



Lorraine Chiasson  
Regulatory Coordinator  
Regulatory Affairs

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

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

February 23, 2017

**VIA RESS, EMAIL and COURIER**

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

Dear Ms Walli:

**Re: Enbridge Gas Distribution Inc. ("Enbridge")  
Cap and Trade Compliance Plan ("Application")  
Ontario Energy Board ("OEB" or "Board") File Number: EB-2016-0300**

Further to Enbridge's submission, enclosed please find an update to Exhibit B, Tab 3, Schedule 1. Details of the correction are provided below:

Exhibit	Original	Correction
Exhibit B, Tab 3, Schedule 1 updated 2017-02-23	Exhibit B, Tab 3, Schedule 1	Correction to pps 2 and 3, paras 6 and 7 and pps 4 and 5, tables 3, 4 and 5

This submission was filed through the Board's Regulatory Electronic Submission System and will be available on the Enbridge website at:  
[www.enbridgegas.com/ratecase](http://www.enbridgegas.com/ratecase).

Please contact the undersigned if you have any questions.

Yours truly,

[original signed]

Lorraine Chiasson  
Regulatory Coordinator

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

EXHIBIT LIST

A – ADMINISTRATIVE DOCUMENTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>A</u>	1	1	Table of Contents	
		2	Executive Summary	A. Langstaff J. Murphy F. Oliver-Glasford
	2	1	Administration/Application	A. Mandyam F. Oliver-Glasford
	3	1	Confidentiality	S. Mills F. Oliver-Glasford
	4	1	Curriculum Vitae	
		2	Curriculum Vitae – Consultant	
	5	1	Glossary of Terms	

B – FORECASTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>B</u>	1	1	Forecasting Period	A. Langstaff J. Murphy F. Oliver-Glasford
	2	1	Volume Forecasts	R. Cheung R. DiMaria J. Murphy M. Suarez
			Appendix A – Cap and Trade Declaration Form	R. DiMaria A. Langstaff J. Murphy

EXHIBIT LIST

B – FORECASTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>B</u>	3	1	GHG Emissions Forecasts	J. Murphy
	4	1	Annual Carbon Price Forecasts	A. Langstaff J. Murphy F. Oliver-Glasford

C – COMPLIANCE PLAN DOCUMENTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>C</u>	1	1	Overview of Compliance Plan	M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn
			Appendix A –Carbon Market Report	Alpha Inception - Consultant
			Appendix B –Carbon Strategy Report	Alpha Inception - Consultant
	2	1	Compliance Option Analysis and Optimization of Decision-making	M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn

EXHIBIT LIST

C – COMPLIANCE PLAN DOCUMENTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>C</u>	3	1	Performance Metrics and Cost Information	A. Langstaff J. Murphy F. Oliver-Glasford
		2	Compliance Plan – Allowance Purchase	M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn
		3	Compliance Plan – Offset Credits	M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn
		4	Compliance Plan – Abatement Activities – Customer	M. Lister S. Mills F. Oliver-Glasford D. Teichroeb J. Tideman
		5	Compliance Plan – Abatement Activities – Facility	J. Murphy E. Naczynski
		6	Administrative Costs	A. Langstaff D. McIlwraith F. Oliver-Glasford R. Small E. Vangelova

EXHIBIT LIST

C – COMPLIANCE PLAN DOCUMENTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>C</u>	4	1	Risk Management – Identification and Mitigation	M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn
	5	1	Longer Term Investments	A. Langstaff J. Murphy F. Oliver-Glasford
	6	1	New Business Activities	S. McGill

D – MONITORING AND REPORTING

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>2017 Operating Costs</u>				
<u>D</u>	1	1	Annual Monitoring and Reporting Reports	A. Langstaff J. Murphy F. Oliver-Glasford

E – CUSTOMER OUTREACH

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>E</u>	1	1	Customer Outreach and Information	R. DiMaria C. Meyer D. McIlwraith F. Oliver-Glasford

