping to reduce the GHG costs customers would otherwise pay.

Customer Outreach

Enbridge will continue to listen to the needs of customers as they relate to Cap and Trade through existing channels including some or all of the following:

- calls to the residential customer call centre
- calls to the business customer call centre

- calls to the Ombud's office
- social media posts
- enbridgegas.com/capandtrade traffic
- media monitoring
- survey questions
- presentation questions and feedback
- Large Volume Account Executive interactions with customers

Communications Strategy

Information will be shared with customers by sector and across a variety of existing and relatively cost effective communication channels including but not limited to:

- Call centre and employee scripts and messages
- Website
 - o Enbridgegas.com/capandtrade (residential and business pages) with embedded government video about Cap and Trade and link to Ontario.ca/capandtrade and calculator to help interested customers estimate their Cap and Trade costs
 - o Interactive bill now includes Cap and Trade reference to "Delivery to You" description
 - o Links to energy efficiency tips and programs
- Tariff Sheets
- Bill insert(s) – the primary channel will be quarterly rate notices and if warranted, messages in the Company's customer newsletter or standalone bill insert would be considered
- On bill message directing customers to website for Cap and Trade information
- Media communications if warranted
- Presentations to various audiences with a particular focus on the role of energy efficiency in reducing Cap and Trade costs
- Engagement with Low Income Energy Assistance (LEAP) agencies delivering programs to low income customers and representatives such as the Low-Income Energy Network (LIEN)

- Links to the Government's Cap and Trade website (Ontario.ca/capandtrade) for general information including GHG reporting and Cap and Trade help desk contact information for business customers
- Specific communication with large volume customers that may include the annual Large Volume Customer Meeting, Account Executive interactions such as one-on-one meetings and/or periodic email updates, business Cap and Trade webpage and through engagement with associations such as the Industrial Gas Users Association (IGUA) and the Association of Power Producers of Ontario (APPRO)

Timelines

Communication about Cap and Trade began in 2016, and will continue to be incorporated into customer communications throughout the Cap and Trade compliance period -- which extends to the end of 2020. As well, any rate adjustments determined through the regulatory process will be communicated to customers in a timely manner using existing rate-related communication vehicles as much as possible.

DEFERRAL AND VARIANCE ACCOUNTS

1. In 2018, Enbridge will continue to utilize the Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA") to record administrative costs. Enbridge's request for the establishment of the 2018 GGEIDA is set out in the 2018 Rate Adjustment proceeding (EB-2017-0086). A forecast of the 2018 administrative costs is available at Exhibit D, Tab 1, Schedule 1, Table 1.
2. In accordance with the Draft Accounting Orders for the 2017 Compliance Plan filed on October 5, 2017, pursuant to the EB-2016-0300 Decision and Order, dated September 21, 2017, Enbridge will establish two variance accounts for 2017 to separately track Customer-related obligation ("GHG-Customer VA") and Facility-related obligation costs ("GHG-Facility VA"). These accounts will allow for the recovery or credit of any differences between actual Customer-related obligation and Facility-Related obligation costs in 2017, including applicable carrying charges and other relevant costs such as tax implications, and the actual amounts recovered through rates, being the aggregate of the revenues from the Cap and Trade Unit Rates for Customer-related and Facility-related obligation costs. These accounts will ensure that the Company neither over- or under-recovers Customer-related or Facility-related obligation costs.
3. In this proceeding, Enbridge is requesting the establishment of the 2018 GHG-Customer VA and the 2018 GHG-Facility VA, with the same parameters and accounting treatment as the 2017 versions of those accounts.
4. As detailed in EB-2006-0117, Accounting Interest Rates Methodology for Regulated Accounts, Enbridge will use the approved prescribed interest rate for determining

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A. Langstaff
J. Murphy
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any carrying costs associated with outstanding deferral and variance account balances. When calculating carrying costs, the prescribed interest rate will be obtained from the OEB's website.

5. The Company plans to seek disposition of any amounts recorded in the 2018 deferral and variance accounts described above as part of the Compliance Plan to be filed on August 1, 2019.
6. In 2015 and 2016, Enbridge incurred administrative costs in relation to the implementation of the Cap and Trade program. These costs are being sought for recovery through the 2016 GGEIDA and amounted to \$0.840M (exclusive of interest). Refer to Exhibit D, Tab 1, Schedule 2 for details about the amounts recorded in the 2016 GGEIDA. As noted in the Settlement Proposal in the 2016 ESM proceeding (EB-2017-0102, Exhibit N1, Tab 1, Schedule 1, pg. 12), Enbridge is seeking clearance of the 2016 GGEIDA through this Compliance Plan filing.
7. The actual carrying costs associated with the balance of 2016 GGEIDA will be calculated prior to disposition.
8. Through the Reporting & Record Keeping Requirements ("RRR"), Enbridge filed that the balance of the 2016 GGEIDA was \$0.939M (exclusive of interest). As identified through Exhibit D, Tab 1, Schedule 2, Enbridge's actual 2016 GGEIDA account balance is \$0.840M (exclusive of interest). The difference between the actual balance and the balance recorded through the RRR process can be attributed to the IT billing system's revenue requirement of \$(.1)M as filed in EB-2016-0300, Exhibit J1.2.

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COST RECOVERY STATEMENTS

1. In this proceeding, Enbridge requests approval of the Customer-related and Facility-related unit rates (the “Cap and Trade Unit Rates”) to recover the cost of meeting Enbridge’s obligations under the Cap and Trade regulation related to Greenhouse Gas (“GHG”) emissions from relevant customers and Company facilities. Details about the Cap and Trade Unit Rates are included below, with the supporting calculations and the Unit Rates themselves detailed in the Schedules to this evidence. Refer to Appendix A, Table A1 through A5 to Exhibit G, Tab 1, Schedule 1.

Cap and Trade Unit Rates for 2017 (Customer-related and Facility-related)

2. Under the Climate Change Act and Cap and Trade Regulation, Enbridge is required to acquire sufficient emission allowances related to GHG emissions from its customers’ natural gas use and natural gas used in its own operations. The costs for those emission allowances will be recovered from customers through the Cap and Trade Unit Rates. As determined in the Board’s Early Determination, the Customer-related costs will be recovered from all customers except for Large Final Emitters (“LFEs”) (i.e., facilities that emit more than 25,000 tonnes of carbon dioxide equivalent (“tCO₂e”)) and “voluntary participants” in the Cap and Trade program who purchase their own emissions allowances. Natural gas derived from biomass, and natural gas distributed to downstream or out-of-province natural gas distributors are also excluded from Customer-related costs. Facility-related costs will be recovered from all customers.

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3. In order to determine the Cap and Trade Unit Rates, a first step is the determination of the forecast gas volumes to be consumed by customers (after the impact of DSM and incremental abatement has been considered, but excluding the volumes for LFEs, voluntary participants, natural gas derived from biomass, natural gas delivered to downstream or out-of-province natural gas distributors) and for the Company's own operations. These volumes are then used to determine the Cap and Trade Unit Rates needed to recover those costs.
4. Enbridge's volume forecast is available in Exhibit B, Tab 2, Schedule 1.
5. Enbridge's GHG emission forecast is available in Exhibit B, Tab 3, Schedule 1.

(i) Costs to meet Customer-related and Facility-related obligations

6. In order to estimate GHG emissions, natural gas volumes are converted to GHG emissions, in tCO₂e, using the equations and default emission factors from the methodology outlined in *Sections ON.20 and ON.400 of the Guidelines for Quantification, Reporting and Verification of Greenhouse Gas Emissions* and the global warming potentials listed in Schedule 1 of *Ontario Regulation 143/16 Quantification, Reporting and Verification of Greenhouse Gas Emissions*.
7. The forecast of costs for Enbridge to meet Customer-related and Facility-related obligations is determined by: (i) calculating the GHG emissions (Exhibit B, Tab 3, Schedule 1) associated with forecast volumes (Exhibit B, Tab 2, Schedule 1); (ii) establishing a carbon price for rate setting purposes (refer to Exhibit B, Tab 4, Schedule 1); and (iii) multiplying the GHG emissions by the price determined in ii).

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A. Langstaff
J. Murphy

8. As detailed in Exhibit B, Tab 4, Schedule 1, Enbridge has used the Intercontinental Exchange (“ICE”) 21-day strip of a California Carbon Allowance (“CCA”) for delivery in each month of the forecast period, 2018, converted to Canadian dollars (“CAD”) using the same 21-day strip for foreign exchange for delivery in each month of the forecast period (the “ICE Price”) for rate setting purposes. The carbon price for rate setting purposes is \$18.99 CAD.
9. The total customer-related emissions for 2018 based on the Customer-related volume forecast is 19,855,327 tCO₂e. The derivation of that amount is set out in the Table 1, which is included at Exhibit B, Tab 3, Schedule 1.
10. The total facility-related emissions for 2018 based on the Facility-related volume forecast is 242,464 tCO₂e. The derivation of that amount is set out in Table 3, which is included at Exhibit B, Tab 3, Schedule 1.
11. The Customer-related and Facility-related costs for rate setting purposes are determined by multiplying the forecast emissions for each category by the ICE Price.
12. As set out in Appendix A, Table A1, which is included at Exhibit G, Tab 1, Schedule 1, Enbridge’s forecast customer-related obligation costs in 2018 total \$377,052,654 (19,855,327tCO₂e * \$18.99 CAD/t CO₂e).
13. As set out in Appendix A, Table A2, which is included at Exhibit G, Tab 1, Schedule 1, Enbridge’s forecast facility-related obligation costs in 2018 total \$4,604,398(242,464tCO₂e * \$18.99/t CO₂e).

Witnesses: A. Kacicnik
A. Langstaff
J. Murphy

(ii) Cap and Trade Unit Rates

- (a) The derivation of the 2018 Cap and Trade Unit Rates for Customer-related and Facility-related obligations follows the same methodology as set out in the Company's 2017 Cap and Trade evidence (EB-2016-0300) with an exception of the carbon price for rate setting purposes and is organized in the following manner: Appendix A, Table A1, which is found at Exhibit G, Tab 1, Schedule 1 summarizes, by rate class, the 2018 forecast gas volumes for Customer-related obligations and shows the derivation of CO₂e emission costs as well as the Cap and Trade Unit Rate for Customer-related obligations based on the ICE Price and net CO₂e emissions.
- (b) Appendix A, Table A2, which is found at Exhibit G, Tab 1, Schedule 1 summarizes, by component, the 2018 forecast gas volume for Facility-related obligations and presents the derivation of CO₂e emission costs as well as the Cap and Trade Unit Rates for Facility-related obligations based on the ICE Price and CO₂e emissions.
- (c) Appendix A, Table A3, which is found at Exhibit G, Tab 1, Schedule 1, summarizes the Cap and Trade Unit Rates for Customer-related and Facility-related obligations.
- (d) Appendix A, Table A4, which is found at Exhibit G, Tab 1, Schedule 1, is a summary of the 2018 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs.

Witnesses: A. Kacicnik
A. Langstaff
J. Murphy

- (e) Appendix A, Table A5, which is found at Exhibit G, Tab 1, Schedule 1, details the breakdown of the 2018 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs.
14. As directed by the Board in the Early Determination in EB-2015-0363, “the customer-related costs will be recovered through a volumetric (m^3) rate charged to each customer based on their consumption. This rate will be separately identified on the Utility tariff sheet.” The Board has also determined that “the rate for facility-related costs will also be separately identified on the Utility tariff sheet.”
15. Accordingly, the Cap and Trade Unit Rates for Customer-related and Facility-related costs are separately identified in the Company’s Rate Schedules as follows: Cap and Trade Customer-Related Charge (if applicable) and Cap and Trade Facility-Related Charge. Both of these charges are shown on the Rate Schedules for each rate class. Refer to Appendix B to this Exhibit.
16. In the Early Determination, the Board also determined how Cap and Trade charges should be reflected on customers’ natural gas bills. The Board has directed that “charges related to the recovery of Cap and Trade Program costs will be included in the Delivery charge on the bill.” The Company confirms that Cap and Trade charges will be included in the Delivery charges on customers’ bills. This practice has been in place since January 1, 2017.
17. For a typical residential customer consuming $2,400 \text{ m}^3$ of natural gas per year, the sum of Cap and Trade charges for Customer-related and Facility-related costs will equal about \$86 in 2018 based on the ICE Price. This represents an increase of

Witnesses: A. Kacicnik
A. Langstaff
J. Murphy

approximately \$6 compared to the forecasted Cap and Trade cost of \$80 to a typical residential customer in 2017.

18. Bill impacts for non-LFEs are identified in Appendix C, found at Exhibit G, Tab 1, Schedule 1. Bill impacts for LFEs are identified in Appendix D, found at Exhibit G, Tab 1, Schedule 1.
19. For rate making purposes, Enbridge did not include any administrative or carrying costs or tax impacts in the derivation of its Cap and Trade Unit Rates, as such costs will be recovered through either the Greenhouse Gas Emissions Impact Deferral Account or the Greenhouse Gas Emissions Compliance Obligation – Customer-related Variance Account or the Greenhouse Gas Emissions Obligation – Facility-related Variance Account.

Witnesses: A. Kacicnik
A. Langstaff
J. Murphy

TABLE A1

TABLE 1: 2018 CUSTOMER-RELATED VOLUMES, EMISSIONS, COST OF EMISSIONS AND UNIT RATE

Line	Rate	Budget Forecast Volumes ¹ (10 ³ m ³)	LFE, Customer Abatement, Capped Participants and Other Exempt Gas Volumes ² (10 ³ m ³)	Net Volumes ³ (10 ³ m ³)	Net CO ₂ e Emissions ⁴ (Tonnes CO ₂ e)	Assumed Cost of Allowances ⁵ (\$/tonne CO ₂ e)	Cost of CO ₂ e Emissions ⁶ (\$)	Unit Rate ⁷ (€/m ³)
1.1	1	4,760,546.5	5,922.6	4,754,623.9	8,913,146.3	18.99	169,260,649.0	
1.2	6	4,829,792.7	156,649.9	4,673,142.8	8,760,399.7	18.99	166,359,989.7	
1.3	9	0.0	0.0	0.0	0.0	18.99	0.0	
1.4	100	0.0	0.0	0.0	0.0	18.99	0.0	
1.5	110	789,035.8	367,138.0	421,897.8	790,901.0	18.99	15,019,210.1	
1.6	115	542,831.4	410,350.3	132,481.1	248,352.6	18.99	4,716,216.8	
1.7a	125	319,562.5	0.0	319,562.5	599,060.5	18.99	11,376,158.7	
1.7b	125 ⁸	124,896.5	0.0	124,896.5	234,134.4	18.99	4,446,211.3	
1.8	135	64,501.3	0.0	64,501.3	120,915.9	18.99	2,296,192.5	
1.9	145	50,136.2	3,670.7	46,465.5	87,105.5	18.99	1,654,133.1	
1.10	170	291,152.3	237,627.7	53,524.6	100,338.7	18.99	1,905,431.2	
1.11	200	169,764.4	169,764.4	0.0	0.0	18.99	0.0	
1.12	300	518.6	0.0	518.6	972.2	18.99	18,461.7	
1	Total Customer-Related	11,942,738.2	1,351,123.6	10,591,614.6	19,855,326.7	18.99	377,052,654.1	3.5599

Notes:

- (1) Exhibit B, Tab 2, Schedule 1, Table 1, Col. 1 - Col. 2
- (2) Exhibit B, Tab 2, Schedule 1, Table 1, Col. 3 + Col. 5 + Col. 6
- (3) Col. 1 - Col. 2
- (4) Exhibit B, Tab 3, Schedule 1, Table 1, Col. 5
- (5) The carbon proxy price for rate setting purposes was based on the California Carbon Allowance ICE 21 day strip price for delivery from September 1 through to September 29, 2017.
- (6) Col. 4 x Col. 5
- (7) (Col. 6 / (Col. 3 x 1000)) x 100
- (8) Dedicated unbundled customers

Customer-Related Unit Rate Calculation

Cap and Trade Customer Related Charge = Cost of CO₂e Emissions / Net Volumes
= \$ 377,052,654.1 / 10,591,614.6 10³m³
= 3.5599 €/m³

TABLE A2

TABLE 2: 2018 FACILITY-RELATED VOLUMES, EMISSIONS, COST OF EMISSIONS AND UNIT RATES

Line	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
	Volumes ¹ (10 ³ m ³)	CO ₂ e Emissions ² (Tonnes CO ₂ e)	Assumed Cost of Allowances ³ (\$/tonne CO ₂ e)	Cost of CO ₂ e Emissions ⁴ (\$)	Unit Rate (€/m ³)
2.1 Company Use					
2.1.1 Fleet	1,147.2	2,150.6	18.99	40,839.4	
2.1.2 Buildings	1,388.8	2,603.5	18.99	49,440.1	
2.1.3 Boilers	4,078.8	7,909.9	18.99	150,209.5	
2.1 Company Use	6,614.8	12,664.0	18.99	240,489.0	0.0016 ⁵
2.2 Unaccounted For Gas (UAF)	106,077.0	198,854.8	18.99	3,776,252.8	0.0320 ⁶
2.3 Compressor Fuel	15,957.3	30,945.5	18.99	587,655.9	0.0050 ⁷
2 Total Facility-Related	128,649.1	242,464.3	18.99	4,604,397.7	0.0386

Notes:

- (1) Exhibit B, Tab 2, Schedule 1, Table 2
- (2) Exhibit B, Tab 3, Schedule 1, Table 3, Col. 5
- (3) The carbon proxy price for rate setting purposes was based on the California Carbon Allowance ICE 21 day strip price for delivery in each month of 2018.
- (4) Col. 2 x Col. 3
- (5) Cost of CO₂e emissions / (Total customer-related volume + Rate 332 Volume) = [Col. 4 / ((Exhibit A1, Table 1, Line 1, Col. 1 + 2,850,078 10³ m³) x 1000)] x 100
- (6) Cost of CO₂e emissions / (Total customer-related volume - Rate 125D customers - landfill gas volume) = [Col. 4 / ((Exhibit A1, Table 1, Line 1, Col. 1 - Line 1.7b, Col. 1 - Line 1.12, Col. 2) x 1000)] x 100
- (7) Cost of CO₂e emissions / (Total customer-related volume excluding unbundled customers (Rates 125 and 300) + Rate 325 Volume) = [Col. 4 / ((Exhibit A1, Table 1, Line 1, Col. 1 - Line 1.7a, Col. 1 - Line 1.7b, Col. 1 - Line 1.12, Col. 1 + 190,328 10³ m³) x 1000)] x 100

Facility-Related Unit Rate Calculations

Company Use = Cost of CO₂e Emissions for Company Use / (Total Customer-Related Volume + Rate 332 Volume)
= \$ 240,489.0 / (11,942,738.2 + 2,850,078) 10³m³
= 0.0016 €/m³

Unaccounted For Gas Volumes = Cost of CO₂e Emissions for Unaccounted For Gas / (Total Customer-Related Volume Excluding Rate 125D and Landfill Gas)
= \$ 3,776,252.8 / (11,942,738.2 - 124,896.5 - 0) 10³m³
= 0.0320 €/m³

Compressor Fuel Volumes = Cost of CO₂e Emissions for Compressor Fuel / (Total Customer-Related Volume Excluding Unbundled Customers + Rate 325 Volume)
= \$ 587,655.9 / (11,942,738.2 - 319,562.5 - 124,896.5 - 518.6 + 190,328.0) 10³m³
= 0.0050 €/m³

Facility-Related Charge = 0.0016 + 0.0320 + 0.0050 €/m³
= 0.0386 €/m³

TABLE A3

TABLE 3: 2018 CAP & TRADE UNIT RATE SUMMARY

		Col. 1	
Line		Unit Rate (¢/m ³)	
1	Customer-Related	3.5599	1
	Facility-Related:		
2.1	Company Use	0.0016	2
2.2	UAF	0.0320	3
2.3	Compressor Fuel	0.0050	4
2	Facility-Related	0.0386	5
3	Total	3.5985	6

Notes:

- (1) Exhibit A1, Table 1, Line 1, Col. 8
- (2) Exhibit A2, Table 2, Line 2.1, Col. 5
- (3) Exhibit A2, Table 2, Line 2.2, Col. 5
- (4) Exhibit A2, Table 2, Line 2.3, Col. 5
- (5) Line 2.1 + Line 2.2 + Line 2.3
- (6) Line 1 + Line 2