EXHIBIT LIST

E – CUSTOMER OUTREACH

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>E</u>	1	1	Appendix A – Enbridge Gas Distribution – 2017 Cap and Trade Outreach Communication Plan	R. DiMaria C. Meyer D. McIlwraith F. Oliver-Glasford
			Appendix B – Connecting with our Customers	R. DiMaria C. Meyer D. McIlwraith F. Oliver-Glasford
			Appendix C – Learn How Cap and Trade will Affect your Bill	R. DiMaria C. Meyer D. McIlwraith F. Oliver-Glasford
			Appendix D – Envelope – Learn How Ontario’s Cap and Trade will Affect your Bill	R. DiMaria C. Meyer D. McIlwraith F. Oliver-Glasford
			Appendix E – January 2017 Bill Mock Up	R. DiMaria C. Meyer D. McIlwraith F. Oliver-Glasford
			Appendix F – The Ontario Cap and Trade Program	R. DiMaria C. Meyer F. Oliver-Glasford
			Appendix G – Regulatory Update	R. DiMaria A. Kacicnik C. Meyer F. Oliver-Glasford

## EXHIBIT LIST

### E – CUSTOMER OUTREACH

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>E</u>	1	1	Appendix H – Regulation Update	R. DiMaria C. Meyer F. Oliver-Glasford

### F – DEFERRAL AND VARIANCE ACCOUNTS

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>E</u>	1	1	Deferral Account Statements	R. Craddock A. Langstaff J. Murphy F. Oliver-Glasford R. Small

### G – COST RECOVERY

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>G</u>	1	1	Cost Recovery Statements	A. Kacicnik A. Langstaff J. Murphy
			Appendix A – Cap and Trade Exhibits Enbridge Estimated Floor Price	A. Kacicnik A. Langstaff J. Murphy
			Appendix B – Rate Schedules	A. Kacicnik A. Langstaff J. Murphy

EXHIBIT LIST

G – COST RECOVERY

<u>Exhibit</u>	<u>Tab</u>	<u>Schedule</u>	<u>Contents</u>	<u>Witness(es)</u>
<u>G</u>	1	2	Alternate Cost Recovery Statements	A. Kacicnik A. Langstaff J. Murphy
			Appendix A – Cap and Trade Exhibits OEB Methodology	A. Kacicnik A. Langstaff J. Murphy



## EXECUTIVE SUMMARY

1. Enbridge Gas Distribution Inc. (“Enbridge” or the “Company”) has prepared this 2017 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 this Compliance Plan addresses all of the Framework’s guiding principles and satisfies all of its requirements and as such, should be approved and accepted by the Board.
2. Enbridge’s 2017 Compliance Plan is a starting point from which the Company will build upon over the course of the first Cap and Trade program compliance period of 2017 to 2020. Given that the carbon market is nascent in North America, and particularly in Ontario, there is an obvious and recognized learning curve for all parties involved regarding aspects of carbon market strategy design and implementation. There are also a number of market uncertainties including whether Ontario will link with the California and Québec carbon markets in 2018 and whether the Cap and Trade program will continue in California post 2020. As such, Enbridge has focused on creating a well-conceived and thorough one-year Compliance Plan which focuses on a number of critical areas including governance processes, risk mitigation, transparency, monitoring and reporting, cost prudence and customer outreach.
3. Enbridge determined that a prudent course of action in developing its Compliance Plan would involve engaging a third-party carbon market expert. Enbridge conducted a comprehensive request for proposal (“RFP”) review process through which a successful candidate, Alpha Inception (“AI”) was selected. As part of this

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

engagement, AI provided the Company with a Carbon Market Report and a Carbon Strategy Report which were extensively used to inform the development of the Compliance Plan. Given that these documents contain confidential information and data, in compliance with the prohibition against disclosure of certain information under the *Climate Change Act* and the confidentiality rules established by the Board, both of these documents have been filed confidentially and are intended for the Board's consideration only.

4. The Carbon Market Report (the "Report") includes commercial, market and other information that was helpful and relied upon in preparing the Company's risk mitigation procedures and carbon procurement strategy.
5. The Carbon Strategy Report provides suggested options for compliance, as well as related analysis that Enbridge used in the development of its ultimate strategy. Enbridge's recommended strategy is outlined in robust and transparent detail in this filing.
6. In this 2017 Compliance Plan, Enbridge has considered all options for meeting its compliance obligation including market instruments and emission abatement activities. Each instrument employed and abatement activity considered has been detailed and discussed. All details around which, how and when market instruments are to be utilized are filed confidentially as these are an integral part of the Company's procurement strategy. In addition to market-based instruments, Enbridge has identified that its current Green Investment Fund ("GIF") activities, namely the whole home retrofit program, are incremental to its approved Demand Side Management ("DSM") plan for 2017. Such activities will follow the same rigorous evaluation, measurement and verification protocols as DSM projects. As

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

GIF is forecasted to have verifiable and incremental impacts on the Province's greenhouse gas ("GHG") reduction targets, these impacts are identified for the purposes of the Company's 2017 Compliance Plan.

7. Looking ahead to 2018 and beyond, Enbridge will continue to explore both customer-related and facility-related emission abatement activities including the development and implementation of longer-term investments discussed in Exhibit C, Tab 5, Schedule 1, Table 1. It is the Company's understanding that DSM will be addressed independently in the DSM Mid-Term Review. Approval for these longer-term capital investments will be the subject of appropriate future rate applications or leave to construct applications.
8. Enbridge has developed a governance management system following the 'Plan, Do, Check, Act' model familiar to the Company that will ensure due diligence is taken throughout the procurement process. Information will be compiled for all activities undertaken by Enbridge in fulfilment of its Compliance Plan. The information for 2017 will be compiled using the annual report templates outlined in Exhibit D, Tab 1, Schedule 1 which will be submitted to the Board by August 1, 2018.
9. To develop our 2017 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.

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

10. 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 estimated auction reserve, or floor, price of \$17.70 per emission allowance. For information regarding the derivation of this price, please refer to Exhibit G, Tab 1, Schedule 1.
11. The Company has included a rate schedule prepared with the average of the ICE 21-day settlement prices of a California Carbon Allowance for each day of the forecasted period for each month of the forecast year ("21-day ICE Price") as identified in Section 5.2.3 of the Framework. The ICE forecast, while relevant in a linked market, is not appropriate for an unlinked Ontario-only market. As identified in Exhibit B, Tab 4, Schedule 1, the 21-day ICE Price results in a forecast which is below the forecasted 2017 Ontario auction floor. For discussion regarding the carbon allowance price used for rate setting purposes, refer to Exhibit B, Tab 4, Schedule 1.
12. As identified in Exhibit G, Tab 1, Schedule 1, Enbridge requests approval for the use of the Company's estimated auction reserve price.
13. Enbridge has set out the necessary regulatory accounting treatment for the various components of costs that will be arise – customer-related costs, facility-related costs, and administrative costs. Reference Exhibit F, Tab 1, Schedule 1.
14. Enbridge recognizes the tight timelines associated with the implementation of Cap and Trade relative to other regulatory proceedings. However, the Company believes that it is in the best interests of customers to have an interim Cap and

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

Trade rate for Customer-related obligations and Facility-related obligations in place as soon as possible. In order to include cap and trade costs in the billing system by January 1, 2017, Enbridge respectfully asks the Board to approve an interim tariff by December 2, 2016.

15. During the past year, Enbridge has proactively communicated with its residential and business customers regarding the potential impacts of Cap and Trade. Communications have included advising customers about the Company's energy savings programs to help customers minimize their GHG emissions and Cap and Trade costs before the launch of the government's Cap and Trade program on January 1, 2017.
16. This Application seeks the specific relief as sought out in the Application filed at Exhibit A, Tab 2, Schedule 1. In summary, this Executive Summary has briefly reviewed the many of the areas identified in the Application and as required by the Board.