TABLE A4

TABLE 4: 2018 CAP AND TRADE UNIT RATE SUMMARY BY RATE CLASS

Rate Class	Non-Large Final Emitter (¢/m ³)	Large Final Emitter ¹ (¢/m ³)
Rate 1	3.5985	0.0386
Rate 6	3.5985	0.0386
Rate 9	3.5985	0.0386
Rate 100	3.5985	0.0386
Rate 110	3.5985	0.0386
Rate 115	3.5985	0.0386
Rate 125	3.5935	0.0336
Rate 125 Dedicated	3.5615	0.0016
Rate 135	3.5985	0.0386
Rate 145	3.5985	0.0386
Rate 170	3.5985	0.0386
Rate 200	0.0386	0.0386
Rate 300	3.5935	0.0336
Rate 300 Interruptible	3.5935	0.0336
Rate 315	0.0050	0.0050
Rate 316	0.0050	0.0050
Rate 320	0.0000	0.0000
Rate 325	0.0067	0.0067
Rate 330	0.0067	0.0067
Rate 331	0.0016	0.0016
Rate 332	0.0016	0.0016

(1) Includes Voluntary Participants and Other Exempt Gas Volumes

TABLE A5

TABLE 5: 2018 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS

Rate Class		Non-Large Final Emitter (¢/m ³)	Large Final Emitter (¢/m ³)
Rate 1	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 6	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 9	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 100	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386

Rate Class		Non-Large Final Emitter (¢/m ³)	Large Final Emitter (¢/m ³)
Rate 110	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 115	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 125	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel		
	Facility-Related	0.0336	0.0336
	Total	3.5935	0.0336
Rate 125 Dedicated	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0016	0.0016
	Total	3.5615	0.0016

Rate Class		Non-Large Final Emitter (¢/m ³)	Large Final Emitter (¢/m ³)
Rate 135	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 145	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 170	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	3.5985	0.0386
Rate 200	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0386	0.0386
	Total	0.0386	0.0386

Rate Class		Non-Large Final Emitter (¢/m ³)	Large Final Emitter (¢/m ³)
Rate 300	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0336	0.0336
	Total	3.5935	0.0336
Rate 300 Interruptible	Customer-Related	3.5599	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0320	0.0320
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0336	0.0336
	Total	3.5935	0.0336
Rate 315	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0000	0.0000
	UAF	0.0000	0.0000
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0050	0.0050
	Total	0.0050	0.0050
Rate 316	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0000	0.0000
	UAF	0.0000	0.0000
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0050	0.0050
	Total	0.0050	0.0050

Rate Class		Non-Large Final Emitter (¢/m ³)	Large Final Emitter (¢/m ³)
Rate 320	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0000	0.0000
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0000	0.0000
	Total	0.0000	0.0000
Rate 325	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0000	0.0000
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0067	0.0067
	Total	0.0067	0.0067
Rate 330	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0000	0.0000
	Compressor Fuel	0.0050	0.0050
	Facility-Related	0.0067	0.0067
	Total	0.0067	0.0067
Rate 331	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0016	0.0016
	Total	0.0016	0.0016

Rate Class		Non-Large Final Emitter (¢/m ³)	Large Final Emitter (¢/m ³)
Rate 332	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0016	0.0016
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0016	0.0016
	Total	0.0016	0.0016

(1) Includes Voluntary Participants and Other Exempt Gas Volumes

RATE NUMBER:

1**RESIDENTIAL SERVICE****APPLICABILITY:**

To any Applicant needing to use the Company's natural gas distribution network to have transported a supply of natural gas to a residential building served through one meter and containing no more than six dwelling units ("Terminal Location").

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	<u>Billing Month</u> <u>January</u> to <u>December</u>
Monthly Customer Charge	\$20.00
Delivery Charge per cubic metre	
For the first 30 m ³ per month	11.5004 ¢/m³
For the next 55 m ³ per month	10.8689 ¢/m³
For the next 85 m ³ per month	10.3743 ¢/m³
For all over 170 m ³ per month	10.0056 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0492 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". Also, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F".

The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 1 Handbook 11
January 1, 2018	January 1, 2018	EB-2017-0086	July 1, 2017	



RATE NUMBER:

6**GENERAL SERVICE****APPLICABILITY:**

To any Applicant needing to use the Company's natural gas distribution network to have transported a supply of natural gas to a single terminal location ("Terminal Location") for non-residential purposes.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	<u>Billing Month</u> <u>January</u> to <u>December</u> <u>\$70.00</u>
Monthly Customer Charge	
Delivery Charge per cubic metre	
For the first 500 m ³ per month	10.7105 ¢/m ³
For the next 1050 m ³ per month	8.5580 ¢/m ³
For the next 4500 m ³ per month	7.0506 ¢/m ³
For the next 7000 m ³ per month	6.0821 ¢/m ³
For the next 15250 m ³ per month	5.6519 ¢/m ³
For all over 28300 m ³ per month	5.5438 ¢/m ³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m ³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m ³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0706 ¢/m ³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m ³
Cap and Trade Facility Related Charge	0.0386 ¢/m ³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". Also, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F".

The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 1
January 1, 2018	January 1, 2018	EB-2017-0086	July 1, 2017	Handbook 12

RATE NUMBER:

9**CONTAINER SERVICE****APPLICABILITY:**

To any Applicant needing to use the Company's natural gas distribution network to have transported a supply of natural gas to a single terminal location ("Terminal Location") at which, such gas is authorized by the Company to be resold by filling pressurized containers.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	Billing Month January to December
Monthly Customer Charge	\$235.95
Delivery Charge per cubic metre	
For the first 20,000 m ³ per month	11.2953 ¢/m³
For all over 20,000 m ³ per month	10.5739 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0144 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

EFFECTIVE DATE:

January 1, 2018

IMPLEMENTATION DATE:

January 1, 2018

BOARD ORDER:

EB-2017-0086

REPLACING RATE EFFECTIVE:

July 1, 2017

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RATE NUMBER:

100**FIRM CONTRACT SERVICE****APPLICABILITY:**

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation, to a single terminal location ("Terminal Location"), to be delivered at a specified maximum daily volume of not less than 10,000 cubic metres and not more than 150,000 cubic metres.

CHARACTER OF SERVICE:

Service shall be continuous (firm) except for events as specified in the Service Contract including force majeure.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	Billing Month January to December
Monthly Customer Charge	\$122.01
Delivery Charge	
Per cubic metre of Contract Demand	36.0000 ¢/m ³
Per cubic metre of gas delivered	0.1796 ¢/m ³
Gas Supply Load Balancing Charge	1.5715 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0706 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

Monthly Minimum Bill: The Monthly Customer Charge plus the Monthly Contract Demand Charge.

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

On the second and subsequent occasion in a contract year when the Applicant takes Unauthorized Demand Overrun Gas, a new Contract Demand will be established and shall be charged equal to 120% of the applicable monthly charge for twelve months of the current contract term, including retroactively based on the terms of the Service Contract.

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RATE NUMBER: 100

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER:

110**LARGE VOLUME LOAD FACTOR SERVICE****APPLICABILITY:**

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation, to a single terminal location ("Terminal Location"), of an annual supply of natural gas of not less than 146 times a specified maximum daily volume of not less than 1,865 cubic metres.

CHARACTER OF SERVICE:

Service shall be continuous (firm) except for events as specified in the Service Contract including force majeure.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	Billing Month January to December
Monthly Customer Charge	\$587.37
Delivery Charge	
Per cubic metre of Contract Demand	22.9100 ¢/m ³
Per cubic metre of gas delivered	
For the first 1,000,000 m ³ per month	0.8913 ¢/m ³
For all over 1,000,000 m ³ per month	0.7413 ¢/m ³
Gas Supply Load Balancing Charge	0.3268 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0145 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

On the second and subsequent occasion in a contract year when the Applicant takes Unauthorized Demand Overrun Gas, a new Contract Demand will be established and shall be charged equal to 120% of the applicable monthly charge for twelve months of the current contract term, including retroactively based on the terms of the Service Contract.

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RATE NUMBER: 110

MINIMUM BILL:

Per cubic metre of Annual Volume Deficiency
(See Terms and Conditions of Service):

6.5998 ¢/m³

In determining the Annual Volume Deficiency, the minimum bill multiplier shall not be less than 146.

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER:

115**LARGE VOLUME LOAD FACTOR SERVICE****APPLICABILITY:**

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation, to a single terminal location ("Terminal Location"), of an annual supply of natural gas of not less than 292 times a specified maximum daily volume of not less than 1,165 cubic metres.

CHARACTER OF SERVICE:

Service shall be continuous (firm) except for events as specified in the Service Contract including force majeure.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	Billing Month January to December
Monthly Customer Charge	\$622.62
Delivery Charge	
Per cubic metre of Contract Demand	24.3600 ¢/m ³
Per cubic metre of gas delivered	
For the first 1,000,000 m ³ per month	0.4664 ¢/m ³
For all over 1,000,000 m ³ per month	0.3664 ¢/m ³
Gas Supply Load Balancing Charge	0.1172 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0145 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

On the second and subsequent occasion in a contract year when the Applicant takes Unauthorized Demand Overrun Gas, a new Contract Demand will be established and shall be charged equal to 120% of the applicable monthly charge for twelve months of the current contract term, including retroactively based on the terms of the Service Contract.

EFFECTIVE DATE:

January 1, 2018

IMPLEMENTATION DATE:

January 1, 2018

BOARD ORDER:

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RATE NUMBER: 115

MINIMUM BILL:

Per cubic metre of Annual Volume Deficiency
(See Terms and Conditions of Service):

5.9652 ¢/m³

In determining the Annual Volume Deficiency the minimum bill multiplier shall not be less than 292.

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER: **125****EXTRA LARGE FIRM DISTRIBUTION SERVICE****APPLICABILITY:**

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation, to a single terminal location ("Terminal Location"), of a specified maximum daily volume of natural gas. The maximum daily volume for billing purposes, Contract Demand or Billing Contract Demand, as applicable, shall not be less than 600,000 cubic metres. The Service under this rate requires Automatic Meter Reading (AMR) capability.

CHARACTER OF SERVICE:

Service shall be firm except for events specified in the Service Contract including force majeure.

For Non-Dedicated Service the monthly demand charges payable shall be based on the Contract Demand which shall be 24 times the Hourly Demand and the Applicant shall not exceed the Hourly Demand.

For Dedicated Service the monthly demand charges payable shall be based on the Billing Contract Demand or the Contract Demand specified in the Service Contract. The Applicant shall not exceed an hourly flow calculated as 1/24th of the Contract Demand specified in the Service Contract.

DISTRIBUTION RATES:

The following rates and charges, as applicable, shall apply for deliveries to the Terminal Location.

Monthly Customer Charge	\$500.00		
Demand Charge			
Per cubic metre of the Contract Demand or the Billing Contract Demand, as applicable, per month	9.9516 ¢/m³		
	<u>Non-Dedicated</u>	<u>Dedicated</u>	
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³	3.5599 ¢/m³	
Cap and Trade Facility Related Charge	0.0336 ¢/m³	0.0016 ¢/m³	
Direct Purchase Administration Charge	\$75.00		
Forecast Unaccounted For Gas Percentage	0.7%		

Monthly Minimum Bill: The Monthly Customer Charge plus the Monthly Demand Charge.

TERMS AND CONDITIONS OF SERVICE:

- To the extent that this Rate Schedule does not specifically address matters set out in PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** then the provisions in those Parts shall apply, as contemplated therein, to service under this Rate Schedule.

- Unaccounted for Gas (UFG) Adjustment Factor:**

The Applicant is required to deliver to the Company on a daily basis the sum of: (a) the volume of gas to be delivered to the Applicant's Terminal Location; and (b) a volume of gas equal to the forecast unaccounted for gas percentage as stated above multiplied by (a). In the case of a Dedicated Service, the Unaccounted for Gas volume requirement is not applicable.

- Nominations:**

Customer shall nominate gas delivery daily based on the gross commodity delivery required to serve the customer's daily load plus the UFG. Customers may change daily nominations based on the nomination windows within a day as defined by the customer contract with TransCanada PipeLines (TCPL) or Union Gas Limited.

Schedule of nominations under Rate 125 has to match upstream nominations. This rate does not allow for any more flexibility than exists upstream of the EGD gas distribution system. Where the customer's nomination does not match the confirmed upstream nomination, the nomination will be confirmed at the upstream value.

Customer may nominate gas to a contractually specified Primary Delivery Area that may be EGD's Central Delivery Area (CDA) or EGD's Eastern Delivery Area (EDA) or other Delivery Area as specified in the applicable Service Contract. The Company may accept deliveries at a Secondary Delivery Area such as Dawn, at its sole discretion. Quantities of gas nominated to the system cannot exceed the Contract Demand, unless Make-up Gas or Authorized Overrun is permitted.

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RATE NUMBER: **125**

Customers with multiple Rate 125 contracts within a Primary Delivery Area may combine nominations subject to system operating requirements and subject to the Contract Demand for each Terminal Location. For combined nominations the customer shall specify the quantity of gas to each Terminal Location and the order in which gas is to be delivered to each Terminal Location. The specified order of deliveries shall be used to administer Load Balancing Provisions to each Terminal Location. When system conditions require delivery to a single Terminal Location only, nominations with different Terminal Locations may not be combined.

The Company permits pooling of Rate 125 contracts for legally related customers who meet the Business Corporations Act (Ontario) ("OBICA") definition of "affiliates" to allow for the management of those contracts by a single manager. The single manager is jointly liable with the individual customers for all of their obligations under the contracts, while the individual customers are severally liable for all of their obligations under their own contracts.

4. Authorized Demand Overrun:

The Company may, at its sole discretion, authorize consumption of gas in excess of the Contract Demand for limited periods within a month, provided local distribution facilities have sufficient capacity to accommodate higher demand. In such circumstances, customer shall nominate gas delivery based on the gross commodity delivery (the sum of the customer's Contract Demand and the authorized overrun amount) required to serve the customer's daily load, plus the UFG. In the event that gas usage exceeds the gas delivery on a day where demand overrun is authorized, the excess gas consumption shall be deemed Supply Overrun Gas.

Such service shall not exceed 5 days in any contract year. Based on the terms of the Service Contract, requests beyond 5 days will constitute a request for a new Contract Demand level with retroactive charges. The new Contract Demand level may be restricted by the capability of the local distribution facilities to accommodate higher demand.

Automatic authorization of transportation overrun over the Billing Contract Demand will be given in the case of Dedicated Service to the Terminal Location provided that pipeline capacity is available and subject to the Contract Demand as specified in the Service Contract.

Authorized Demand Overrun Rate

0.33 ¢/m³

The Authorized Demand Overrun Rate may be applied to commissioning volumes at the Company's sole discretion, for a contractual period of not more than one year, as specified in the Service Contract.

5. Unauthorized Demand Overrun:

Any gas consumed in excess of the Contract Demand and/or maximum hourly flow requirements, if not authorized, will be deemed to be Unauthorized Demand Overrun gas. Unauthorized Demand Overrun gas may establish a new Contract Demand effective immediately and shall be subject to a charge equal to 120 % of the applicable monthly charge for twelve months of the current contract term, including retroactively based on terms of Service Contract. Based on capability of the local distribution facilities to accommodate higher demand, different conditions may apply as specified in the applicable Service Contract. Unauthorized Demand Overrun gas shall also be subject to Unauthorized Supply Overrun provisions.

6. Unauthorized Supply Overrun:

Any volume of gas taken by the Applicant on a day at the Terminal Location which exceeds the sum of:

- i. any applicable provisions of Rate 315 and any applicable Load Balancing Provision pursuant to Rate 125, plus
- ii. the volume of gas delivered by the Applicant on that day shall constitute Unauthorized Supply Overrun Gas.

The Company may also deem volumes of gas to be Unauthorized Supply Overrun gas in other circumstances, as set out in the Load Balancing Provisions of Rate 125.

Any gas deemed to be Unauthorized Overrun gas shall be purchased by the customer at a price (Pe), which is equal to 150% of the highest price in effect for that day as defined below*.

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RATE NUMBER: **125**

7. Unauthorized Supply Underrun:

Any volume of gas delivered by the Applicant on any day in excess of the sum of:

- i. any applicable provisions of Rate 315 and any applicable Load Balancing Provision pursuant to Rate 125, plus
- ii. the volume of gas taken by the Applicant at the Terminal Location on that day shall be classified as Supply Underrun Gas.

The Company may also deem volumes of gas to be Unauthorized Supply Underrun gas in other circumstances, as set out in the Load Balancing Provisions of Rate 125.

Any gas deemed to be Unauthorized Supply Underrun Gas shall be purchased by the Company at a price (P_u) which is equal to fifty percent (50%) of the lowest price in effect for that day as defined below**.

* where the price P_e expressed in cents / cubic metre is defined as follows:

$$P_e = (P_m * E_r * 100 * 0.03842 / 1.055056) * 1.5$$

P_m = highest daily price in U.S. \$/mmBtu published in the Gas Daily, a Platts Publication, for that day under the column "Absolute", for the Niagara export point if the terminal location is in the CDA delivery area, and the Iroquois export point if the terminal location is in the EDA delivery area.

E_r = **Daily Average exchange rate** expressed in Canadian dollars per U.S. dollar for such day quoted by the Bank of Canada in the following day's Globe & Mail Publication.

1.055056 = Conversion factor from mmBtu to GJ.

0.03769 = Conversion factor from GJ to cubic metres.

** where the price P_u expressed in cents / cubic metre is defined as follows:

$$P_u = (P_l * E_r * 100 * 0.03842 / 1.055056) * 0.5$$

P_l = lowest daily price in U.S. \$/mmBtu published in the Gas Daily, a Platts Publication, for that day under the column "Absolute", for the Niagara export point if the terminal location is in the CDA delivery area, and the Iroquois export point if the terminal location is in the EDA delivery area.

Term of Contract:

A minimum of one year. A longer-term contract may be required if incremental contracts/assets/facilities have been procured/built for the customer. Migration from an unbundled rate to bundled rate may be restricted subject to availability of adequate transportation and storage assets.

Right to Terminate Service:

The Company reserves the right to terminate service to customers served hereunder where the customer's failure to comply with the parameters of this rate schedule, including the load balancing provisions, jeopardizes either the safety or reliability of the gas system. The Company shall provide notice to the customer of such termination; however, no notice is required to alleviate emergency conditions.

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RATE NUMBER: 125

LOAD BALANCING PROVISIONS:

Load Balancing Provisions shall apply at the customer's Terminal Location or at the location of the meter installation for a customer served from a dedicated facility. In the event of an imbalance any excess delivery above the customer's actual consumption or delivery less than the actual consumption shall be subject to the Load Balancing Provisions.

Definitions:

Aggregate Delivery:

The Aggregate Delivery for a customer's account shall equal the sum of the confirmed nominations of the customer for delivery of gas to the applicable delivery area from all pipeline sources including where applicable, the confirmed nominations of the customer for Storage Service under Rate 316 or Rate 315 and any available No-Notice Storage Service under Rate 315 for delivery of gas to the Applicable Delivery Area.

Applicable Delivery Area:

The Applicable Delivery Area for each customer shall be specified by contract as a Primary Delivery Area. Where system-operating conditions permit, the Company, in its sole discretion, may accept a Secondary Delivery Area as the Applicable Delivery Area by confirming the customer's nomination of such area. Confirmation of a Secondary Delivery Area for a period of a gas day shall cause such area to become the Applicable Delivery Area for such day. Where delivery occurs at both a Terminal Location and a Secondary Delivery Area on a given day, the sum of the confirmed deliveries may not exceed the Contract Demand, unless Demand Overrun and/or Make-up Gas is authorized.

Primary Delivery Area:

The Primary Delivery Area shall be delivery area such as EGD's Central Delivery Area (CDA) or EGD's Eastern Delivery Area (EDA), or other Delivery Area as specified in the applicable Service Contract.

Secondary Delivery Area:

A Secondary Delivery Area may be a delivery area such as Dawn where the Company, at its sole discretion, determines that operating conditions permit gas deliveries for a customer.

Actual Consumption:

The Actual Consumption of the customer shall be the metered quantity of gas consumed at the customer's Terminal Location or in the event of combined nominations at the Terminal Locations specified.

Net Available Delivery:

The Net Available Delivery shall equal the Aggregate Delivery times one minus the annually determined percentage of Unaccounted for Gas (UFG) as reported by the Company.

Daily Imbalance:

The Daily Imbalance shall be the absolute value of the difference between Actual Consumption and Net Available Delivery.

Cumulative Imbalance:

The Cumulative Imbalance shall be the sum of the difference between Actual Consumption and Net Available Delivery since the date the customer last balanced or was deemed to have balanced its Cumulative Imbalance account.