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 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 ("tCO<sub>2</sub>e"), as well as "voluntary participants" in the cap and trade program who emit between 10,000 and 25,000 tCO<sub>2</sub>e and purchase their own emissions allowances however would 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 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;

Witness: A. Mandyam  
F. Oliver-Glasford

- b. Facility-related obligation costs: costs to acquire the necessary emission allowances associated with 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; 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 expects Enbridge to file its Compliance Plan by November 15, 2016 in order for the Board to set interim rates to allow for the recovery of 2017 Cap and Trade compliance costs.<sup>1</sup> The Framework further 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.<sup>2</sup>

5. 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 2017 being the fourth year of its five-year term. Neither the Custom IR plan, nor the 2017 Rate Adjustment Application (EB-2016-0215) provide for the recovery of the costs which Enbridge will incur undertaking Cap and Trade Compliance Plan Activities in 2017 and beyond. This Application therefore seeks the appropriate orders, approvals and acceptances by the Board to establish rates and/or charges over and above those set pursuant to Enbridge's Custom IR plan and the 2017 Rate Adjustment Application.

---

<sup>1</sup> Framework, page 38

<sup>2</sup> Framework, page 1

Witness: A. Mandyam  
F. Oliver-Glasford

6. 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 the lack of data around Ontario's nascent carbon market;
- c. It demonstrates that Enbridge's 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 possible based on the uncertainty inherent in the unknown, new Ontario carbon market;
- 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.

7. 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 as may be necessary or appropriate to approve the following:

- a. 2017 Customer-related and Facilities-related Tariffs (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. The methodology used to determine the Cap and Trade Tariffs including:

Witness: A. Mandyam  
F. Oliver-Glasford



- i. the forecasting methodology and resulting 2017 forecast of Delivery Volumes and Facility Use Volumes including the impact on such forecasts of Enbridge's Green Investment Fund (GIF) and Demand Side Management (DSM) activities;
  - ii. the forecasting methodology and resulting 2017 forecast of GHG emissions resulting from the Delivery Volumes and Facility Use Volumes forecasts;
  - iii. the forecasting methodology and resulting 2017 forecast for the cost of emission allowances;
  - iv. the forecasting methodology and resulting forecast of the costs to meet Enbridge's Customer and Facility-related obligations; and
  - v. the cost allocation and rate design methodologies used to derive the proposed 2017 Cap and Trade Tariffs.
- c. Interim Cap and Trade Tariffs, to be approved on or before December 2, 2016 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 the Cap and Trade start date of January 1, 2017;
- d. The establishment of a new variance account to record the differences that occur in 2017 between the actual revenues received from the Cap and Trade Tariffs and the actual costs Enbridge incurs to meet its 2017 obligations related to GHG emissions from relevant customers and Company facilities. This new variance account will ensure that the Company neither over or under-recovers its Customer-related obligation costs and Facility-related obligation costs; and
- e. The use of the 2017 Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA") to record the administrative and overhead costs incurred by Enbridge in respect of its Cap and Trade activities for future recovery from ratepayers.
- f. 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.

Witness: A. Mandyam  
F. Oliver-Glasford

8. 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 and Documents marked “Auction Confidential” or “Market Sensitive” 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.

9. 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.