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RATE NUMBER: **125**

Maximum Contractual Imbalance:

The Maximum Contractual Imbalance shall be equal to 60% of the customer's Contract Demand for non dedicated service and 60% of the Billing Contract Demand for dedicated service.

Winter and Summer Seasons:

The winter season shall commence on the date that the Company provides notice of the start of the winter period and conclude on the date that the Company provides notice of the end of the winter period. The summer season shall constitute all other days. The Company shall provide advance notice to the customer of the start and end of the winter season as soon as reasonably possible, but in no event not less than 2 days prior to the start or end.

Operational Flow Order:

An Operational Flow Order (OFO) shall constitute an issuance of instructions to protect the operational capacity and integrity of the Company's system, including distribution and/or storage assets, and/or connected transmission pipelines.

Enbridge Gas Distribution, acting reasonably, may call for an OFO in the following circumstances:

- Capacity constraint on the system, or portions of the system, or upstream systems, that are fully utilized;
- Conditions where the potential exists that forecasted system demand plus reserves for short notice services provided by the Company and allowances for power generation customers' balancing requirements would exceed facility capabilities and/or provisions of 3rd party contracts;
- Pressures on the system or specific portions of the system are too high or too low for safe operations;
- Storage system constraints on capacity or pressure or caused by equipment problems resulting in limited ability to inject or withdraw from storage;
- Pipeline equipment failures and/or damage that prohibits the flow of gas;
- Any and all other circumstances where the potential for system failure exists.

Daily Balancing Fee:

On any day where the customer has a Daily Imbalance the customer shall pay a Daily Balancing Fee equal to:

(Tier 1 Quantity X Tier 1 Fee) + (Tier 2 Quantity X Tier 2 Fee) + (Applicable Penalty Fee for Imbalance in excess of the Maximum Contractual Imbalance X the amount of Daily Imbalance in excess of the Maximum Contractual Imbalance)

Where Tier 1 and 2 Fees and Quantities are set forth as follows:

Tier 1 = 0.917 cents/m3 applied to Daily Imbalance of greater than 2% but less than 10% of the Maximum Contractual Imbalance

Tier 2 = 1.1004 cents/m3 applied to Daily Imbalance of greater than 10% but less than the Maximum Contractual Imbalance

In addition for Tier 2, instances where the Daily Imbalance represents an under delivery of gas during the winter season shall constitute Unauthorized Supply Overrun Gas for all gas in excess of 10% of Maximum Contractual Imbalance. Where the Daily Imbalance represents an over delivery of gas during the summer season, the Company reserves the right to deem as Unauthorized Supply Underrun Gas for all gas in excess of 10% of Maximum Contractual Imbalance. The Company will issue a 24-hour advance notice to customers of its intent to impose cash out for over delivery of gas during the summer season.

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RATE NUMBER: **125**

For customers delivering to a Primary Delivery Area other than EGD's CDA or EGD's EDA, the Tier 1 Fee is applied to Daily Imbalance of greater than 0% but less than 10% of the Maximum Contractual Imbalance

The customers shall also pay any Limited Balancing Agreement (LBA) charges imposed by the pipeline on days when the customer has a Daily Imbalance provided such imbalance matches the direction of the pipeline imbalance. LBA charges shall first be allocated to customers served under Rates 125 and 300. The system bears a portion of these charges only to the extent that the system incurs such charges based on its operation excluding the operation of customers under Rates 125 and 300. In that event, LBA charges shall be prorated based on the relative imbalances. The Company will provide the customer with a derivation of any such charges.

Customer's Actual Consumption cannot exceed Net Available Delivery when the Company issues an Operational Flow Order in the winter. Net nominations must not be less than consumption at the Terminal Location. Any negative Daily Imbalance on a winter Operational Flow Order day shall be deemed to be Unauthorized Supply Overrun. Customer's Net Available Delivery cannot exceed Actual Consumption when the Company issues an Operational Flow Order in the summer. Actual Consumption must not be less than net nomination at the Terminal Location. Any positive Daily Imbalance on a summer Operational Flow Order day shall be deemed to be Unauthorized Supply Underrun.

The Company will waive Daily Balancing Fee and Cumulative Imbalance Charge on the day of an Operational Flow Order if the customer used less gas than the amount the customer delivered to the system during the winter season or the customer used more gas than the amount the customer delivered to the system during the summer season. The Company will issue a 24-hour advance notice to customers of Operational Flow Orders and suspension of Load Balancing Provisions.

Cumulative Imbalance Charges:

Customers may trade Cumulative Imbalances within a delivery area. Customers may also nominate to transfer gas from their Cumulative Imbalance Account into an unbundled (Rate 315 or Rate 316) storage account of the customer subject to their storage contract parameters.

Customers shall be permitted to nominate Make-up Gas, subject to operating constraints, provided that Make-up Gas plus Aggregate Delivery do not exceed the Contract Demand. The Company may, on days with no operating constraints, authorize Make-up Gas that, in conjunction with Aggregate Delivery, exceeds the Contract Demand.

The customer's Cumulative Imbalance cannot exceed its Maximum Contractual Imbalance. In the event that the customer's imbalance exceeds their Maximum Contractual Imbalance the Company shall deem the excess imbalance to be Unauthorized Supply Overrun or Underrun gas, as appropriate.

The Cumulative Imbalance Fee, applicable daily, is 1.0777 cents/m3 per unit of imbalance.

In addition, on any day that the Company declares an Operational Flow Order, negative Cumulative Imbalances greater than 10 % of Maximum Contractual Imbalance in the winter season shall be deemed to be Unauthorized Overrun Gas. The Company reserves the right to deem positive Cumulative Imbalances greater than 10% of Maximum Contractual Imbalance in the summer season as Unauthorized Supply Underun Gas. The Company will issue a 24-hour advance notice to customers of Operational Flow Orders including cash out instructions for Cumulative Imbalances greater than 10 % of Maximum Contractual Imbalance.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RATE NUMBER: 135	SEASONAL FIRM SERVICE
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APPLICABILITY:

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation, to a single terminal location ("Terminal Location"), of an annual supply of natural gas of not less than 340,000 cubic metres.

CHARACTER OF SERVICE:

Service shall be continuous (firm) except for events as specified in the Service Contract including force majeure. A maximum of five percent of the contracted annual volume may be taken by the Applicant in a single month during the months of December to March inclusively.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	Billing Month	
	December to March	April to November
Monthly Customer Charge	\$115.08	\$115.08
Delivery Charge		
For the first 14,000 m ³ per month	7.1962 ¢/m ³	2.4962 ¢/m ³
For the next 28,000 m ³ per month	5.9962 ¢/m ³	1.7962 ¢/m ³
For all over 42,000 m ³ per month	5.5962 ¢/m ³	1.5962 ¢/m ³
Gas Supply Load Balancing Charge	0.0000 ¢/m ³	0.0000 ¢/m ³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m ³	5.4151 ¢/m ³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m ³	1.1650 ¢/m ³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0215 ¢/m ³	12.0215 ¢/m ³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m ³	3.5599 ¢/m ³
Cap and Trade Facility Related Charge	0.0386 ¢/m ³	0.0386 ¢/m ³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

The applicant has the option of delivering either Option a) a Mean Daily Volume ("MDV") based on 12 months, or Option b) a Modified Mean Daily Volume ("MMDV") based on nine months of deliveries. Authorized Volumes for the months of January, February and March would be zero under option b).

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

Failure to deliver a volume of gas equal to the Mean Daily Volume under Option a) set out in the Service Contract during the months of December to March inclusive may result in the Applicant not being eligible for service under this rate in a subsequent contract period, at the Company's sole discretion.

Failure to deliver a volume of gas equal to the Modified Mean Daily Volume under Option b) set out in the Service Contract during the month of December may result in the Applicant not being eligible for service under this rate in a subsequent contract period, at the Company's sole discretion.

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RATE NUMBER: **135**

SEASONAL CREDIT:

Rate per cubic metre of Mean Daily Volume from December to March	\$ 0.77 /m ³
Rate per cubic metre of Modified Mean Daily Volume for December	\$ 0.77 /m ³

SEASONAL OVERRUN CHARGE:

During the months of December through March inclusively, any volume of gas taken in a single month in excess of five percent of the annual contract volume (Seasonal Overrun Monthly Volume) will be subject to Seasonal Overrun Charges in place of both the Delivery and Gas Supply Load Balancing Charges. The Seasonal Overrun Charge applicable for the months of December and March shall be calculated as 2.0 times the sum of the Gas Supply Load Balancing Charge, Transportation Charge and the maximum Delivery Charge. The Seasonal Overrun Charge applicable for the months of January and February shall be calculated as 5.0 times the sum of the Load Balancing Charge, Transportation Charge and the maximum Delivery Charge.

Seasonal Overrun Charges:

December and March	25.2226 ¢/m ³
January and February	63.0565 ¢/m ³

MINIMUM BILL:

Per cubic metre of Annual Volume Deficiency (See Terms and Conditions of Service):	9.4445 ¢/m ³
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TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER

145**INTERRUPTIBLE SERVICE****APPLICABILITY:**

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation of a specified maximum daily volume of natural gas to a single terminal location ("Terminal Location") which can accommodate the total interruption of gas service as ordered by the Company exercising its sole discretion. The Company reserves the right to satisfy itself that the customer can accommodate the interruption of gas through either a shutdown of operations or a demonstrated ability and readiness to switch to an alternative fuel source. Any Applicant for service under this rate schedule must agree to transport a minimum annual volume of 340,000 cubic metres.

CHARACTER OF SERVICE:

In addition to events as specified in the Service Contract including force majeure, service shall be subject to curtailment or discontinuance upon the Company issuing a notice not less than 16 hours prior to the time at which such curtailment or discontinuance is to commence. An Applicant may, by contract, agree to accept a shorter notice period.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	<u>Billing Month</u> January to December <u>\$123.34</u>
Monthly Customer Charge	
Delivery Charge	
Per cubic metre of Contract Demand	8.2300 ¢/m ³
For the first 14,000 m ³ per month	3.0401 ¢/m ³
For the next 28,000 m ³ per month	1.6811 ¢/m ³
For all over 42,000 m ³ per month	1.1221 ¢/m ³
Gas Supply Load Balancing Charge	0.7224 ¢/m ³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m ³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m ³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0182 ¢/m ³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m ³
Cap and Trade Facility Related Charge	0.0386 ¢/m ³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

CURTAILMENT CREDIT:

Rate for 16 hours of notice per cubic metre of Mean Daily Volume from December to March \$ 0.50 /m³

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In addition, if the Applicant is supplying its own gas requirements, the gas delivered by the Applicant during the period of curtailment shall be purchased by the Company for the Company's use. The purchase price for such gas will be equal to the price that is reported for the month, in the first issue of the *Natural Gas Market Report* published by Canadian Enerdata Ltd. during the month, as the "current" "Avg." (i.e., average) "Alberta One-Month Firm Spot Price" for "AECO 'C' and Nova Inventory Transfer" in the table entitled "Domestic spot gas prices", adjusted for AECO to Empress transportation tolls and compressor fuel costs.

For the areas specified in Appendix A to this Rate Schedule, the Company's gas distribution network does not have sufficient physical capacity under current operating conditions to accommodate the provision of firm service to existing interruptible locations.

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

Any material instance of failure to curtail in any contract year may result in the Applicant forfeiting the right to be served under this rate schedule.

In such case, service hereunder would cease, notwithstanding any Service Contract between the Company and the Applicant. Gas supply and/or transportation service would continue to be available to the Applicant pursuant to the provisions of the Company's Rate 6 until a Service Contract pursuant to another applicable Rate Schedule was executed.

Any Applicant taking a material volume of Unauthorized Supply Overrun Gas, during a period of ordered curtailment, may forfeit its curtailment credits for the respective winter season, December through March inclusive.

On the second and subsequent occasion in a contract year when the Applicant takes Unauthorized Demand Overrun Gas, a new Contract Demand will be established and shall be charged equal to 120% of the applicable monthly charge for twelve months of the current contract term, including retroactively based on the terms of the Service Contract.

MINIMUM BILL:

Per cubic metre of Annual Volume Deficiency
(See Terms and Conditions of Service):

9.1442 ¢/m³

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER	170	LARGE INTERRUPTIBLE SERVICE
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APPLICABILITY:

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation of a specified maximum daily volume of natural gas of not less than 30,000 cubic metres and a minimum annual volume of 5,000,000 cubic metres to a single terminal location ("Terminal Location") which can accommodate the total interruption of gas service when required by the Company. The Company reserves the right to satisfy itself that the customer can accommodate the interruption of gas through either a shutdown of operations or a demonstrated ability and readiness to switch to an alternative fuel source. The Company, exercising its sole discretion, may order interruption of gas service upon not less than four (4) hours notice.

CHARACTER OF SERVICE:

In addition to events as specified in the Service Contract including force majeure, service shall be subject to curtailment or discontinuance upon the Company issuing a notice not less than 4 hours prior to the time at which such curtailment or discontinuance is to commence.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	<u>Billing Month</u> <u>January</u> to <u>December</u>
Monthly Customer Charge	\$279.31
Delivery Charge	
Per cubic metre of Contract Demand	4.0900 ¢/m ³
Per cubic metre of gas delivered	
For the first 1,000,000 m ³ per month	0.5797 ¢/m ³
For all over 1,000,000 m ³ per month	0.3797 ¢/m ³
Gas Supply Load Balancing Charge	0.3173 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0145 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

The rates quoted above shall be subject to the Gas Cost Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". In addition, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable if the Applicant is not providing its own supply of natural gas for transportation.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

CURTAILMENT CREDIT:

Rate for 4 hours of notice per cubic metre of Mean Daily Volume from December to March \$ 1.10 /m³

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In addition, if the Applicant is supplying its own gas requirements, the gas delivered by the Applicant during the period of curtailment shall be purchased by the Company for the Company's use. The purchase price for such gas will be equal to the price that is reported for the month, in the first issue of the *Natural Gas Market Report* published by Canadian Enerdata Ltd. during the month, as the "current" "Avg." (i.e., average) "Alberta One-Month Firm Spot Price" for "AECO 'C' and Nova Inventory Transfer" in the table entitled "Domestic spot gas prices", adjusted for AECO to Empress transportation tolls and compressor fuel costs.

For the areas specified in Appendix A to this Rate Schedule, the Company's gas distribution network does not have sufficient physical capacity under current operating conditions to accommodate the provision of firm service to existing interruptible locations.

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

Any material instance of failure to curtail in any contract year may result in the Applicant forfeiting the right to be served under this rate schedule.

In such case, service hereunder would cease, notwithstanding any Service Contract between the Company and the Applicant. Gas supply and/or transportation service would continue to be available to the Applicant pursuant to the provisions of the Company's Rate 6 until a Service Contract pursuant to another applicable Rate Schedule was executed.

Any Applicant taking a material volume of Unauthorized Supply Overrun Gas, during a period of ordered curtailment, may forfeit its curtailment credits for the respective winter season, December through March inclusive.

On the second and subsequent occasion in a contract year when the Applicant takes Unauthorized Demand Overrun Gas, a new Contract Demand will be established and shall be charged equal to 120% of the applicable monthly charge for twelve months of the current contract term, including retroactively based on the terms of the Service Contract.

MINIMUM BILL:

Per cubic metre of Annual Volume Deficiency
(See Terms and Conditions of Service):

6.2787 ¢/m³

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER:

200**WHOLESALE SERVICE****APPLICABILITY:**

To any Distributor who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation of an annual supply of natural gas to customers outside of the Company's franchise area.

CHARACTER OF SERVICE:

Service shall be continuous (firm), except for events as specified in the Service Contract including force majeure, up to the contracted firm daily demand and subject to curtailment or discontinuance, of demand in excess of the firm contract demand, upon the Company issuing a notice not less than 4 hours prior to the time at which such curtailment or discontinuance is to commence.

RATE:

Rates per cubic metre assume an energy content of 38.42 MJ/m³.

	<u>Billing Month</u> <u>January</u> <u>to</u> <u>December</u>
Monthly Customer Charge	
The monthly customer charge shall be negotiated with the applicant and shall not exceed:	\$2,000.00
Delivery Charge	
Per cubic metre of Firm Contract Demand	14.7000 ¢/m³
Per cubic metre of gas delivered	1.2872 ¢/m³
Gas Supply Load Balancing Charge	1.4688 ¢/m³
Transportation Charge per cubic metre (If applicable)	5.4151 ¢/m³
Transportation Dawn Charge per cubic metre (If applicable)	1.1650 ¢/m³
System Sales Gas Supply Charge per cubic metre (If applicable)	12.0145 ¢/m³
Buy/Sell Sales Gas Supply Charge per cubic metre (If applicable)	11.9951 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	0.0000 ¢/m³
Cap and Trade Facility Related Charge	0.0386 ¢/m³

The rates quoted above shall be subject to the Gas Inventory Adjustment contained in Rider "C" and the Revenue Adjustment Rider contained in Rider "E". Also, meter readings will be adjusted by the Atmospheric Pressure Factor relevant to the customer's location as shown in Rider "F". The Gas Supply Charge is applicable to volumes of natural gas purchased from the Company. The volumes purchased shall be the volumes delivered at the Point of Delivery less any volumes, which the Company does not own and are received at the Point of Acceptance for delivery to the Applicant at the Point of Delivery.

DIRECT PURCHASE ARRANGEMENTS:

Rider "A" or Rider "B" shall be applicable to Applicants who enter into Direct Purchase Arrangements under this Rate Schedule.

CURTAILMENT CREDIT:

Rate for 4 hours of notice per cubic metre of Mean Daily Volume from December to March \$ **1.10 /m³**

EFFECTIVE DATE:

January 1, 2018

IMPLEMENTATION DATE:

January 1, 2018

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In addition, if the Applicant is supplying its own gas requirements, the gas delivered by the Applicant during the period of curtailment shall be purchased by the Company for the Company's use. The purchase price for such gas will be equal to the price that is reported for the month, in the first issue of the *Natural Gas Market Report* published by Canadian Enerdata Ltd. during the month, as the "current" "Avg." (i.e., average) "Alberta One-Month Firm Spot Price" for "AECO 'C' and Nova Inventory Transfer" in the table entitled "Domestic spot gas prices", adjusted for AECO to Empress transportation tolls and compressor fuel costs.

For the areas specified in Appendix A to this Rate Schedule, the Company's gas distribution network does not have sufficient physical capacity under current operating conditions to accommodate the provision of firm service to existing interruptible locations.

UNAUTHORIZED OVERRUN GAS RATE:

When the Applicant takes Unauthorized Supply Overrun Gas, the Applicant shall purchase such gas at a rate of 150% of the highest price on each day on which an overrun occurred for the calendar month as published in the Gas Daily for the Niagara and Iroquois export points for the CDA and EDA respectively.

Any material instance of failure to curtail in any contract year may result in the Applicant forfeiting the right to receive interruptible service under this rate schedule.

Any Applicant taking a material volume of Unauthorized Supply Overrun Gas, during a period of ordered curtailment, may forfeit its curtailment credits for the respective winter season, December through March inclusive.

On the second and subsequent occasion in a contract year when the Applicant takes Unauthorized Demand Overrun Gas, a new Contract Demand will be established and shall be charged equal to 120% of the applicable monthly charge for twelve months of the current contract term, including retroactively based on the terms of the Service Contract.

MINIMUM BILL:

Per cubic metre of Annual Volume Deficiency
(See Terms and Conditions of Service):

8.1377 ¢/m³

TERMS AND CONDITIONS OF SERVICE:

The provisions of PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** apply, as contemplated therein, to service under this Rate Schedule.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service including Buy/Sell Arrangements and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates as the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER **300****FIRM OR INTERRUPTIBLE DISTRIBUTION SERVICE****APPLICABILITY:**

To any Applicant who enters into a Service Contract with the Company to use the Company's natural gas distribution network for the transportation to a single Terminal Location of a specified maximum daily volume of natural gas. The Company reserves the right to limit service under this schedule to customers whose maximum contract demand does not exceed 600,000 m3. The Service under this rate requires Automatic Meter Reading (AMR) capability. Service under this schedule is firm unless a customer is currently served under interruptible distribution service or the Company, in its sole judgment, determines that existing delivery facilities cannot adequately serve the load on a firm basis.

The unitized Monthly Contract Demand Charge is also applicable to volumes delivered to any Applicant taking service under a Curtailment Delivered Supply contract with the Company. The unitized rate equals the applicable Monthly Contract Demand Charge times 12/365.

CHARACTER OF SERVICE:

The Service shall be continuous (firm) except for events specified in the Service Contract including force majeure. The Applicant is neither allowed to take a daily quantity of gas greater than the Contract Demand nor an hourly amount in excess of the Contract Demand divided by 24, without the Company's prior consent. Interruptible Distribution Service is provided on a best efforts basis subject to the events identified in the service contract including force majeure and, in addition, shall be subject to curtailment or discontinuance of service when the Company notifies the customer under normal circumstances 4 hours prior to the time that service is subject to curtailment or discontinuance. Under emergency conditions, the Company may curtail or discontinue service on one-hour notice. The Interruptible Service Customer is not allowed to exceed maximum hourly flow requirements as specified in Service Contract.

DISTRIBUTION RATES:

Monthly Customer Charge	\$500.00	
Monthly Contract Demand Charge Firm	26.9524 ¢/m³	
Interruptible Service:		
Minimum Delivery Charge	0.3926 ¢/m³	
Maximum Delivery Charge	1.0633 ¢/m³	
	<u>Firm</u>	<u>Interruptible</u>
Cap and Trade Customer Related Charge (If applicable)	3.5599 ¢/m³	3.5599 ¢/m³
Cap and Trade Facility Related Charge	0.0336 ¢/m³	0.0336 ¢/m³
Direct Purchase Administration Charge	\$75.00	
Forecast Unaccounted For Gas Percentage	0.7%	

Monthly Minimum Bill: The Monthly Customer Charge plus the Monthly Contract Demand Charge.

TERMS AND CONDITIONS OF SERVICE:

- To the extent that this Rate Schedule does not specifically address matters set out in PARTS III and IV of the Company's **HANDBOOK OF RATES AND DISTRIBUTION SERVICES** then the provisions in those Parts shall apply, as contemplated therein, to service under this Rate Schedule.

- Unaccounted for Gas (UFG) Adjustment Factor:**

The Applicant is required to deliver to the Company on a daily basis the sum of: (a) the volume of gas to be delivered to the Applicant's Terminal Location; and (b) a volume of gas equal to the forecast unaccounted for gas percentage as stated above multiplied by (a).

- Nominations:**

Customer shall nominate gas delivery daily based on the gross commodity delivery required to serve the customer's daily load plus the UFG, net of No-Notice Storage Service provisions under Rate 315, if applicable. The amount of gas delivered under No-Notice Storage Service will also be reduced by the UFG adjustment factor for delivery to the customer's meter.

Customers may change daily nominations based on the nomination windows within a day as defined by the customer contract with TransCanada PipeLines (TCPL) or Union Gas Limited.

Schedule of nominations under Rate 300 has to match upstream nominations. This rate does not allow for any more flexibility than exists upstream of the EGD gas distribution system. Where the customer's nomination does not match the confirmed upstream nomination, the nomination will be confirmed at the upstream value.

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Customer may nominate gas to a contractually specified Primary Delivery Area that may be EGD's Central Delivery Area (CDA) or EGD's Eastern Delivery Area (EDA) or other Delivery Area as specified in the applicable Service Contract. The Company may accept deliveries at a Secondary Delivery Area such as Dawn, at its sole discretion. Quantities of gas nominated to the system cannot exceed Contract Demand, unless Make-up Gas or Authorized Overrun is permitted.

Customers with multiple Rate 300 contracts within a Primary Delivery Area may combine nominations subject to system operating requirements and subject to the Contract Demand for each Terminal Location. For combined nominations the customer shall specify the quantity of gas to each Terminal Location and the order in which gas is to be delivered to each Terminal Location. The specified order of deliveries shall be used to administer Load Balancing Provisions to each Terminal Location. When system conditions require delivery to a single Terminal Location only, nominations with different Terminal Locations may not be combined.

4. Authorized Demand Overrun:

The Company may, at its sole discretion, authorize consumption of gas in excess of the Contract Demand for limited periods within a month, provided local distribution facilities have sufficient capacity to accommodate higher demand. In such circumstances, customer shall nominate gas delivery based on the gross commodity delivery required to serve the customer's daily load, including quantities of gas in excess of the Contract Demand, plus the UFG. The Load Balancing Provisions and/or No-Notice Storage Service provisions under Rate 315 cannot be used for Authorized Demand Overrun. Failure to nominate gas deliveries to match Authorized Demand Overrun shall constitute Unauthorized Supply Overrun.

The rate applicable to Authorized Demand Overrun shall equal the applicable Monthly Demand Charge times 12/365 provided, however, that such service shall not exceed 5 days in any contract year. Requests beyond 5 days will constitute a request for a new Contract Demand level, with retroactive charges based on terms of Service Contract.

5. Unauthorized Demand Overrun:

Any gas consumed in excess of the Contract Demand and/or maximum hourly flow requirements, if not authorized, will be deemed to be Unauthorized Demand Overrun gas. Unauthorized Demand Overrun gas will establish a new Contract Demand and shall be subject to a charge equal to 120 % of the applicable monthly charge for twelve months of the current contract term, including retroactively based on terms of Service Contract. Unauthorized Demand Overrun gas shall also be subject to Unauthorized Supply Overrun provisions. Where a customer receives interruptible service hereunder and consumes gas during a period of interruption, such gas shall be deemed Unauthorized Supply Overrun. In addition to charges for Unauthorized Supply Overrun, interruptible customers consuming gas during a scheduled interruption shall pay a penalty charge of \$18.00 per m3.

6. Unauthorized Supply Overrun:

Any volume of gas taken by the Applicant on a day at the Terminal Location which exceeds the sum of:

- i. any applicable Load Balancing Provision pursuant to Rate 300 and/or provisions of Rate 315, plus
- ii. the volume of gas delivered by the Applicant on that day shall constitute Unauthorized Supply Overrun Gas.

The Company may also deem volumes of gas to be Unauthorized Supply Overrun gas in other circumstances, as set out in the Load Balancing Provisions of Rate 300.

Any gas deemed to be Unauthorized Overrun gas shall be purchased by the customer at a price (Pe), which is equal to 150% of the highest price in effect for that day as defined below*.

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7. Unauthorized Supply Underrun:

Any volume of gas delivered by the Applicant on any day in excess of the sum of:

- i. any applicable Rate 300 Load Balancing Provision pursuant to Rate 300 and/or provisions of Rate 315, plus
- ii. the volume of gas taken by the Applicant at the Terminal Location on that day shall be classified as Supply Underrun Gas.

The Company may also deem volumes of gas to be Unauthorized Supply Underrun gas in other circumstances, as set out in the Load Balancing Provisions of Rate 300.

Any gas deemed to be Unauthorized Supply Underrun Gas shall be purchased by the Company at a price (P_u) which is equal to fifty percent (50%) of the lowest price in effect for that day as defined below**.

* where the price P_e expressed in cents / cubic metre is defined as follows:

$$P_e = (P_m * E_r * 100 * 0.03842 / 1.055056) * 1.5$$

P_m = highest daily price in U.S. \$/mmBtu published in the Gas Daily, a Platts Publication, for that day under the column "Absolute", for the Niagara export point if the terminal location is in the CDA delivery area, and the Iroquois export point if the terminal location is in the EDA delivery area.

E_r = **Daily Average exchange rate** expressed in Canadian dollars per U.S. dollar for such day quoted by the Bank of Canada in the following days Globe & Mail Publication.

1.055056 = Conversion factor from mmBtu to GJ.

0.03769 = Conversion factor from GJ to cubic metres.

** where the price P_u expressed in cents / cubic metre is defined as follows:

$$P_u = (P_l * E_r * 100 * 0.03842 / 1.055056) * 0.5$$

P_l = lowest daily price in U.S. \$/mmBtu published in the Gas Daily, a Platts Publication, for that day under the column "Absolute", for the Niagara export point if the terminal location is in the CDA delivery area, and the Iroquois export point if the terminal location is in the EDA delivery area.

Term of Contract:

A minimum of one year. A longer-term contract may be required if incremental assets/facilities have been procured/built for the customer. Migration from an unbundled rate to bundled rate may be restricted subject to availability of adequate transportation and storage assets.

Right to Terminate Service:

The Company reserves the right to terminate service to customers served hereunder where the customer's failure to comply with the parameters of this rate schedule, including interruptible service and load balancing provisions, jeopardizes either the safety or reliability of the gas system. The Company shall provide notice to the customer of such termination; however, no notice is required to alleviate emergency conditions.

Load Balancing:

Any difference between actual daily-metered consumption and the actual daily volume of gas delivered to the system less the UFG shall first be provided under the provisions of Rate 315 - Gas Storage Service, if applicable. Any remaining difference will be subject to the Load Balancing Provisions.

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LOAD BALANCING PROVISIONS:

Load Balancing Provisions shall apply at the customer's Terminal Location.

In the event of an imbalance any excess delivery above the customer's actual consumption or delivery less than the actual consumption shall be subject to the Load Balancing Provisions.

Definitions:

Aggregate Delivery:

The Aggregate Delivery for a customer's account shall equal the sum of the confirmed nominations of the customer for delivery of gas to the applicable delivery area from all pipeline sources plus, where applicable, the confirmed nominations of the customer for Storage Service under Rate 316 or Rate 315 and any available No-Notice Storage Service under Rate 315 for delivery of gas to the Applicable Delivery Area.

Applicable Delivery Area:

The Applicable Delivery Area for each customer shall be specified by contract as a Primary Delivery Area. Where system-operating conditions permit, the Company, in its sole discretion, may accept a Secondary Delivery Area as the Applicable Delivery Area by confirming the customer's nomination of such area. Confirmation of a Secondary Delivery Area for a period of a gas day shall cause such area to become the Applicable Delivery Area for such day. Where delivery occurs at both a Terminal Location and a Secondary Delivery Area on a given day, the sum of the confirmed deliveries may not exceed Contract Demand, unless Demand Overrun and/or Make-up Gas is authorized.

Primary Delivery Area:

The Primary Delivery Area shall be delivery area such as EGD's Central Delivery Area (CDA) or EGD's Eastern Delivery Area (EDA), or other Delivery Area as specified in the applicable Service Contract.

Secondary Delivery Area:

A Secondary Delivery Area may be a delivery area such as Dawn where the Company, at its sole discretion, determines that operating conditions permit gas deliveries for a customer.

Actual Consumption:

The Actual Consumption of the customer shall be the metered quantity of gas consumed at the customer's premise.

Net Available Delivery:

The Net Available Delivery shall equal the Aggregate Delivery times one minus the annually determined percentage of Unaccounted for Gas (UFG) as reported by the Company.

Daily Imbalance:

The Daily Imbalance shall be the absolute value of the difference between Actual Consumption and Net Available Delivery.

Cumulative Imbalance:

The Cumulative Imbalance shall be the sum of the difference between Actual Consumption and Net Available Delivery.

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Maximum Contractual Imbalance:

The Maximum Contractual Imbalance shall be equal to 60% of the customer's Contract Demand.

Winter and Summer Seasons:

The winter season shall commence on the date that the Company provides notice of the start of the winter period and conclude on the date that the Company provides notice of the end of the winter period. The summer season shall constitute all other days. The Company shall provide advance notice to the customer of the start and end of the winter season as soon as reasonably possible, but in no event not less than 2 days prior to the start or end.

Operational Flow Order:

An Operational Flow Order (OFO) shall constitute an issuance of instructions to protect the operational capacity and integrity of the Company's system, including distribution and/or storage assets, and/or connected transmission pipelines.

Enbridge Gas Distribution, acting reasonably, may call for an OFO in the following circumstances:

- Capacity constraint on the system, or portions of the system, or upstream systems, that are fully utilized;
- Conditions where the potential exists that forecasted system demand plus reserves for short notice services provided by the Company and allowances for power generation customers' balancing requirements would exceed facility capabilities and/or provisions of 3rd party contracts;
- Pressures on the system or specific portions of the system are too high or too low for safe operations;
- Storage system constraints on capacity or pressure or caused by equipment problems resulting in limited ability to inject or withdraw from storage;
- Pipeline equipment failures and/or damage that prohibits the flow of gas;
- Any and all other circumstances where the potential for system failure exists.

Daily Balancing Fee:

On any day where the customer has a Daily Imbalance the customer shall pay a Daily Balancing Fee equal to:

(Tier 1 Quantity X Tier 1 Fee) + (Tier 2 Quantity X Tier 2 Fee) + (Applicable Penalty Fee for Imbalance in excess of the Maximum Contractual Imbalance X the amount of Daily Imbalance in excess of the Maximum Contractual Imbalance)

Where Tier 1 and 2 Fees and Quantities are set forth as follows:

Tier 1 = Daily Imbalance of greater than 2% but less than 10% of the Maximum Contractual Imbalance and shall be subject to a charge of 0.917 cents/M3

Tier 2 = Daily Imbalance of greater than 10% but less than Maximum Contractual Imbalance shall be subject to a charge of 1.1004 cents/m3

The customers shall also pay any Limited Balancing Agreement (LBA) charges imposed by the pipeline on days when the customer has a Daily Imbalance provided such imbalance matches the direction of the pipeline imbalance. LBA charges shall first be allocated to customers served under Rate 125 and 300. The system bears a portion of these charges only to the extent that the system incurs such charges based on its operation excluding the operation of customers under Rates 125 and 300. In that event, LBA charges shall be prorated based on the relative imbalances.

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A Daily Imbalance in excess of the Maximum Contractual Imbalance shall be deemed to be Unauthorized Supply Overrun or Underrun gas, as appropriate.

Customer's Actual Consumption cannot exceed Net Available Delivery when the Company issues an Operational Flow Order in the winter. Net nominations must not be less than consumption at the Terminal Location. Any negative Daily Imbalance on a winter Operational Flow Order day shall be deemed to be Unauthorized Supply Overrun. Customer's Net Available Delivery cannot exceed Actual Consumption when the Company issues an Operational Flow Order in the summer. Actual Consumption must not be less than net nomination at the Terminal Location. Any positive Daily Imbalance on a summer Operational Flow Order day shall be deemed to be Unauthorized Supply Underrun.

The Company will waive Daily Balancing Fee and Cumulative Imbalance Charge on the day of an Operational Flow Order if the customer used less gas than the amount the customer delivered to the system during the winter season or the customer used more gas than the amount the customer delivered to the system during the summer season. The Company will issue a 24-hour advance notice to customers of Operational Flow Orders and suspension of Load Balancing Provisions.

Cumulative Imbalance Charges:

Customers may trade Cumulative Imbalances within a delivery area.

Customers shall be permitted to nominate Make-up Gas, subject to operating constraints, provided that Make-up Gas plus Aggregate Delivery do not exceed Contract Demand. The Company may, on days with no operating constraints, authorize Make-up Gas that, in conjunction with Aggregate Delivery, exceeds Contract Demand.

The customer's Cumulative Imbalance cannot exceed its Maximum Contractual Imbalance. The excess imbalance shall be deemed to be Unauthorized Supply Overrun or Underrun gas, as appropriate.

The Cumulative Imbalance Fee, applicable daily, is 0.7477 cents/m3 per unit of imbalance.

The customer's Cumulative Imbalance shall be equal to zero within five (5) days from the last day of the Service Contract.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RATE NUMBER 315	GAS STORAGE SERVICE
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APPLICABILITY:

This rate is available to any customer taking service under Distribution Rates 125 and 300. It requires a Service Contract that identifies the required storage space and deliverability. In addition, the customer shall maintain a positive balance of gas in storage at all times or forfeit the use of Storage Services for Load Balancing and No-Notice Storage Service.

A daily nomination for storage injection and withdrawal except for No-Notice Storage Service, hereunder, which is used automatically for daily Load Balancing, shall also be required.

The maximum hourly injections / withdrawals shall equal $1/24^{\text{th}}$ of the daily Storage Demand. No-Notice Storage Service is available up to the maximum daily withdrawal rights less the nominated withdrawal or the maximum daily injection rights less the nominated injections.

Storage space shall be based on either of two storage allocation methodologies: (customer's average winter demand - customer's average annual demand) x 151, or $[(17 \times \text{customer's maximum hourly demand}) / 0.1] \times 0.57$. Customers have the option to select from these two storage space allocation methods the one that best suits their requirements.

Maximum deliverability shall be 1.2% of contracted storage space. The customer may inject and withdraw gas based on the quantity of gas in storage and the limitations specified in the Service Contract. Both injection and withdrawal shall be subject to applicable storage ratchets as determined by the Company and posted from time to time.

CHARACTER OF SERVICE:

Service shall be firm when used in conjunction with firm distribution service. Service is interruptible when used in conjunction with interruptible distribution service. All service is subject to contract terms and force majeure.

The service is available on two bases:

- (1) Service nominated daily based on the available capacity and gas in storage up to the maximum contracted daily deliverability; and
- (2) No-Notice Storage Service for daily Load Balancing consistent with the maximum hourly deliverability.

RATE:

The following rates and charges shall apply in respect to all gas received by the Company from and delivered by the Company to storage on behalf of the Applicant.

Monthly Customer Charge:	\$150.00
Storage Reservation Charge:	
Monthly Storage Space Demand Charge	0.0542 ¢/m³
Monthly Storage Deliverability Demand Charge	23.7253 ¢/m³
Injection & Withdrawal Unit Charge:	0.2772 ¢/m³
Monthly Minimum Bill: The sum of the Monthly Customer Charge plus Monthly Demand Charges.	
Cap and Trade Customer Related Charge (If applicable)	0.0000 ¢/m³
Cap and Trade Facility Related Charge	0.0050 ¢/m³

FUEL RATIO REQUIREMENT:

The Fuel Ratio per unit of gas injected and withdrawn is 0.35%.

All Storage Space and Deliverability/Injection Demand Charges are applicable monthly. Injection and withdrawal charges are applicable to each unit of gas injected or withdrawn based on daily nominations and No-Notice Storage Service quantities.

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All deemed withdrawal quantities under the No-Notice Storage Service provisions of this rate will be adjusted for the UFG provisions applicable to the distribution service rates.

In addition, for each unit of injection or withdrawal there will be an applicable fuel charge adjustment expressed as a percent of gas.

TERMS AND CONDITIONS OF SERVICE:

1. Nominated Storage Service:

Nominations under this rate shall only be accepted at the standard North American Energy Standards Board ("NAESB") nomination windows. The customer may elect to nominate all or a portion of the available withdrawal capacity for delivery to the applicable Primary Delivery Area, which may be EGD's Central Delivery Area (CDA) or EGD's Eastern Delivery Area (EDA). All volumes nominated from storage are delivered first for purposes of daily Load Balancing of available supply assets. When system conditions permit, the customer may nominate all or a portion of the available withdrawal capacity for delivery to Dawn or to the customer's Primary Delivery Area for purposes other than consumption at the customer's own meter.

Storage not nominated for delivery will be available for No-Notice Storage Service. The sum of gas nominated for storage injection and for the Terminal Location shall not exceed the customer's Contract Demand (CD).

The customer may also nominate gas for delivery into storage by nominating the storage delivery area as the Primary Delivery Area. Gas nominated for storage delivery will not be available for No-Notice Storage Service. The sum of gas nominated for storage injection and for the Terminal Location shall not exceed the customer's CD. Any gas in excess of the contract demand will be subject to cash out as injection overrun gas.

The Company reserves the right to limit injection and withdrawal rights to all storage customers in certain situations, such as major maintenance or construction projects, and may reduce nominations for injections and withdrawals over and above applicable storage ratchets. The Company will provide customers with one week's notice of its intent to limit injection and withdrawal rights, and at the same time, shall provide its best estimate of the duration and extent of the limitations.

In situations where the Company limits injection and withdrawal rights, the Company shall proportionately reduce the Storage Deliverability/Injection Demand Charge for affected customers based on the number of days the limitation is in effect and the difference between Deliverability/Injection Demand, subject to applicable storage ratchets, and the quantity of gas actually delivered or injected.

2. No-Notice Storage Service:

The Company, at its sole discretion based on operating conditions, may provide a No-Notice Storage Service that allows customers taking gas under distribution service rates to balance daily deliveries using this Storage Service. No-Notice Storage Service requires that the customer grant the Company the exclusive right to use unscheduled service available from storage to reduce the daily imbalance associated with the actual consumption of the customer.

No-Notice Storage Service is limited to the available, unscheduled withdrawal or injection capacity under contract to serve a customer. Where the customer serves multiple delivery locations from a single storage Service Contract, the customer shall specify the order in which gas is to be delivered to each Terminal Location served under a distribution Service Contract. The specified order of deliveries shall be used to administer Load Balancing Provisions to each Terminal Location.