10. 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. Enbridge has utilized the auction reserve, or floor, price of the Ontario market in 2017 for allowance price forecasting for rate making purposes instead of the Intercontinental Exchange 21-day strip settlement price of the California Carbon Allowance for delivery in each of the 12 months of the forecast year. – Exhibit B-Tab 4-Schedule 1

11. 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:

Witness: A. Mandyam  
F. Oliver-Glasford

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](mailto:EGDRegulatoryProceedings@enbridge.com)

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

Address for personal service:

Suite 410, 2255 Sheppard Avenue East  
North York, ON M2J 4Y1

Mailing address:

P. O. Box 650  
Scarborough, Ontario M1K 5E3

Telephone:

416-753-4664

Email:

[fiona.oliverglasford@enbridge.com](mailto:fiona.oliverglasford@enbridge.com)

Witness: A. Mandyam  
F. Oliver-Glasford

The Applicant's counsel:

Mr. Dennis M. O'Leary  
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:

416-865-4711  
416-863-1515

DATED: November 15, 2016 at Toronto, Ontario

ENBRIDGE GAS DISTRIBUTION INC.

Per: \_\_\_\_\_ [original signed]

Andrew Mandyam  
Director, Regulatory Affairs, Financial Planning  
and Analysis

Witness: A. Mandyam  
F. Oliver-Glasford

CONFIDENTIALITY

1. It is clear from both the 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) reads: Subsection (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 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 development, the appropriate approach must not only comply with the *Climate Change Act* and

Witnesses: S. Mills  
F. Oliver-Glasford

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, it 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 but notes that in respect of some filings, there would be no practical benefit in filing a redacted document, given the extensiveness of the redacting.
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 must evolve as the market matures. Enbridge also agrees that it is appropriate to exercise caution at this stage. This is of particular importance in 2017 when the Cap and Trade market will be limited to Ontario. 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.

Witnesses: S. Mills  
F. Oliver-Glasford

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, that should be treated in confidence. In cases where Enbridge wishes to keep commercial and/or strategic information confidential, a request will be made in accordance with the Board's existing Rules and Practice Direction if and when applicable. Enbridge requests that at this early stage of the Cap and Trade market, the Board should err on the side of caution in making its determination about the appropriateness of treating information strictly confidentially.
8. In California there has been an evolution in respect of Confidentiality protocols. In a recent Application before the Public Utilities Commission of the State of California (13-08-002) involving an application by Southern California Edison Company (U338E) for Approval of its Greenhouse Gas Cap and Trade Program Costs and Revenue Allocation, the Commission ordered changes relative to previous applications with respect to confidentiality protocols. The Commission held that Total forecast GHG costs or revenue requirements using a proxy price should no longer be treated in confidence. Pursuant to Attachment A of document D-14-10-033, the Commission held that this information should be made public.<sup>1</sup>
9. Despite the decision of the California Commission, Enbridge is of the view that at this early stage of the Ontario market, such information should be treated and received in strict confidence. Releasing market sensitive information could provide inappropriate advantages to market participants that could ultimately increase the costs of compliance to Enbridge's customers.

---

<sup>1</sup> Decision on Application 13-08-002 Before the Public Utilities Commission of the State of California a Matter of the Application of Southern California Edison Company (U338E) for Approval of Greenhouse Gas Cap-and-Trade Program Cost and Revenue Allocation. Page 1

Witnesses: S. Mills  
F. Oliver-Glasford

10. The information below outlines the various exhibits within this filing to which Enbridge is requesting strictly confidential treatment. The exhibits are divided amongst the three categories: Auction Confidential, Market Sensitive Confidential and Commercially Sensitive 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 or, in the case of commercially sensitive information, why a request for confidential treatment should be approved in accordance with the Board's Practice Direction on Confidential Filings. 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.
11. In its January 11, 2017 letter to Enbridge, the Board asked Enbridge to review areas of evidence it outlined which it proposed be placed on the public record (the "Listed Evidence") and file either updated redacted versions of the documents or provide any objections and explanations why any portions of the Listed Evidence should not be on the public record. Table A identifies with high-level reasons those sections identified from the Listed Evidence in the Board's letter which Enbridge Gas believes must remain strictly confidential due to prohibitions against the disclosure of auction and market sensitive information under the Climate Change Act and/or Regulations.
12. There are numerous reasons why the Company believes that some of the items included in the Listed Evidence identified by the Board are strictly confidential and should not be disclosed. In a number of instances, to state the reason(s) specifically would amount to revealing the very information that should not be disclosed and hence it is inappropriate to state in a public document. What can be stated which is applicable to all of the items that Enbridge believes are strictly confidential is that it believes that the information which has been redacted, either on its own or in

Witnesses: S. Mills  
F. Oliver-Glasford



combination with information found elsewhere on the public record, could be used by a third party to take actions which could negatively affect the Company's ability to minimize the costs of its Compliance Plan and/or it would provide information about the procurement option strategies that the Company has considered and is proposing. For example, the fact that the Company is or is not pursuing a particular strategy or the extent to which it is proposing a particular strategy in part are matters that should not be disclosed. To the extent that third parties are able to take steps based on information disclosed which results in an increase in the cost of Enbridge meeting its compliance obligations, then ratepayers will be negatively affected. It is Enbridge's view, particularly given that 2017 is the first year of market operation in Ontario and given that the carbon market only operates in Ontario in 2017 that a conservative approach should be taken to what information is disclosed. Accordingly, where items included in the Listed Evidence could provide any indication of Enbridge's auction and Compliance Plan strategies, Enbridge believes that the information must necessarily be strictly confidential consistent with the requirements of the Climate Change Act.

Witnesses: S. Mills  
F. Oliver-Glasford

Table A: EGD Proposed Exceptions to OEB Proposed Redaction Removal

Exhibit Item	Reference	Paragraph (unless otherwise noted)	Treatment (extent of disclosure)	Rationale
C-1-1	Overview of Compliance Plan	10 (last sentence), 14 (first two sentences), and 63 (sentence 2).	Strictly Confidential (OEB, Enbridge Gas)	Market Confidential
C-1-1	Overview of Compliance Plan	6 (last sentence), 8 (last sentence) 24 (first two sentences), and 29 (after “approved”).	Strictly Confidential (OEB, Enbridge Gas)	Market Confidential and Auction Confidential
C-1-1, Appendix A	Carbon Market Report	Pages 9 to 10, and pages 35 to 46	Strictly Confidential (OEB, Enbridge Gas)	Market Confidential
C-2-1	Compliance Option Analysis and Optimization of Decision-Making	35 (second half of the first sentence, after the word “options”), 38, and 40.	Strictly Confidential (OEB, Enbridge Gas)	Market Confidential
C-3-5	Compliance Plan – Abatement Activities Facilities	9	Strictly Confidential (OEB, Enbridge Gas)	Market Confidential and Auction Confidential
C-4-1	Risk Management – Identification and Mitigation	4 (bullet c)), 9, 11, 32 (item 2) in second sentence), 37, 45, 48, 55 (last sentence), 60 (second sentence), 62, 66 (first sentence after	Strictly Confidential (OEB, Enbridge Gas)	Market Confidential and Auction Confidential

Witnesses: S. Mills  
F. Oliver-Glasford

Exhibit Item	Reference	Paragraph (unless otherwise noted)	Treatment (extent of disclosure)	Rationale
		“necessary”), 69, 75 (last sentence and footnote), 87 (first sentence to “the Cap...”), 89 (last sentence after “allowances”), 106, 107, 108 (last two sentences), 109 (second sentence), 114, 115, 118, 122, 125 (first two sentences)		
F-1-1	Deferral and Variance Accounts	6 (mid paragraph, short redaction after “estimated at”)	Strictly Confidential (OEB, Enbridge Gas)	Auction Confidential

13. The revised tables below outlines the treatment of confidentiality by Exhibit item. Where an Exhibit has been determined to be strictly confidential the Exhibit in its entirety is deemed strictly confidential and will be filed in confidence for the Board’s consideration only. Where an Exhibit has sections of the information determined to be strictly confidential it has been Redacted and the redacted version will be filed on the public record. All other Exhibits are considered to be Public.