The availability of No-Notice Storage Service is subject to and reduced by any service schedule from or to storage. To the extent that the quantity of gas available in storage is insufficient to meet the requirements of the customer under a No-Notice Storage Service, the customer will be unable to use the service on a no-notice basis for Load Balancing service. To the extent that the scheduled injections into storage plus No-Notice Storage Service exceed the maximum limit for injection, No-Notice Storage Service will be reduced and the remainder of the gas will constitute a daily imbalance. Gas delivered in excess of the maximum injection quantity shall be deemed injection overrun gas and cashed out at 50% of the lowest index price of gas.

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Other provisions:

If the customer elects to use the contracted storage capacity at less than the full volumetric capacity of the storage, the Company may inject its own gas provided that such injection does not reduce the right of the customer to withdraw the full amount of gas injected on any day during the withdrawal season or to schedule its full injection right during the injection season.

Term of Contract:

A minimum of one year.

A longer-term contract may be required if incremental contracts/assets/facilities have been procured/built for the customer.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RATE NUMBER: **316**

GAS STORAGE SERVICE AT DAWN

APPLICABILITY:

This rate is available to any customer taking service under Distribution Rates 125 and 300. It requires a Service Contract that identifies the required storage space and deliverability. The customer shall maintain a positive balance of gas in storage at all times. In addition, the customer must arrange for pipeline delivery service from Dawn to the applicable Primary Delivery Area.

This service is not a delivered service and is only available when the relevant pipeline confirms the delivery.

The maximum hourly injections / withdrawals shall equal $1/24^{\text{th}}$ of the daily Storage Demand.

Storage space shall be based on either of two storage allocation methodologies: (customer's average winter demand - customer's average annual demand) x 151, or $[(17 \times \text{customer's maximum hourly demand}) / 0.1] \times 0.57$. Customers have the option to select from these two storage space allocation methods the one that best suits their requirements.

Maximum deliverability shall be 1.2% of contracted storage space. The customer may inject and withdraw gas based on the quantity of gas in storage and the limitations specified in the Service Contract. Both injection and withdrawal shall be subject to applicable storage ratchets as determined by the Company and posted from time to time.

CHARACTER OF SERVICE:

Service shall be firm when used in conjunction with firm distribution service. Service is interruptible when used in conjunction with interruptible distribution service. All service is subject to contract terms and force majeure.

The service is nominated based on the available capacity and gas in storage up to the maximum contracted daily deliverability.

RATE:

The following rates and charges shall apply in respect to all gas received by the Company from and delivered by the Company to storage on behalf of the Applicant.

Monthly Customer Charge: **\$150.00**

Storage Reservation Charge:

Monthly Storage Space Demand Charge **0.0542 ¢/m³**

Monthly Storage Deliverability Demand Charge **5.6313 ¢/m³**

Injection & Withdrawal Unit Charge: **0.1081 ¢/m³**

Monthly Minimum Bill: The sum of the Monthly Customer Charge plus Monthly Demand Charges.

Cap and Trade Customer Related Charge (If applicable) **0.0000 ¢/m³**

Cap and Trade Facility Related Charge **0.0050 ¢/m³**

FUEL RATIO REQUIREMENT:

The Fuel Ratio per unit of gas injected and withdrawn is 0.35%.

All Storage Space and Deliverability/Injection Demand Charges are applicable monthly. Injection and withdrawal charges are applicable to each unit of gas injected or withdrawn based on daily nominations.

In addition, for each unit of injection or withdrawal there will be an applicable fuel charge adjustment expressed as a percent of gas.

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TERMS AND CONDITIONS OF SERVICE:

Nominated Storage Service:

The customer shall nominate storage injections and withdrawals daily. The customer may change daily nominations based on the nomination windows within a day as defined by the customer contract with Union Gas Limited and TransCanada PipeLines (TCPL).

The customer may elect to nominate all or a portion of the available withdrawal capacity for delivery to the applicable Primary Delivery Area.

The Company reserves the right to limit injection and withdrawal rights to all storage customers in certain situations, such as major maintenance or construction projects, and may reduce nominations for injections and withdrawals over and above applicable storage ratchets. The Company will provide customers with one week's notice of its intent to limit injection and withdrawal rights, and at the same time, shall provide its best estimate of the duration and extent of the limitations.

In situations where the Company limits injection and withdrawal rights, the Company shall proportionately reduce the Storage Deliverability/Injection Demand Charge for affected customers based on the number of days the limitation is in effect and the difference between Deliverability/Injection Demand, subject to applicable storage ratchets, and the quantity of gas actually delivered or injected.

The customer may transfer the title of gas in storage.

Other provisions:

If the customer elects to use the contracted storage capacity at less than the full volumetric capacity of the storage, the Company may inject its own gas provided that such injection does not reduce the right of the customer to withdraw the full amount of gas injected on any day during the withdrawal season or to schedule its full injection right during the injection season.

Term of Contract:

A minimum of one year.

A longer-term contract may be required if incremental contracts/assets/facilities have been procured/built for the customer.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RATE NUMBER: **320**

BACKSTOPPING SERVICE

APPLICABILITY:

To any Applicant whose delivery of natural gas to the Company for transportation to a Terminal Location has been interrupted prior to the delivery of such gas to the Company.

CHARACTER OF SERVICE:

The volume of gas available for backstopping in any day shall be determined by the Company exercising its sole discretion. If the aggregate daily demand for service under this Rate Schedule exceeds the supply available for such day, the available supply shall be allocated to firm service customers on a first requested basis and any balance shall be available to interruptible customers on a first requested basis.

RATE:

The rates applicable in the circumstances contemplated by this Rate Schedule, in lieu of the Gas Supply Charges specified in any of the Company's other Rate Schedules pursuant to which the Applicant is taking service, shall be as follows:

	<u>Billing Month</u> January to December
Gas Supply Charge Per cubic metre of gas sold	18.1266 ¢/m³
Cap and Trade Customer Related Charge (If applicable)	0.0000 ¢/m³
Cap and Trade Facility Related Charge	0.0000 ¢/m³

provided that if upon the request of an Applicant, the Company quotes a rate to apply to gas which is delivered to the Applicant at a particular Terminal Location on a particular day or days and to which this Rate Schedule is applicable (which rate shall not be less than the Company's avoided cost in the circumstances at the time nor greater than the otherwise applicable rate specified above), then the Gas Supply Charge applicable to such gas shall be the rate quoted by the Company.

EFFECTIVE DATE:

To apply to bills rendered for gas consumed by customers on and after January 1, 2018 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181, effective July 1, 2017.

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RATE NUMBER: 325	TRANSMISSION, COMPRESSION AND POOL STORAGE SERVICE
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APPLICABILITY AND CHARACTER OF SERVICE:

Service under this rate schedule shall apply to the Transmission and Compression Service Agreement with Union Gas Limited dated April 1, 1989, and the Transmission, Compression and Pool Storage Service Agreement with Centra Gas Ontario Inc. dated May 30, 1994. Service shall be provided subject to the terms and conditions specified in the Service Agreement.

RATE:

The Customer shall pay for service rendered in each month in a contract year, the sum of the following applicable charges:

	Transmission & Compression \$/10³m³	Pool Storage \$/10³m³
Demand Charge for:		
Annual Turnover Volume	0.2097	0.1989
Maximum Daily Withdrawal Volume	23.0800	22.1198
Commodity Charge	0.9265	0.1539
Cap and Trade Customer Related Charge (If applicable)		0.0000 ¢/m³
Cap and Trade Facility Related Charge		0.0067 ¢/m³

FUEL RATIO REQUIREMENT:

Fuel Ratio applicable to per unit of gas injected and withdrawn is 0.35%.

MINIMUM BILL:

The minimum monthly bill shall be the sum of the applicable Demand Charges as stated in Rate Section above.

EXCESS VOLUME AND OVERRUN RATES:

In addition to the charges provided for in the Rate Section above, the Customer shall pay, for services rendered, the sum of the following applicable charges as they are incurred:

TERMS AND CONDITIONS OF SERVICE:

1. Excess Volumes will be billed at the total of the Excess Volume Charges as stated above.
2. Transmission and Compression, and Pool Storage Overrun Service will be billed according to the following:
 - (a) At the end of each month, in a contract year, the Company will make a determination, for each day in the month, of
 - (i) the difference between the volume of gas actually delivered, exclusive of the fuel volume, for Customer's account into the Company System, at the Point of Delivery and the Customer's Maximum Daily Injection Volume, and
 - (ii) the difference between the volume of gas actually delivered, exclusive of the fuel volume, for Customer's account from the Company System, at the Point of Delivery, and the Customer's Maximum Daily Withdrawal Volume.

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RATE NUMBER: **325**

	Excess Volume Charge \$/10 ³ m ³ / Year	Overrun Charge \$/10 ³ m ³ / Day
Transmission & Compression		
Authorized	2.7680	0.7588
Unauthorized	-	304.6560
Pool Storage		
Authorized	2.6255	0.7272
Unauthorized	-	291.9814

- (b) For each day of the month, where any such differences exceed 2.0 percent of the Customer's relevant Maximum Daily Injection Volume and/or Maximum Daily Withdrawal Volume, the Customer shall pay a charge equal to the relevant Overrun rates, as stated above, for such differences.

BILLING ADJUSTMENT:

1. Injection deficiency - If at the beginning of any Withdrawal Period the Customer's Storage Balance is less than the Customer's Annual Turnover Volume, due solely to the Company's inability to inject gas for any reason other than the fault of the Customer, then the applicable Demand Charge for Annual Turnover Volume for the contract year beginning the prior April 1 as stated in Rate Section as applicable, shall be adjusted by multiplying each by a fraction, the numerator of which shall be the Customer's Storage Gas Balance as of the beginning of such Withdrawal Period and the denominator shall be the Customer's Annual Turnover Volume as it may have been established for the then current year.
2. Withdrawal deficiency - If in any month in a contract year for any reason other than the fault of the Customer, the Company fails or is unable to deliver during any one or more days, the amount of gas which the Customer has nominated, up to the maximum volumes which the Company is obligated by the Agreement to deliver to the Customer, then the Demand Charge for maximum Contract Daily Withdrawal Volume in the contract year otherwise payable for the month in which such failure occurs, as stated in Rate Section above, as applicable, shall be reduced by an amount for each day of deficiency to be calculated as follows: The Demand Charge for maximum Contract Daily Withdrawal Volume for the contract year for the month will be divided by 30.4 and the result obtained will then be multiplied by a fraction, the numerator being the difference between the nominated volume for such day and the delivered volume for such day and the denominator being the Customer's maximum Contract Daily Withdrawal Volume for such contract year.

TERMS AND EXPRESSIONS:

In the application of this Rate Schedule to each of the Agreements, terms and expressions used in this Rate Schedule have the meanings ascribed thereto in such Agreement.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RATE NUMBER: 330	TRANSMISSION AND COMPRESSION AND POOL STORAGE
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APPLICABILITY:

To any Applicant who enters into a Storage Contract with the Company for delivery by the Applicant to the Company and re-delivery by the Company to the Applicant of a volume of natural gas owned by the Applicant.

CHARACTER OF SERVICE:

Service under this rate is for Full Cycle or Short Cycle storage service; with firm or interruptible injection and withdrawal service, all as may be available from time to time.

RATE:

The following rates and charges shall apply in respect of all gas received by the Company from and re-delivered by the Company to the Applicant.

	Firm \$/10 ³ m ³	Full Cycle Interruptible \$/10 ³ m ³	Short Cycle \$/10 ³ m ³
Monthly Demand Charge per unit of Annual Turnover Volume:			
Minimum	0.4086	0.4086	-
Maximum	2.0430	2.0430	-
Monthly Demand Charge per unit of Contracted Daily Withdrawal:			
Minimum	45.1998	36.1598	-
Maximum	225.9990	180.7992	-
Commodity Charge per unit of gas delivered to / received from storage:			
Minimum	1.0804	1.0804	0.4082
Maximum	5.4020	5.4020	42.4799
Cap and Trade Customer Related Charge (If applicable)			0.0000 ¢/m ³
Cap and Trade Facility Related Charge			0.0067 ¢/m ³

FUEL RATIO REQUIREMENT:

The Fuel Ratio per unit of gas injected and withdrawn is 0.35%.

TRANSACTING IN ENERGY:

The conversion factor is 37.74MJ/m³, which corresponds to Union Gas' System Wide Average Heating Value, as per the Board's RP-1999-0017 Decision with Reasons.

MINIMUM BILL:

The minimum monthly bill shall be the sum of the applicable Demand Charges.

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RATE NUMBER: **330**

OVERRUN RATES:

The units rates stated below will apply to overrun volumes. The provision of Authorized Overrun service will be at the Company's sole discretion.

	Firm \$/10 ³ m ³	Full Cycle Interruptible \$/10 ³ m ³	Short Cycle \$/10 ³ m ³
Authorized Overrun			
Annual Turnover Volume			
Negotiable, not to exceed:	42.4799	42.4799	42.4799
Authorized Overrun			
Daily Injection/Withdrawal			
Negotiable, not to exceed:	42.4799	42.4799	42.4799
Unauthorized Overrun			
Annual Turnover Volume			
Excess Storage Balance			
Excess Storage Balance	424.7985	424.7985	424.7985
December 1 - October 31	42.4799	42.4799	42.4799
Unauthorized Overrun			
Annual Turnover Volume			
Negative Storage Balance			

TERMS AND CONDITIONS OF SERVICE:

1. All Services are available at the Company's sole discretion.
2. Delivery and Re-delivery of the volume of natural gas shall be from/to the facilities of Union Gas Limited and / or TransCanada PipeLines Limited in Dawn Township and/or Niagara Gas Transmission Limited in Moore Township.
3. The Customers daily injections or withdrawals will be adjusted to provide for the fuel ratio stated in the Fuel Ratio Section. In the event that a Short Cycle service does not require fuel for injection and/or withdrawal, the fuel ratio commodity charge may be waived.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RATE NUMBER:

331**TECUMSEH TRANSPORTATION SERVICE****APPLICABILITY:**

To any Applicant who enters into an agreement with the Company pursuant to the Rate 331 Tariff ("Tariff") for transportation service on the Company's pipelines extending from Tecumseh to Dawn ("Tecumseh Pipeline"). The Company will receive gas at Tecumseh and deliver the gas at Dawn. Capitalized terms used in this Rate Schedule shall have the meanings ascribed to those terms in the Tariff.

CHARACTER OF SERVICE:

Transportation service under this Rate Schedule may be available on a firm basis ("FT Service") or an interruptible basis ("IT Service"), subject to the terms and conditions of service set out in the Tariff and the applicable rates set out below.

RATE:

The following rates, effective January 1, 2018, shall apply in respect of FT and IT Service under this Rate Schedule:

	Demand Rate \$/10³m³	Commodity Rate \$/10³m³	
FT Service	5.6430	-	
IT Service	-	0.2230	
Cap and Trade Customer Related Charge (If applicable)		0.0000	¢/m³
Cap and Trade Facility Related Charge		0.0016	¢/m³

FT Service: The monthly demand charge shall be the products obtained by multiplying the applicable Maximum Daily Volume by the above demand rate.

IT Service: The monthly commodity charge shall be the product obtained by multiplying the applicable Delivery Volume for the Month by the above commodity rate.

TERMS AND CONDITIONS OF SERVICE:

The terms and conditions of FT and IT Service are set out in the Tariff. The provisions of PARTS I to IV of the Company's HANDBOOK OF RATES AND DISTRIBUTION SERVICES do not apply to Rate 331 service.

EFFECTIVE DATE:

The Tariff was approved by the Board in Board Order EB-2010-0177, dated July 12, 2010, and is posted and available on the Company's website. In accordance with Section 1.6.2 of the Board's Storage and Transportation Access Rule, the Tariff does not apply to any Rate 331 service agreements executed prior to June 16, 2010.

EFFECTIVE DATE:

January 1, 2018

IMPLEMENTATION DATE:

January 1, 2018

BOARD ORDER:

EB-2017-0086

REPLACING RATE EFFECTIVE:

July 1, 2017

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RATE NUMBER 332	PARKWAY TO ALBION KING'S NORTH TRANSPORTATION SERVICE
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APPLICABILITY:

To any Applicant who enters into an agreement with the Company pursuant to the Rate 332 Tariff ("Tariff") for transportation service on the Company's Albion Pipeline, as defined in the Tariff. Capitalized terms used in this Rate Schedule shall have the meanings ascribed to those terms in the Tariff.

CHARACTER OF SERVICE:

Transportation service under this Rate Schedule shall be provided on a firm basis, subject to the terms and conditions set out in the Tariff and this Rate Schedule.

RATE:

The following charges, effective January 1, 2018, shall apply for transportation service under this Rate Schedule:

	<u>\$/GJ</u>	<u>\$/103m³</u>
Monthly Contract Demand Charge	\$1.2075	45.5107
	<u>\$/GJ</u>	<u>\$/103m³</u>
Authorized Overrun Charge	\$0.0476	1.7940
Cap and Trade Customer Related Charge (If applicable)	0.0000	¢/m³
Cap and Trade Facility Related Charge	0.0016	¢/m³

The Monthly Contract Demand charge is equal to the Daily Contract Demand of \$0.0397 per GJ or \$1.4963 per 10³m³.

Monthly Minimum Bill: The minimum monthly bill shall equal the applicable Monthly Contract Demand Charge times the Maximum Daily Quantity.

Authorized Overrun Service: The Company may, in its sole discretion, authorize transportation of gas in excess of the Maximum Daily Quantity provided excess capacity is available. The excess volumes will be subject to the Authorized Overrun Charge.

In addition to the rates quoted above, Applicants taking Rate 332 transportation service will be required to pay any charges resulting from Board approved dispositions of Deferral and Variance account balances pertaining to Rate 332.

TERMS AND CONDITIONS OF SERVICE:

The terms and conditions of transportation service are set out in the Tariff.

The provisions of Parts I to IV of the Company's HANDBOOK OF RATES AND DISTRIBUTION SERVICES do not apply to Rate 332 transportation service.

EFFECTIVE DATE:

The Tariff was approved by the Board in Board Order EB-2016-0028 available on the Company's website.

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APPENDIX:

A

AREAS OF CAPACITY CONSTRAINT

Applicants located off the piping networks noted below or off piping systems supplied from these networks may be curtailed to maintain distribution system integrity.

The Town of Collingwood

The Town of Midland

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RIDER:	A	TRANSPORTATION SERVICE RIDER
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APPLICABILITY:

This rider is applicable to any Applicant who enters into Gas Transportation Agreement with the Company under any rate other than Rates 125 and 300.

MONTHLY DIRECT PURCHASE ADMINISTRATION CHARGE:

Fixed Charge	\$75.00 per month
Account Charge	\$0.21 per month per account

AVERAGE COST OF TRANSPORTATION:

The average cost of transportation effective January 1, 2018:

Service Type:	Point of Acceptance	Firm Transportation (FT)
T-Service:	CDA, EDA	5.4151 ¢/m ³
Dawn T-Service:	CDA, EDA	1.1650 ¢/m ³

TCPL FT CAPACITY TURNBACK:

APPLICABILITY:

To Ontario T-Service and Western T-Service customers who have been or will be assigned TCPL capacity by the Company.

TERMS AND CONDITIONS OF SERVICE:

1. The Company will accommodate TCPL FT capacity turnback requests from customers, but only if it can do so in accordance with the following considerations:
 - i. The FT capacity to be turned back must be replaced with alternative, contracted firm transportation (primary capacity or assignment) of equivalent quality to the TCPL FT capacity;
 - ii. The amount of turnback capacity that Enbridge otherwise may accommodate may be reduced to address the impact of stranded costs, other transitional costs or incremental gas costs resulting from the loss of STS capacity arising from any turnback request; and
 - iii. Enbridge must act in a manner that maintains the integrity and reliability of the gas distribution system and that respects the sanctity of contracts.
2. Requests for TCPL FT turnback must be made in writing to the attention of Enbridge's Direct Purchase group.
3. All TCPL FT capacity turnback requests will be treated on an equitable basis.
4. The percentage turnback of TCPL FT capacity will be applied at the Direct Purchase Agreement level.

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RIDER:	A
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5. Written notice to turnback capacity must be received by the Company the earlier of:

(a) Sixty days prior to the expiry date of the current contract.

or

(b) A minimum of one week prior to the deadline specified in TransCanada tariff for FT contract extension.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RIDER:	B	BUY / SELL SERVICE RIDER
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APPLICABILITY:

This rider is applicable to any Applicant who entered into a Gas Purchase Agreement with the Company, prior to April 1, 1999, to sell to the Company a supply of natural gas.

MONTHLY DIRECT PURCHASE ADMINISTRATION CHARGE:

Fixed Charge	\$75.00 per month
Account Charge	\$0.21 per month per account

BUY / SELL PRICE:

In Buy/Sell Arrangements between the Company and an Applicant, the Company shall buy the Applicants gas at the Company's actual FT-WACOG price determined on a monthly basis in the manner approved by the Ontario Energy Board. For Western Buy/Sell arrangements the FT-WACOG price shall be reduced by pipeline transmission costs.

FT FUEL PRICE:

The FT fuel price used to establish the Buy price in Western Buy/Sell arrangements without fuel will be determined monthly based upon the actual FT-WACOG.

EFFECTIVE DATE:

To apply to bills rendered for gas delivered on and after January 1, 2018. This rate schedule is effective January 1, 2018 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2017 and that indicates the Board Order, EB-2017-0181 effective July 1, 2017.

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RIDER:	C	GAS COST ADJUSTMENT RIDER
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RIDER:	D	SITE RESTORATION COST CLEARANCE
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Bundled Services

Rate Class	(¢/m ³)
Rate 1	0.0000
Rate 6	0.0000
Rate 9	0.0000
Rate 100	0.0000
Rate 110	0.0000
Rate 115	0.0000
Rate 135	0.0000
Rate 145	0.0000
Rate 170	0.0000
Rate 200	0.0000

Unbundled Services

Rate Class	(¢/m ³)
Rate 125 - per m ³ of contract demand	0.0000
Rate 300 - per m ³ of contract demand	0.0000
Rate 300 (Interruptible)	0.0000

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RIDER:	E	REVENUE ADJUSTMENT RIDER
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RIDER:

F**ATMOSPHERIC PRESSURE FACTORS**

The following elevation factors shall be applicable to metered volumes measured by a meter that does not correct for atmospheric pressure.

Zone	Elevation Factor
1	0.9644
2	0.9652
3	0.9669
4	0.9678
5	0.9686
6	0.9703
7	0.9728
8	0.9745
9	0.9762
10	0.9771
11	0.9839
12	0.9847
13	0.9856
14	0.9864
15	0.9873
16	0.9881
17	0.9890
18	0.9898
19	0.9907
20	0.9915
21	0.9932
22	0.9941
23	0.9949
24	0.9958
25	0.9960
26	0.9966
27	0.9975
28	0.9981
29	0.9983
30	0.9992
31	0.9997
32	1.0000
33	1.0017
34	1.0025
35	1.0034
36	1.0051
37	1.0059
38	1.0170

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RIDER:	G	SERVICE CHARGES
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	<u>Rate</u> (excluding HST)
<u>New Account Or Activation</u>	
New Account Charge	\$25.00
Turning on of gas, activating appliances, obtaining billing data and establishing an opening meter reading for new customers in premises where gas has been previously supplied	
Appliance Activation Charge - Commercial Customers Only	\$70.00
Commercial customers are charged an appliance activation charge on unlock and red unlock orders, except on the very first unlock and service unlock at a premise.	minimum 1/2 hour work. Total Amount depends on time required
Meter Unlock Charge - Seasonal or Pool Heater	\$70.00
Seasonal for all other revenue classes, or Pool Heater for residential only	
<u>Statement of Account</u>	
Lawyer Letter Handling Charge	\$15.00
Provide the customer's lawyer with gas bill information.	
Statement of Account Charge (for one year history)	\$10.00
<u>Cheques Returned Non-Negotiable Charge</u>	\$20.00
<u>Gas Termination</u>	
Red Lock Charge	\$70.00
Locking meter or shutting off service by closing the street shut-off valve (when work can be performed by Field Collector)	
Removal of Meter	\$280.00
Removing meter by Construction & Maintenance crew	
Cut Off At Main Charge	\$1,300.00
Cutting service off at main by Construction & Maintenance Crew	
Valve Lock Charge	
Shutting off service by closing the street shut-off valve - work performed by Field Investigator	\$135.00
- work performed by Construction & Maintenance	\$280.00
<u>Safety Inspection</u>	
Inspection Charge	\$70.00
For inspection of gas appliances; the Company provides only one inspection free of charge, upon first time introduction of gas to a premise.	
Inspection Reject Charge (safety inspection)	\$70.00
Energy Board Inspection rejects are billed to the meter installer or homeowner.	

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RIDER:	G
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Meter Test

Meter Test Charge

When a customer disputes the reading on his/her meter, he/she may request to have the meter tested. This charge will apply if the test result confirms the meter is recording consumption correctly.

Residential meters	\$105.00
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Non-Residential meters	Time & Material per Contractor
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Street Service Alteration

Street Service Alteration Charge	\$32.00
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For installation of service line beyond allowable guidelines (for new residential services only)

NGV Rental

NGV Rental Cylinder (weighted average)	\$12.00
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Other Customer Services (ad-hoc request)
and Third Party Services (damages investigation and repair)

Labour Hourly Charge-Out Rate	\$140.00
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Other Services (including ad-hoc customer requests and charges to customers and third parties for responding, investigating and repairing damages to Company facilities)

Cut Off At Main Charge - Commercial & Special Requests	custom quoted
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Cut Off At Main charges for commercial services and other residential services that involve significantly more work than the average will be custom quoted.

Cut Off At Main Charge - Other Customer Requests	\$1,300.00
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Other residential Cut Off At Main requests due to demolitions, fires, inactive services, etc. will be charged at the standard COAM rate.

Meter In-Out (Residential Only))	\$280.00
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Relocate the meter from inside to outside per customer request

Request For Service Call Information	\$30.00
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Provide written information of the result of a service call as requested by home owners.

Temporary Meter Removal	\$280.00
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As requested by customers.

Damage Meter Charge	\$380.00
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RIDER:	H	BALANCING SERVICE RIDER
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APPLICABILITY:

This rider is applicable to any Applicant who enters into Gas Delivery Agreement with the Company under any rate.

IN FRANCHISE TITLE TRANSFER SERVICE:

In any Gas Delivery Agreement between the Company and the Applicant, an Applicant may elect to initiate a transfer of natural gas from one of its pools to the pool of another Applicant for the purposes of reducing an imbalance between the Applicant's deliveries and consumption as recorded in its Banked Gas Account or Cumulative Imbalance Account. Elections must be made in accordance with the Company's policies and procedures related to transaction requests under the Gas Delivery Agreement.

The Company will not apply an Administration charge for transfers between pools that have similar Points of Acceptance (i.e. both Ontario, both Western, or both Dawn Points of Acceptance). For transfers between pools that have dissimilar Points of Acceptance (i.e. one Ontario and one Western Point of Acceptance or, one Western and one Dawn point of Acceptance), the Company will apply the following Administration Charge per transaction to the pool transferring the natural gas (i.e. the seller or transferor).

Administration Charge: \$169.00 per transaction

Also, the applicable average cost of transportation as per Rider A for the transferred volume is charged to the pool with a Western or Dawn Point of Acceptance for transfers to a pool with an Ontario Point of Acceptance. The average cost of transportation as per Rider A for the transferred volume is remitted to the pool with a Western or Dawn Point of Acceptance for transfers from a pool with an Ontario Point of Acceptance. The applicable average cost of transportation as per Rider A is adjusted for transfers between Western and Dawn Points of Acceptance, so that the seller pool (transferor) is charged the applicable cost per volume transferred and the buyer pool or (recipient) is remitted at the applicable cost per volume transferred.

ENHANCED TITLE TRANSFER SERVICE:

In any Gas Delivery Agreement between the Company and the Applicant, the Applicant may elect to initiate a transfer of natural gas between the Company and another utility, regulated by the Ontario Energy Board, at Dawn for the purposes of reducing an imbalance between the customer's deliveries and consumption within the Enbridge Gas Distribution franchise areas. The ability of the Company to accept such an election may be constrained at various points in time for customers obtaining services under any rate other than Rate 125 or 300 due to operational considerations of the Company.

The cost for this service is separated between an Administration Charge that is applicable to all Applicants and a Bundled Service Charge that is only applicable to Applicants obtaining services under any rate other than Rate 125 or 300.

Administration Charge:
 Base Charge \$50.00 per transaction
 Commodity Charge \$0.5402 per 10³m³

Bundled Service Charge:
 The Bundled Service Charge shall be equal to the absolute difference between the Eastern Zone and Southwest Zone Firm Transportation tolls approved by the National Energy Board for TCPL at a 100% Load Factor.

Also, the average cost of transportation as per Rider A for the transferred volume is charged to the Applicant with a Western Point of Acceptance for transfers to another party. The average cost of transportation as per Rider A for the transferred volume is remitted to the Applicant with a Western Point of Acceptance for transfers from another party.

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RIDER: **H**

GAS IN STORAGE TITLE TRANSFER:

An Applicant that holds a contract for storage services under Rate 315 or 316 may elect to initiate a transfer of title to the natural gas currently held in storage between the storage service and another storage service held by the Applicant, or any other Applicant that has contracted with the Company for storage services under Rate 315 or 316. The service will be provided on a firm basis up to the volume of gas that is equivalent to the more restrictive firm withdrawal and injection parameters of the two parties involved in the transfer. Transfer of title at rates above this level may be done on at the Company's discretion.

For Applicants requesting service between two storage service contracts that have like services, each party to the request shall pay an Administration Charge applicable to the request. Services shall be considered to be alike if the injection and deliverability rate at the ratchet levels in effect at the time of the request are the same and both services are firm or both services are interruptible. In addition to like services, the Company, at its sole discretion based on operational conditions, will also allow for the transfer of gas from a storage service contract that has a level of deliverability that is higher than the level of deliverability of the storage service contract the gas is being transferred to with only the Administration Charge being applicable to each party.

In addition to the Administration Charge, Applicants requesting service between two storage service contracts not addressed in the preceding paragraph would be subject to the injection and withdrawal charges specified in their contracts.

Administration Charge: \$25.00 per transaction

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ANNUAL BILL COMPARISON - RESIDENTIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Heating & Water Htg.							Heating, Water Htg. & Other Uses			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
1.1	VOLUME	m³	3,064	3,064	0	0.0%	4,691	4,691	0	0.0%
1.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%	240.00	240.00	0.00	0.0%
1.3	DISTRIBUTION CHG.	\$	378.09	370.53	7.56	2.0%	572.54	560.96	11.57	2.1%
1.4	LOAD BALANCING	\$	217.92	217.92	0.00	0.0%	333.67	333.67	0.00	0.0%
1.5	SALES COMMDTY	\$	369.18	369.18	0.00	0.0%	565.23	565.23	0.00	0.0%
1.6	TOTAL SALES	\$	1,205.19	1,197.63	7.56	0.6%	1,711.44	1,699.86	11.57	0.7%
1.7	TOTAL T-SERVICE	\$	836.01	828.45	7.56	0.9%	1,146.21	1,134.63	11.57	1.0%
1.8	SALES UNIT RATE	\$/m³	0.3933	0.3909	0.0025	0.6%	0.3648	0.3624	0.0025	0.7%
1.9	T-SERVICE UNIT RATE	\$/m³	0.2728	0.2704	0.0025	0.9%	0.2443	0.2419	0.0025	1.0%
1.10	SALES UNIT RATE	\$/GJ	10.2379	10.1736	0.0642	0.6%	9.4959	9.4317	0.0642	0.7%
1.11	T-SERVICE UNIT RATE	\$/GJ	7.1017	7.0375	0.0642	0.9%	6.3598	6.2955	0.0642	1.0%

Heating Only							Heating & Water Htg.			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
2.1	VOLUME	m³	1,955	1,955	0	0.0%	2,005	2,005	0	0.0%
2.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%	240.00	240.00	0.00	0.0%
2.3	DISTRIBUTION CHG.	\$	242.14	237.32	4.82	2.0%	250.91	245.96	4.95	2.0%
2.4	LOAD BALANCING	\$	139.05	139.05	0.00	0.0%	142.62	142.62	0.00	0.0%
2.5	SALES COMMDTY	\$	235.56	235.56	0.00	0.0%	241.59	241.59	0.00	0.0%
2.6	TOTAL SALES	\$	856.75	851.93	4.82	0.6%	875.12	870.17	4.95	0.6%
2.7	TOTAL T-SERVICE	\$	621.19	616.37	4.82	0.8%	633.53	628.58	4.95	0.8%
2.8	SALES UNIT RATE	\$/m³	0.4382	0.4358	0.0025	0.6%	0.4365	0.4340	0.0025	0.6%
2.9	T-SERVICE UNIT RATE	\$/m³	0.3177	0.3153	0.0025	0.8%	0.3160	0.3135	0.0025	0.8%
2.10	SALES UNIT RATE	\$/GJ	11.4065	11.3422	0.0642	0.6%	11.3605	11.2962	0.0642	0.6%
2.11	T-SERVICE UNIT RATE	\$/GJ	8.2703	8.2061	0.0642	0.8%	8.2242	8.1600	0.0642	0.8%

§ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - RESIDENTIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Heating, Pool Htg. & Other Uses							General & Water Htg.			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
3.1	VOLUME	m³	5,048	5,048	0	0.0%	1,081	1,081	0	0.0%
3.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%	240.00	240.00	0.00	0.0%
3.3	DISTRIBUTION CHG.	\$	615.87	603.42	12.45	2.1%	139.78	137.11	2.67	1.9%
3.4	LOAD BALANCING	\$ \$	359.06	359.06	0.00	0.0%	76.88	76.88	0.00	0.0%
3.5	SALES COMMDTY	\$	608.25	608.25	0.00	0.0%	130.26	130.26	0.00	0.0%
3.6	TOTAL SALES	\$	1,823.18	1,810.73	12.45	0.7%	586.92	584.25	2.67	0.5%
3.7	TOTAL T-SERVICE	\$	1,214.93	1,202.48	12.45	1.0%	456.66	453.99	2.67	0.6%
3.8	SALES UNIT RATE	\$/m³	0.3612	0.3587	0.0025	0.7%	0.5429	0.5405	0.0025	0.5%
3.9	T-SERVICE UNIT RATE	\$/m³	0.2407	0.2382	0.0025	1.0%	0.4224	0.4200	0.0025	0.6%
3.10	SALES UNIT RATE	\$/GJ	9.4006	9.3363	0.0642	0.7%	14.1317	14.0675	0.0642	0.5%
3.11	T-SERVICE UNIT RATE	\$/GJ	6.2643	6.2001	0.0642	1.0%	10.9954	10.9312	0.0642	0.6%

		Heating & Water Htg.				Heating & Water Htg.				
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
3.1	VOLUME	m³	2,480	2,480	0	0.0%	2,400	2,400	0	0.0%
3.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%	240.00	240.00	0.00	0.0%
3.3	DISTRIBUTION CHG.	\$	307.93	301.81	6.12	2.0%	298.06	292.14	5.92	2.0%
3.4	LOAD BALANCING	\$	176.41	176.41	0.00	0.0%	170.72	170.72	0.00	0.0%
3.5	SALES COMMDTY	\$	298.82	298.82	0.00	0.0%	289.19	289.19	0.00	0.0%
3.6	TOTAL SALES	\$	1,023.16	1,017.04	6.12	0.6%	997.97	992.05	5.92	0.6%
3.7	TOTAL T-SERVICE	\$	724.34	718.22	6.12	0.9%	708.78	702.86	5.92	0.8%
3.8	SALES UNIT RATE	\$/m³	0.4126	0.4101	0.0025	0.6%	0.4158	0.4134	0.0025	0.6%
3.9	T-SERVICE UNIT RATE	\$/m³	0.2921	0.2896	0.0025	0.9%	0.2953	0.2929	0.0025	0.8%
3.10	SALES UNIT RATE	\$/GJ	10.7383	10.6741	0.0642	0.6%	10.8231	10.7589	0.0642	0.6%
3.11	T-SERVICE UNIT RATE	\$/GJ	7.6021	7.5379	0.0642	0.9%	7.6868	7.6226	0.0642	0.8%

§ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - COMMERCIAL & INDUSTRIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Commercial Heating & Other Uses							Com. Htg., Air Cond'ng & Other Uses			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
1.1	VOLUME	m³	22,606	22,606	0	0.0%	29,278	29,278	0	0.0%
1.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%	840.00	840.00	0.00	0.0%
1.3	DISTRIBUTION CHG.	\$	2,376.96	2,321.19	55.77	2.4%	3,059.61	2,987.37	72.23	2.4%
1.4	LOAD BALANCING	§ \$	1,579.40	1,579.40	0.00	0.0%	2,045.53	2,045.53	0.00	0.0%
1.5	SALES COMMDTY	\$	2,728.68	2,728.68	0.00	0.0%	3,534.04	3,534.04	0.00	0.0%
1.6	TOTAL SALES	\$	7,525.04	7,469.27	55.77	0.7%	9,479.18	9,406.94	72.23	0.8%
1.7	TOTAL T-SERVICE	\$	4,796.36	4,740.59	55.77	1.2%	5,945.14	5,872.90	72.23	1.2%
1.8	SALES UNIT RATE	\$/m³	0.3329	0.3304	0.0025	0.7%	0.3238	0.3213	0.0025	0.8%
1.9	T-SERVICE UNIT RATE	\$/m³	0.2122	0.2097	0.0025	1.2%	0.2031	0.2006	0.0025	1.2%
1.10	SALES UNIT RATE	\$/GJ	8.6642	8.6000	0.0642	0.7%	8.4270	8.3628	0.0642	0.8%
1.11	T-SERVICE UNIT RATE	\$/GJ	5.5224	5.4582	0.0642	1.2%	5.2852	5.2210	0.0642	1.2%
Medium Commercial Customer							Large Commercial Customer			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
2.1	VOLUME	m³	169,563	169,563	0	0.0%	339,125	339,125	0	0.0%
2.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%	840.00	840.00	0.00	0.0%
2.3	DISTRIBUTION CHG.	\$	14,521.58	14,103.25	418.33	3.0%	27,619.57	26,782.92	836.66	3.1%
2.4	LOAD BALANCING	§ \$	11,846.70	11,846.70	0.00	0.0%	23,693.29	23,693.29	0.00	0.0%
2.5	SALES COMMDTY	\$	20,467.26	20,467.26	0.00	0.0%	40,934.42	40,934.42	0.00	0.0%
2.6	TOTAL SALES	\$	47,675.54	47,257.21	418.33	0.9%	93,087.28	92,250.63	836.66	0.9%
2.7	TOTAL T-SERVICE	\$	27,208.28	26,789.95	418.33	1.6%	52,152.86	51,316.21	836.66	1.6%
2.8	SALES UNIT RATE	\$/m³	0.2812	0.2787	0.0025	0.9%	0.2745	0.2720	0.0025	0.9%
2.9	T-SERVICE UNIT RATE	\$/m³	0.1605	0.1580	0.0025	1.6%	0.1538	0.1513	0.0025	1.6%
2.10	SALES UNIT RATE	\$/GJ	7.3182	7.2540	0.0642	0.9%	7.1445	7.0803	0.0642	0.9%
2.11	T-SERVICE UNIT RATE	\$/GJ	4.1765	4.1123	0.0642	1.6%	4.0028	3.9386	0.0642	1.6%

§ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - COMMERCIAL & INDUSTRIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6	Col. 7	Col. 8		
Industrial General Use							Industrial Heating & Other Uses						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
3.1	VOLUME	m³	43,285	43,285	0	0.0%		63,903	63,903	0	0.0%		
3.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%		840.00	840.00	0.00	0.0%		
3.3	DISTRIBUTION CHG.	\$	4,329.44	4,222.65	106.79	2.5%		6,017.11	5,859.46	157.66	2.7%		
3.4	LOAD BALANCING	\$	3,024.14	3,024.14	0.00	0.0%		4,464.65	4,464.65	0.00	0.0%		
3.5	SALES COMMDTY	\$	5,224.76	5,224.76	0.00	0.0%		7,713.49	7,713.49	0.00	0.0%		
3.6	TOTAL SALES	\$	13,418.34	13,311.55	106.79	0.8%		19,035.25	18,877.60	157.66	0.8%		
3.7	TOTAL T-SERVICE	\$	8,193.58	8,086.79	106.79	1.3%		11,321.76	11,164.11	157.66	1.4%		
3.8	SALES UNIT RATE	\$/m³	0.3100	0.3075	0.0025	0.8%		0.2979	0.2954	0.0025	0.8%		
3.9	T-SERVICE UNIT RATE	\$/m³	0.1893	0.1868	0.0025	1.3%		0.1772	0.1747	0.0025	1.4%		
3.10	SALES UNIT RATE	\$/GJ	8.0687	8.0045	0.0642	0.8%		7.7532	7.6890	0.0642	0.8%		
3.11	T-SERVICE UNIT RATE	\$/GJ	4.9270	4.8627	0.0642	1.3%		4.6114	4.5472	0.0642	1.4%		
Medium Industrial Customer							Large Industrial Customer						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
4.1	VOLUME	m³	169,563	169,563	0	0.0%		339,124	339,124	0	0.0%		
4.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%		840.00	840.00	0.00	0.0%		
4.3	DISTRIBUTION CHG.	\$	14,724.06	14,305.73	418.33	2.9%		27,770.25	26,933.59	836.66	3.1%		
4.4	LOAD BALANCING	\$	11,846.70	11,846.70	0.00	0.0%		23,693.23	23,693.23	0.00	0.0%		
4.5	SALES COMMDTY	\$	20,467.27	20,467.27	0.00	0.0%		40,934.29	40,934.29	0.00	0.0%		
4.6	TOTAL SALES	\$	47,878.03	47,459.70	418.33	0.9%		93,237.77	92,401.11	836.66	0.9%		
4.7	TOTAL T-SERVICE	\$	27,410.76	26,992.43	418.33	1.5%		52,303.48	51,466.82	836.66	1.6%		
4.8	SALES UNIT RATE	\$/m³	0.2824	0.2799	0.0025	0.9%		0.2749	0.2725	0.0025	0.9%		
4.9	T-SERVICE UNIT RATE	\$/m³	0.1617	0.1592	0.0025	1.5%		0.1542	0.1518	0.0025	1.6%		
4.10	SALES UNIT RATE	\$/GJ	7.3493	7.2851	0.0642	0.9%		7.1561	7.0919	0.0642	0.9%		
4.11	T-SERVICE UNIT RATE	\$/GJ	4.2076	4.1434	0.0642	1.5%		4.0143	3.9501	0.0642	1.6%		

\$ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Rate 100 - Small Commercial Firm							Rate 100 - Average Commercial Firm			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
1.1	VOLUME	m³	339,188	339,188	0	0.0%	598,567	598,567	0	0.0%
1.2	CUSTOMER CHG.	\$	1,464	1,464	0	0.0%	1,464	1,464	0	0.0%
1.3	DISTRIBUTION CHG.	\$	25,745	24,908	837	3.4%	87,414	85,938	1,477	1.7%
1.4	LOAD BALANCING	\$	23,698	23,698	0	0.0%	41,819	41,819	0	0.0%
1.5	SALES COMMDTY	\$	40,942	40,942	0	0.0%	72,251	72,251	0	0.0%
1.6	TOTAL SALES	\$	91,848	91,012	837	0.9%	202,949	201,472	1,477	0.7%
1.7	TOTAL T-SERVICE	\$	50,906	50,070	837	1.7%	130,698	129,221	1,477	1.1%
1.8	SALES UNIT RATE	\$/m³	0.2708	0.2683	0.0025	0.9%	0.3391	0.3366	0.0025	0.7%
1.9	T-SERVICE UNIT RATE	\$/m³	0.1501	0.1476	0.0025	1.7%	0.2184	0.2159	0.0025	1.1%
1.10	SALES UNIT RATE	\$/GJ	7.0481	6.9839	0.0642	0.9%	8.8250	8.7608	0.0642	0.7%
1.11	T-SERVICE UNIT RATE	\$/GJ	3.9064	3.8422	0.0642	1.7%	5.6833	5.6191	0.0642	1.1%
Rate 100 - Large Industrial Firm										
			(A)	(B)	CHANGE					
					(A) - (B)	%				
2.1	VOLUME	m³	1,500,000	1,500,000	0	0.0%				
2.2	CUSTOMER CHG.	\$	1,464	1,464	0	0.0%				
2.3	DISTRIBUTION CHG.	\$	186,272	182,571	3,701	2.0%				
2.4	LOAD BALANCING	\$	104,799	104,799	0	0.0%				
2.5	SALES COMMDTY	\$	181,059	181,059	0	0.0%				
2.6	TOTAL SALES	\$	473,594	469,893	3,701	0.8%				
2.7	TOTAL T-SERVICE	\$	292,535	288,834	3,701	1.3%				
2.8	SALES UNIT RATE	\$/m³	0.3157	0.3133	0.0025	0.8%				
2.9	T-SERVICE UNIT RATE	\$/m³	0.1950	0.1926	0.0025	1.3%				
2.10	SALES UNIT RATE	\$/GJ	8.2178	8.1536	0.0642	0.8%				
2.11	T-SERVICE UNIT RATE	\$/GJ	5.0761	5.0119	0.0642	1.3%				

**ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS**

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6	Col. 7	Col. 8
Rate 145 - Small Commercial Interr.							Rate 145 - Average Commercial Interr.				
			(A)	(B)	CHANGE			(A)	(B)	CHANGE	
					(A) - (B)	%				(A) - (B)	%
3.1	VOLUME	m³	339,188	339,188	0	0.0%		598,568	598,568	0	0.0%
3.2	CUSTOMER CHG.	\$	1,480	1,480	0	0.0%		1,480	1,480	0	0.0%
3.3	DISTRIBUTION CHG.	\$	22,784	21,947	837	3.8%		37,146	35,669	1,477	4.1%
3.4	LOAD BALANCING	\$	18,957	18,957	0	0.0%		33,454	33,454	0	0.0%
3.5	SALES COMMDTY	\$	40,764	40,764	0	0.0%		71,937	71,937	0	0.0%
3.6	TOTAL SALES	\$	83,985	83,149	837	1.0%		144,017	142,540	1,477	1.0%
3.7	TOTAL T-SERVICE	\$	43,221	42,384	837	2.0%		72,080	70,603	1,477	2.1%
3.8	SALES UNIT RATE	\$/m³	0.2476	0.2451	0.0025	1.0%		0.2406	0.2381	0.0025	1.0%
3.9	T-SERVICE UNIT RATE	\$/m³	0.1274	0.1250	0.0025	2.0%		0.1204	0.1180	0.0025	2.1%
3.10	SALES UNIT RATE	\$/GJ	6.4448	6.3805	0.0642	1.0%		6.2624	6.1982	0.0642	1.0%
3.11	T-SERVICE UNIT RATE	\$/GJ	3.3166	3.2524	0.0642	2.0%		3.1343	3.0701	0.0642	2.1%
Rate 145 - Small Industrial Interr.							Rate 145 - Average Industrial Interr.				
			(A)	(B)	CHANGE			(A)	(B)	CHANGE	
					(A) - (B)	%				(A) - (B)	%
4.1	VOLUME	m³	339,188	339,188	0	0.0%		598,567	598,567	0	0.0%
4.2	CUSTOMER CHG.	\$	1,480	1,480	0	0.0%		1,480	1,480	0	0.0%
4.3	DISTRIBUTION CHG.	\$	23,057	22,220	837	3.8%		37,387	35,910	1,477	4.1%
4.4	LOAD BALANCING	\$	18,957	18,957	0	0.0%		33,454	33,454	0	0.0%
4.5	SALES COMMDTY	\$	40,764	40,764	0	0.0%		71,937	71,937	0	0.0%
4.6	TOTAL SALES	\$	84,258	83,421	837	1.0%		144,258	142,782	1,477	1.0%
4.7	TOTAL T-SERVICE	\$	43,494	42,657	837	2.0%		72,321	70,845	1,477	2.1%
4.8	SALES UNIT RATE	\$/m³	0.2484	0.2459	0.0025	1.0%		0.2410	0.2385	0.0025	1.0%
4.9	T-SERVICE UNIT RATE	\$/m³	0.1282	0.1258	0.0025	2.0%		0.1208	0.1184	0.0025	2.1%
4.10	SALES UNIT RATE	\$/GJ	6.4657	6.4015	0.0642	1.0%		6.2729	6.2087	0.0642	1.0%
4.11	T-SERVICE UNIT RATE	\$/GJ	3.3376	3.2734	0.0642	2.0%		3.1448	3.0806	0.0642	2.1%

ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Rate 110 - Small Ind. Firm - 50% LF					Rate 110 - Average Ind. Firm - 50% LF				
		(A)	(B)	CHANGE		(A)	(B)	CHANGE	
				(A) - (B)	%			(A) - (B)	%
5.1 VOLUME	m ³	598,568	598,568	0	0.0%	9,976,121	9,976,121	0	0.0%
5.2 CUSTOMER CHG.	\$	7,048	7,048	0	0.0%	7,048	7,048	0	0.0%
5.3 DISTRIBUTION CHG.	\$	35,925	34,448	1,477	4.3%	594,972	570,360	24,612	4.3%
5.4 LOAD BALANCING	\$	34,369	34,369	0	0.0%	572,819	572,819	0	0.0%
5.5 SALES COMMDTY	\$	71,915	71,915	0	0.0%	1,198,581	1,198,581	0	0.0%
5.6 TOTAL SALES	\$	149,257	147,781	1,477	1.0%	2,373,420	2,348,808	24,612	1.0%
5.7 TOTAL T-SERVICE	\$	77,342	75,866	1,477	1.9%	1,174,839	1,150,227	24,612	2.1%
5.8 SALES UNIT RATE	\$/m ³	0.2494	0.2469	0.0025	1.0%	0.2379	0.2354	0.0025	1.0%
5.9 T-SERVICE UNIT RATE	\$/m ³	0.1292	0.1267	0.0025	1.9%	0.1178	0.1153	0.0025	2.1%
### SALES UNIT RATE	\$/GJ	6.4903	6.4261	0.0642	1.0%	6.1924	6.1281	0.0642	1.0%
### T-SERVICE UNIT RATE	\$/GJ	3.3632	3.2989	0.0642	1.9%	3.0652	3.0010	0.0642	2.1%

Rate 110 - Average Ind. Firm - 75% LF					Rate 115 - Large Ind. Firm - 80% LF				
		(A)	(B)	CHANGE		(A)	(B)	CHANGE	
				(A) - (B)	%			(A) - (B)	%
6.1 VOLUME	m ³	9,976,120	9,976,120	0	0.0%	69,832,850	69,832,850	0	0.0%
6.2 CUSTOMER CHG.	\$	7,048	7,048	0	0.0%	7,471	7,471	0	0.0%
6.3 DISTRIBUTION CHG.	\$	548,014	523,402	24,612	4.7%	3,479,221	3,306,935	172,285	5.2%
6.4 LOAD BALANCING	\$	572,819	572,819	0	0.0%	3,863,363	3,863,363	0	0.0%
6.5 SALES COMMDTY	\$	1,198,581	1,198,581	0	0.0%	8,390,068	8,390,068	0	0.0%
6.6 TOTAL SALES	\$	2,326,462	2,301,850	24,612	1.1%	15,740,123	15,567,837	172,285	1.1%
6.7 TOTAL T-SERVICE	\$	1,127,881	1,103,269	24,612	2.2%	7,350,055	7,177,770	172,285	2.4%
6.8 SALES UNIT RATE	\$/m ³	0.2332	0.2307	0.0025	1.1%	0.2254	0.2229	0.0025	1.1%
6.9 T-SERVICE UNIT RATE	\$/m ³	0.1131	0.1106	0.0025	2.2%	0.1053	0.1028	0.0025	2.4%
### SALES UNIT RATE	\$/GJ	6.0698	6.0056	0.0642	1.1%	5.8667	5.8024	0.0642	1.1%
### T-SERVICE UNIT RATE	\$/GJ	2.9427	2.8785	0.0642	2.2%	2.7395	2.6753	0.0642	2.4%

ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR NON-LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Rate 135 - Seasonal Firm							Rate 170 - Average Ind. Interr. - 50% LF			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
7.1	VOLUME	m³	598,567	598,567	0	0.0%	9,976,121	9,976,121	0	0.0%
7.2	CUSTOMER CHG.	\$	1,381	1,381	0	0.0%	3,352	3,352	0	0.0%
7.3	DISTRIBUTION CHG.	\$	32,518	31,042	1,477	4.8%	441,881	417,269	24,612	5.9%
7.4	LOAD BALANCING	\$	27,370	27,370	0	0.0%	451,611	451,611	0	0.0%
7.5	SALES COMMDTY	\$	71,957	71,957	0	0.0%	1,198,581	1,198,581	0	0.0%
7.6	TOTAL SALES	\$	133,226	131,750	1,477	1.1%	2,095,425	2,070,813	24,612	1.2%
7.7	TOTAL T-SERVICE	\$	61,270	59,793	1,477	2.5%	896,844	872,232	24,612	2.8%
7.8	SALES UNIT RATE	\$/m³	0.2226	0.2201	0.0025	1.1%	0.2100	0.2076	0.0025	1.2%
7.9	T-SERVICE UNIT RATE	\$/m³	0.1024	0.0999	0.0025	2.5%	0.0899	0.0874	0.0025	2.8%
7.10	SALES UNIT RATE	\$/GJ	5.7932	5.7290	0.0642	1.1%	5.4671	5.4028	0.0642	1.2%
7.11	T-SERVICE UNIT RATE	\$/GJ	2.6643	2.6000	0.0642	2.5%	2.3399	2.2757	0.0642	2.8%

Rate 170 - Average Ind. Interr. - 75% LF							Rate 170 - Large Ind. Interr. - 75% LF					
			(A)	(B)	CHANGE				(A)	(B)	CHANGE	
					(A) - (B)	%					(A) - (B)	%
8.1	VOLUME	m³	9,976,120	9,976,120	0	0.0%	69,832,850	69,832,850	0	0.0%		
8.2	CUSTOMER CHG.	\$	3,352	3,352	0	0.0%	3,352	3,352	0	0.0%		
8.3	DISTRIBUTION CHG.	\$	434,697	410,084	24,612	6.0%	2,927,308	2,755,023	172,285	6.3%		
8.4	LOAD BALANCING	\$	451,611	451,611	0	0.0%	3,161,278	3,161,278	0	0.0%		
8.5	SALES COMMDTY	\$	1,198,581	1,198,581	0	0.0%	8,390,068	8,390,068	0	0.0%		
8.6	TOTAL SALES	\$	2,088,240	2,063,628	24,612	1.2%	14,482,005	14,309,720	172,285	1.2%		
8.7	TOTAL T-SERVICE	\$	889,659	865,047	24,612	2.8%	6,091,937	5,919,652	172,285	2.9%		
8.8	SALES UNIT RATE	\$/m³	0.2093	0.2069	0.0025	1.2%	0.2074	0.2049	0.0025	1.2%		
8.9	T-SERVICE UNIT RATE	\$/m³	0.0892	0.0867	0.0025	2.8%	0.0872	0.0848	0.0025	2.9%		
8.10	SALES UNIT RATE	\$/GJ	5.4483	5.3841	0.0642	1.2%	5.3977	5.3335	0.0642	1.2%		
8.11	T-SERVICE UNIT RATE	\$/GJ	2.3212	2.2569	0.0642	2.8%	2.2706	2.2064	0.0642	2.9%		

ANNUAL BILL COMPARISON - RESIDENTIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTER

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6	Col. 7	Col. 8
			Heating & Water Htg.				Heating, Water Htg. & Other Uses				
			(A)	(B)	CHANGE			(A)	(B)	CHANGE	
					(A) - (B)	%				(A) - (B)	%
1.1	VOLUME	m³	3,064	3,064	0	0.0%		4,691	4,691	0	0.0%
1.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%		240.00	240.00	0.00	0.0%
1.3	DISTRIBUTION CHG.	\$	269.01	268.86	0.15	0.1%		405.54	405.31	0.23	0.1%
1.4	LOAD BALANCING	\$	217.92	217.92	0.00	0.0%		333.67	333.67	0.00	0.0%
1.5	SALES COMMDTY	\$	369.18	369.18	0.00	0.0%		565.23	565.23	0.00	0.0%
1.6	TOTAL SALES	\$	1,096.11	1,095.96	0.15	0.0%		1,544.44	1,544.21	0.23	0.0%
1.7	TOTAL T-SERVICE	\$	726.93	726.78	0.15	0.0%		979.21	978.98	0.23	0.0%
1.8	SALES UNIT RATE	\$/m³	0.3577	0.3577	0.0000	0.0%		0.3292	0.3292	0.0000	0.0%
1.9	T-SERVICE UNIT RATE	\$/m³	0.2372	0.2372	0.0000	0.0%		0.2087	0.2087	0.0000	0.0%
1.10	SALES UNIT RATE	\$/GJ	9.3113	9.3100	0.0013	0.0%		8.5694	8.5681	0.0013	0.0%
1.11	T-SERVICE UNIT RATE	\$/GJ	6.1752	6.1739	0.0013	0.0%		5.4332	5.4319	0.0013	0.0%

Heating Only							Heating & Water Htg.			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
2.1	VOLUME	m³	1,955	1,955	0	0.0%	2,005	2,005	0	0.0%
2.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%	240.00	240.00	0.00	0.0%
2.3	DISTRIBUTION CHG.	\$	172.54	172.45	0.10	0.1%	179.53	179.44	0.10	0.1%
2.4	LOAD BALANCING	\$	139.05	139.05	0.00	0.0%	142.62	142.62	0.00	0.0%
2.5	SALES COMMDTY	\$	235.56	235.56	0.00	0.0%	241.59	241.59	0.00	0.0%
2.6	TOTAL SALES	\$	787.15	787.06	0.10	0.0%	803.74	803.65	0.10	0.0%
2.7	TOTAL T-SERVICE	\$	551.59	551.50	0.10	0.0%	562.15	562.06	0.10	0.0%
2.8	SALES UNIT RATE	\$/m³	0.4026	0.4026	0.0000	0.0%	0.4009	0.4008	0.0000	0.0%
2.9	T-SERVICE UNIT RATE	\$/m³	0.2821	0.2821	0.0000	0.0%	0.2804	0.2803	0.0000	0.0%
2.10	SALES UNIT RATE	\$/GJ	5.538	5.538	0.0000	0.0%	10.4339	10.4326	0.0013	0.0%
2.11	T-SERVICE UNIT RATE	\$/GJ	2.410	2.410	0.0000	0.0%	7.2977	7.2964	0.0013	0.0%

§ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - RESIDENTIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6	Col. 7	Col. 8		
Heating, Pool Htg. & Other Uses							General & Water Htg.						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
3.1	VOLUME	m³	5,048	5,048	0	0.0%		1,081	1,081	0	0.0%		
3.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%		240.00	240.00	0.00	0.0%		
3.3	DISTRIBUTION CHG.	\$	436.17	435.92	0.25	0.1%		101.30	101.24	0.05	0.1%		
3.4	LOAD BALANCING	§ \$	359.06	359.06	0.00	0.0%		76.88	76.88	0.00	0.0%		
3.5	SALES COMMDTY	\$	608.25	608.25	0.00	0.0%		130.26	130.26	0.00	0.0%		
3.6	TOTAL SALES	\$	1,643.48	1,643.23	0.25	0.0%		548.44	548.38	0.05	0.0%		
3.7	TOTAL T-SERVICE	\$	1,035.23	1,034.98	0.25	0.0%		418.18	418.12	0.05	0.0%		
3.8	SALES UNIT RATE	\$/m³	0.3256	0.3255	0.0000	0.0%		0.5073	0.5073	0.0000	0.0%		
3.9	T-SERVICE UNIT RATE	\$/m³	0.2051	0.2050	0.0000	0.0%		0.3868	0.3868	0.0000	0.0%		
3.10	SALES UNIT RATE	\$/GJ	8.4740	8.4727	0.0013	0.0%		13.2052	13.2039	0.0013	0.0%		
3.11	T-SERVICE UNIT RATE	\$/GJ	5.3378	5.3365	0.0013	0.0%		10.0688	10.0675	0.0013	0.0%		
Heating & Water Htg.							Heating & Water Htg.						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
3.1	VOLUME	m³	2,480	2,480	0	0.0%		2,400	2,400	0	0.0%		
3.2	CUSTOMER CHG.	\$	240.00	240.00	0.00	0.0%		240.00	240.00	0.00	0.0%		
3.3	DISTRIBUTION CHG.	\$	219.65	219.53	0.12	0.1%		212.63	212.51	0.12	0.1%		
3.4	LOAD BALANCING	§ \$	176.41	176.41	0.00	0.0%		170.72	170.72	0.00	0.0%		
3.5	SALES COMMDTY	\$	298.82	298.82	0.00	0.0%		289.19	289.19	0.00	0.0%		
3.6	TOTAL SALES	\$	934.88	934.76	0.12	0.0%		912.54	912.42	0.12	0.0%		
3.7	TOTAL T-SERVICE	\$	636.06	635.94	0.12	0.0%		623.35	623.23	0.12	0.0%		
3.8	SALES UNIT RATE	\$/m³	0.3770	0.3769	0.0000	0.0%		0.3802	0.3802	0.0000	0.0%		
3.9	T-SERVICE UNIT RATE	\$/m³	0.2565	0.2564	0.0000	0.0%		0.2597	0.2597	0.0000	0.0%		
3.10	SALES UNIT RATE	\$/GJ	9.8117	9.8105	0.0013	0.0%		9.8965	9.8952	0.0013	0.0%		
3.11	T-SERVICE UNIT RATE	\$/GJ	6.6756	6.6743	0.0013	0.0%		6.7602	6.7590	0.0013	0.0%		

§ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - COMMERCIAL & INDUSTRIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6	Col. 7	Col. 8		
Commercial Heating & Other Uses							Com. Htg., Air Cond'ng & Other Uses						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
1.1	VOLUME	m³	22,606	22,606	0	0.0%		29,278	29,278	0	0.0%		
1.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%		840.00	840.00	0.00	0.0%		
1.3	DISTRIBUTION CHG.	\$	1,572.21	1,571.10	1.10	0.1%		2,017.33	2,015.90	1.43	0.1%		
1.4	LOAD BALANCING	\$	1,579.40	1,579.40	0.00	0.0%		2,045.53	2,045.53	0.00	0.0%		
1.5	SALES COMMDTY	\$	2,728.68	2,728.68	0.00	0.0%		3,534.04	3,534.04	0.00	0.0%		
1.6	TOTAL SALES	\$	6,720.29	6,719.18	1.10	0.0%		8,436.90	8,435.47	1.43	0.0%		
1.7	TOTAL T-SERVICE	\$	3,991.61	3,990.50	1.10	0.0%		4,902.86	4,901.43	1.43	0.0%		
1.8	SALES UNIT RATE	\$/m³	0.2973	0.2972	0.0000	0.0%		0.2882	0.2881	0.0000	0.0%		
1.9	T-SERVICE UNIT RATE	\$/m³	0.1766	0.1765	0.0000	0.0%		0.1675	0.1674	0.0000	0.0%		
1.10	SALES UNIT RATE	\$/GJ	7.7376	7.7363	0.0013	0.0%		7.5004	7.4991	0.0013	0.0%		
1.11	T-SERVICE UNIT RATE	\$/GJ	4.5959	4.5946	0.0013	0.0%		4.3586	4.3574	0.0013	0.0%		
Medium Commercial Customer							Large Commercial Customer						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
2.1	VOLUME	m³	169,563	169,563	0	0.0%		339,125	339,125	0	0.0%		
2.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%		840.00	840.00	0.00	0.0%		
2.3	DISTRIBUTION CHG.	\$	8,485.27	8,476.99	8.28	0.1%		15,547.01	15,530.44	16.56	0.1%		
2.4	LOAD BALANCING	\$	11,846.70	11,846.70	0.00	0.0%		23,693.29	23,693.29	0.00	0.0%		
2.5	SALES COMMDTY	\$	20,467.26	20,467.26	0.00	0.0%		40,934.42	40,934.42	0.00	0.0%		
2.6	TOTAL SALES	\$	41,639.23	41,630.95	8.28	0.0%		81,014.72	80,998.15	16.56	0.0%		
2.7	TOTAL T-SERVICE	\$	21,171.97	21,163.69	8.28	0.0%		40,080.30	40,063.73	16.56	0.0%		
2.8	SALES UNIT RATE	\$/m³	0.2456	0.2455	0.0000	0.0%		0.2389	0.2388	0.0000	0.0%		
2.9	T-SERVICE UNIT RATE	\$/m³	0.1249	0.1248	0.0000	0.0%		0.1182	0.1181	0.0000	0.0%		
2.10	SALES UNIT RATE	\$/GJ	6.3917	6.3904	0.0013	0.0%		6.2179	6.2167	0.0013	0.0%		
2.11	T-SERVICE UNIT RATE	\$/GJ	3.2499	3.2487	0.0013	0.0%		3.0762	3.0749	0.0013	0.0%		

\$ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - COMMERCIAL & INDUSTRIAL CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6	Col. 7	Col. 8		
Industrial General Use							Industrial Heating & Other Uses						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
3.1	VOLUME	m³	43,285	43,285	0	0.0%		63,903	63,903	0	0.0%		
3.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%		840.00	840.00	0.00	0.0%		
3.3	DISTRIBUTION CHG.	\$	2,788.53	2,786.42	2.11	0.1%		3,742.22	3,739.10	3.12	0.1%		
3.4	LOAD BALANCING	\$	3,024.14	3,024.14	0.00	0.0%		4,464.65	4,464.65	0.00	0.0%		
3.5	SALES COMMDTY	\$	5,224.76	5,224.76	0.00	0.0%		7,713.49	7,713.49	0.00	0.0%		
3.6	TOTAL SALES	\$	11,877.43	11,875.32	2.11	0.0%		16,760.36	16,757.24	3.12	0.0%		
3.7	TOTAL T-SERVICE	\$	6,652.67	6,650.56	2.11	0.0%		9,046.87	9,043.75	3.12	0.0%		
3.8	SALES UNIT RATE	\$/m³	0.2744	0.2744	0.0000	0.0%		0.2623	0.2622	0.0000	0.0%		
3.9	T-SERVICE UNIT RATE	\$/m³	0.1537	0.1536	0.0000	0.0%		0.1416	0.1415	0.0000	0.0%		
3.10	SALES UNIT RATE	\$/GJ	7.1421	7.1409	0.0013	0.0%		6.8266	6.8253	0.0013	0.0%		
3.11	T-SERVICE UNIT RATE	\$/GJ	4.0004	3.9991	0.0013	0.0%		3.6848	3.6836	0.0013	0.0%		
Medium Industrial Customer							Large Industrial Customer						
			(A)	(B)	CHANGE					(A)	(B)	CHANGE	
					(A) - (B)	%						(A) - (B)	%
4.1	VOLUME	m³	169,563	169,563	0	0.0%		339,124	339,124	0	0.0%		
4.2	CUSTOMER CHG.	\$	840.00	840.00	0.00	0.0%		840.00	840.00	0.00	0.0%		
4.3	DISTRIBUTION CHG.	\$	8,687.75	8,679.47	8.28	0.1%		15,697.72	15,681.15	16.56	0.1%		
4.4	LOAD BALANCING	\$	11,846.70	11,846.70	0.00	0.0%		23,693.23	23,693.23	0.00	0.0%		
4.5	SALES COMMDTY	\$	20,467.27	20,467.27	0.00	0.0%		40,934.29	40,934.29	0.00	0.0%		
4.6	TOTAL SALES	\$	41,841.72	41,833.44	8.28	0.0%		81,165.24	81,148.67	16.56	0.0%		
4.7	TOTAL T-SERVICE	\$	21,374.45	21,366.17	8.28	0.0%		40,230.95	40,214.38	16.56	0.0%		
4.8	SALES UNIT RATE	\$/m³	0.2468	0.2467	0.0000	0.0%		0.2393	0.2393	0.0000	0.0%		
4.9	T-SERVICE UNIT RATE	\$/m³	0.1261	0.1260	0.0000	0.0%		0.1186	0.1186	0.0000	0.0%		
4.10	SALES UNIT RATE	\$/GJ	6.4228	6.4215	0.0013	0.0%		6.2295	6.2282	0.0013	0.0%		
4.11	T-SERVICE UNIT RATE	\$/GJ	3.2810	3.2797	0.0013	0.0%		3.0878	3.0865	0.0013	0.0%		

§ The Load Balancing Charge shown here includes proposed transportation charges

ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Rate 100 - Small Commercial Firm							Rate 100 - Average Commercial Firm			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
1.1	VOLUME	m³	339,188	339,188	0	0.0%	598,567	598,567	0	0.0%
1.2	CUSTOMER CHG.	\$	1,464	1,464	0	0.0%	1,464	1,464	0	0.0%
1.3	DISTRIBUTION CHG.	\$	13,670	13,653	17	0.1%	66,106	66,077	29	0.0%
1.4	LOAD BALANCING	\$	23,698	23,698	0	0.0%	41,819	41,819	0	0.0%
1.5	SALES COMMDTY	\$	40,942	40,942	0	0.0%	72,251	72,251	0	0.0%
1.6	TOTAL SALES	\$	79,774	79,757	17	0.0%	181,640	181,611	29	0.0%
1.7	TOTAL T-SERVICE	\$	38,832	38,815	17	0.0%	109,390	109,360	29	0.0%
1.8	SALES UNIT RATE	\$/m³	0.2352	0.2351	0.0000	0.0%	0.3035	0.3034	0.0000	0.0%
1.9	T-SERVICE UNIT RATE	\$/m³	0.1145	0.1144	0.0000	0.0%	0.1828	0.1827	0.0000	0.0%
1.10	SALES UNIT RATE	\$/GJ	6.1216	6.1203	0.0013	0.0%	7.8984	7.8972	0.0013	0.0%
1.11	T-SERVICE UNIT RATE	\$/GJ	2.9798	2.9785	0.0013	0.0%	4.7567	4.7554	0.0013	0.0%
Rate 100 - Large Industrial Firm										
			(A)	(B)	CHANGE					
					(A) - (B)	%				
2.1	VOLUME	m³	1,500,000	1,500,000	0	0.0%				
2.2	CUSTOMER CHG.	\$	1,464	1,464	0	0.0%				
2.3	DISTRIBUTION CHG.	\$	132,873	132,800	73	0.1%				
2.4	LOAD BALANCING	\$	104,799	104,799	0	0.0%				
2.5	SALES COMMDTY	\$	181,059	181,059	0	0.0%				
2.6	TOTAL SALES	\$	420,195	420,122	73	0.0%				
2.7	TOTAL T-SERVICE	\$	239,136	239,063	73	0.0%				
2.8	SALES UNIT RATE	\$/m³	0.2801	0.2801	0.0000	0.0%				
2.9	T-SERVICE UNIT RATE	\$/m³	0.1594	0.1594	0.0000	0.0%				
2.10	SALES UNIT RATE	\$/GJ	7.2913	7.2900	0.0013	0.0%				
2.11	T-SERVICE UNIT RATE	\$/GJ	4.1495	4.1482	0.0013	0.0%				

**ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS**

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Rate 145 - Small Commercial Interr.							Rate 145 - Average Commercial Interr.			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
3.1	VOLUME	m³	339,188	339,188	0	0.0%	598,568	598,568	0	0.0%
3.2	CUSTOMER CHG.	\$	1,480	1,480	0	0.0%	1,480	1,480	0	0.0%
3.3	DISTRIBUTION CHG.	\$	10,709	10,693	17	0.2%	15,837	15,808	29	0.2%
3.4	LOAD BALANCING	\$	18,957	18,957	0	0.0%	33,454	33,454	0	0.0%
3.5	SALES COMMDTY	\$	40,764	40,764	0	0.0%	71,937	71,937	0	0.0%
3.6	TOTAL SALES	\$	71,911	71,894	17	0.0%	122,709	122,679	29	0.0%
3.7	TOTAL T-SERVICE	\$	31,146	31,130	17	0.1%	50,772	50,742	29	0.1%
3.8	SALES UNIT RATE	\$/m³	0.2120	0.2120	0.0000	0.0%	0.2050	0.2050	0.0000	0.0%
3.9	T-SERVICE UNIT RATE	\$/m³	0.0918	0.0918	0.0000	0.1%	0.0848	0.0848	0.0000	0.1%
3.10	SALES UNIT RATE	\$/GJ	5.5182	5.5169	0.0013	0.0%	5.3359	5.3346	0.0013	0.0%
3.11	T-SERVICE UNIT RATE	\$/GJ	2.3901	2.3888	0.0013	0.1%	2.2077	2.2065	0.0013	0.1%
Rate 145 - Small Industrial Interr.							Rate 145 - Average Industrial Interr.			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
4.1	VOLUME	m³	339,188	339,188	0	0.0%	598,567	598,567	0	0.0%
4.2	CUSTOMER CHG.	\$	1,480	1,480	0	0.0%	1,480	1,480	0	0.0%
4.3	DISTRIBUTION CHG.	\$	10,982	10,965	17	0.2%	16,079	16,049	29	0.2%
4.4	LOAD BALANCING	\$	18,957	18,957	0	0.0%	33,454	33,454	0	0.0%
4.5	SALES COMMDTY	\$	40,764	40,764	0	0.0%	71,937	71,937	0	0.0%
4.6	TOTAL SALES	\$	72,183	72,167	17	0.0%	122,950	122,921	29	0.0%
4.7	TOTAL T-SERVICE	\$	31,419	31,403	17	0.1%	51,013	50,984	29	0.1%
4.8	SALES UNIT RATE	\$/m³	0.2128	0.2128	0.0000	0.0%	0.2054	0.2054	0.0000	0.0%
4.9	T-SERVICE UNIT RATE	\$/m³	0.0926	0.0926	0.0000	0.1%	0.0852	0.0852	0.0000	0.1%
4.10	SALES UNIT RATE	\$/GJ	5.5391	5.5378	0.0013	0.0%	5.3464	5.3451	0.0013	0.0%
4.11	T-SERVICE UNIT RATE	\$/GJ	2.4110	2.4097	0.0013	0.1%	2.2183	2.2170	0.0013	0.1%

ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8		
Rate 110 - Small Ind. Firm - 50% LF						Rate 110 - Average Ind. Firm - 50% LF					
		(A)	(B)	CHANGE				(A)	(B)	CHANGE	
				(A) - (B)	%					(A) - (B)	%
5.1	VOLUME	m³	598,568	598,568	0	0.0%	9,976,121	9,976,121	0	0.0%	
5.2	CUSTOMER CHG.	\$	7,048	7,048	0	0.0%	7,048	7,048	0	0.0%	
5.3	DISTRIBUTION CHG.	\$	14,616	14,587	29	0.2%	239,830	239,343	487	0.2%	
5.4	LOAD BALANCING	\$	34,369	34,369	0	0.0%	572,819	572,819	0	0.0%	
5.5	SALES COMMDTY	\$	71,915	71,915	0	0.0%	1,198,581	1,198,581	0	0.0%	
5.6	TOTAL SALES	\$	127,949	127,920	29	0.0%	2,018,279	2,017,792	487	0.0%	
5.7	TOTAL T-SERVICE	\$	56,034	56,005	29	0.1%	819,698	819,211	487	0.1%	
5.8	SALES UNIT RATE	\$/m³	0.2138	0.2137	0.0000	0.0%	0.2023	0.2023	0.0000	0.0%	
5.9	T-SERVICE UNIT RATE	\$/m³	0.0936	0.0936	0.0000	0.1%	0.0822	0.0821	0.0000	0.1%	
5.10	SALES UNIT RATE	\$/GJ	5.5637	5.5625	0.0013	0.0%	5.2658	5.2645	0.0013	0.0%	
5.11	T-SERVICE UNIT RATE	\$/GJ	2.4366	2.4353	0.0013	0.1%	2.1386	2.1374	0.0013	0.1%	
Rate 110 - Average Ind. Firm - 75% LF						Rate 115 - Large Ind. Firm - 80% LF					
		(A)	(B)	CHANGE				(A)	(B)	CHANGE	
				(A) - (B)	%					(A) - (B)	%
6.1	VOLUME	m³	9,976,120	9,976,120	0	0.0%	69,832,850	69,832,850	0	0.0%	
6.2	CUSTOMER CHG.	\$	7,048	7,048	0	0.0%	7,471	7,471	0	0.0%	
6.3	DISTRIBUTION CHG.	\$	192,872	192,385	487	0.3%	993,229	989,819	3,411	0.3%	
6.4	LOAD BALANCING	\$	572,819	572,819	0	0.0%	3,863,363	3,863,363	0	0.0%	
6.5	SALES COMMDTY	\$	1,198,581	1,198,581	0	0.0%	8,390,068	8,390,068	0	0.0%	
6.6	TOTAL SALES	\$	1,971,321	1,970,833	487	0.0%	13,254,131	13,250,721	3,411	0.0%	
6.7	TOTAL T-SERVICE	\$	772,740	772,253	487	0.1%	4,864,064	4,860,653	3,411	0.1%	
6.8	SALES UNIT RATE	\$/m³	0.1976	0.1976	0.0000	0.0%	0.1898	0.1897	0.0000	0.0%	
6.9	T-SERVICE UNIT RATE	\$/m³	0.0775	0.0774	0.0000	0.1%	0.0697	0.0696	0.0000	0.1%	
6.10	SALES UNIT RATE	\$/GJ	5.1433	5.1420	0.0013	0.0%	4.9401	4.9388	0.0013	0.0%	
6.11	T-SERVICE UNIT RATE	\$/GJ	2.0161	2.0148	0.0013	0.1%	1.8129	1.8117	0.0013	0.1%	

ANNUAL BILL COMPARISON - LARGE VOLUME CUSTOMERS
INCLUDING CAP AND TRADE IMPACTS FOR LARGE FINAL EMITTERS

(A) EB-2017-0224 @ 38.42 MJ/m³ vs (B) Proposed EB-2017-0086 @ 38.42 MJ/m³

Item No.			Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8
Rate 135 - Seasonal Firm							Rate 170 - Average Ind. Interr. - 50% LF			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
7.1	VOLUME	m³	598,567	598,567	0	0.0%	9,976,121	9,976,121	0	0.0%
7.2	CUSTOMER CHG.	\$	1,381	1,381	0	0.0%	3,352	3,352	0	0.0%
7.3	DISTRIBUTION CHG.	\$	11,210	11,181	29	0.3%	86,740	86,253	487	0.6%
7.4	LOAD BALANCING	\$	27,370	27,370	0	0.0%	451,611	451,611	0	0.0%
7.5	SALES COMMDTY	\$	71,957	71,957	0	0.0%	1,198,581	1,198,581	0	0.0%
7.6	TOTAL SALES	\$	111,918	111,889	29	0.0%	1,740,284	1,739,796	487	0.0%
7.7	TOTAL T-SERVICE	\$	39,961	39,932	29	0.1%	541,703	541,215	487	0.1%
7.8	SALES UNIT RATE	\$/m³	0.1870	0.1869	0.0000	0.0%	0.1744	0.1744	0.0000	0.0%
7.9	T-SERVICE UNIT RATE	\$/m³	0.0668	0.0667	0.0000	0.1%	0.0543	0.0543	0.0000	0.1%
7.10	SALES UNIT RATE	\$/GJ	4.8666	4.8654	0.0013	0.0%	4.5405	4.5392	0.0013	0.0%
7.11	T-SERVICE UNIT RATE	\$/GJ	1.7377	1.7364	0.0013	0.1%	1.4133	1.4121	0.0013	0.1%
Rate 170 - Average Ind. Interr. - 75% LF							Rate 170 - Large Ind. Interr. - 75% LF			
			(A)	(B)	CHANGE		(A)	(B)	CHANGE	
					(A) - (B)	%			(A) - (B)	%
8.1	VOLUME	m³	9,976,120	9,976,120	0	0.0%	69,832,850	69,832,850	0	0.0%
8.2	CUSTOMER CHG.	\$	3,352	3,352	0	0.0%	3,352	3,352	0	0.0%
8.3	DISTRIBUTION CHG.	\$	79,555	79,068	487	0.6%	441,316	437,906	3,411	0.8%
8.4	LOAD BALANCING	\$	451,611	451,611	0	0.0%	3,161,278	3,161,278	0	0.0%
8.5	SALES COMMDTY	\$	1,198,581	1,198,581	0	0.0%	8,390,068	8,390,068	0	0.0%
8.6	TOTAL SALES	\$	1,733,099	1,732,611	487	0.0%	11,996,014	11,992,603	3,411	0.0%
8.7	TOTAL T-SERVICE	\$	534,518	534,030	487	0.1%	3,605,946	3,602,535	3,411	0.1%
8.8	SALES UNIT RATE	\$/m³	0.1737	0.1737	0.0000	0.0%	0.1718	0.1717	0.0000	0.0%
8.9	T-SERVICE UNIT RATE	\$/m³	0.0536	0.0535	0.0000	0.1%	0.0516	0.0516	0.0000	0.1%
8.10	SALES UNIT RATE	\$/GJ	4.5217	4.5205	0.0013	0.0%	4.4712	4.4699	0.0013	0.0%
8.11	T-SERVICE UNIT RATE	\$/GJ	1.3946	1.3933	0.0013	0.1%	1.3440	1.3427	0.0013	0.1%