Witnesses: S. Mills  
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-4-2	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	Redacted
C-1-1	Redacted
C-1-1 Appendix A	Strictly Confidential
C-1-1 Appendix B	Redacted
C-2-1	Redacted
C-3-1	Redacted
C-3-2	Strictly Confidential

Exhibit Item	Treatment
C-3-3	Strictly Confidential
C-3-4	Public
C-3-5	Redacted
C-3-6	Public
C-4-1	Redacted
C-5-1	Public
C-6-1	Public
D-1-1	Public
E-1-1	Public
E-1-1 Appendices A through H	Public
F-1-1	Redacted
G-1-1	Public
G-1-1 Appendix A	Strictly Confidential
G-1-1 Appendix B	Public
G-1-1 Appendix C	Public
G-1-2	Public

Witnesses: S. Mills  
F. Oliver-Glasford

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
B-4-1	Annual Carbon Price Forecasts	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 <sup>2</sup> .
C-1-1 & Appendices A & B	Overview of Compliance Plan		
C-2-1	Compliance Option Analysis and Optimization of Decision-making		
C-3-1	Performance Metrics and Cost Information		
C-3-2	Compliance Plan – Allowance Purchase Performance Metrics and Cost Information		
C-4-1	Risk Management – Identification		
F-1-1	Deferral and Variance Accounts		

<sup>2</sup> 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: S. Mills  
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. <sup>3</sup>		
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
B-4-1	Annual Carbon Price Forecasts	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 <sup>4</sup>
C-1-1 & Appendices A & B	Overview of Compliance Plan		
C-2-1	Compliance Option Analysis and Optimization of Decision-making		
C-3-1	Performance Metrics and Cost Information		
C-3-3	Compliance Plan – Offset Credits		
C-4-1	Risk Management – Identification		
G-1-1 Appendix A	Cap and Trade Exhibits		

<sup>3</sup>EB-2015-0363 Report of the Board Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities, Page 10

<sup>4</sup> 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: S. Mills  
F. Oliver-Glasford

ADDENDUM January 27, 2017

As of January 27, 2017, the references below, which were filed as strictly confidential on November 15, 2016, have now been placed on the public record.

**Exhibit B, Tab 4, Schedule 1 (Annual Carbon Price Forecasts)**

- paragraphs 1-3, 5-7, 10-14, 20 – 24 and 29
- headings preceding paragraphs 18 and 25

**Exhibit C, Tab 1, Schedule 1 (Overview of Compliance Plan)**

- paragraphs 1 – 8 (excluding last two sentences), 9
- paragraph 10 (excluding the first two sentences and the last sentence)
- paragraph 11 (first sentence only)
- paragraphs 14, 16 – 21
- paragraph 22 (first sentence only)
- paragraphs 23, 24 (except first two sentences), 25-28, 29 (excluding last sentence), 30- 32
- heading preceding paragraph 35
- paragraphs 42, 44 (first 2 sentences only)
- paragraphs 45 –62, 63 (except second sentence)
- paragraph 64 (heading and first 2 sentences only)

**Exhibit C, Tab 1, Schedule 1, Appendix A (Carbon Market Report)**

- entire report excluding specific areas deemed strictly confidential

**Exhibit C, Tab 1, Schedule 1, Appendix B (Carbon Strategy Report)**

- cover page
- pages 4-5 (excluding last paragraph and heading)

**Exhibit C, Tab 2, Schedule 1 (Compliance Option Analysis and Optimization of Decision-Making)**

- paragraphs 1 – 4,
- headings preceding paragraphs 16, 25, 27
- paragraphs 17, 19 – 21,
- paragraphs 33 – 40

**Exhibit C, Tab 3, Schedule 1 (Performance Metrics and Cost Information)**

- paragraphs 1 – 2, 6 – 10

Witnesses: S. Mills  
F. Oliver-Glasford

**Exhibit C, Tab 3, Schedule 5 (Compliance Plan – Abatement Activities – Facility)**

- paragraph 9

**Exhibit C, Tab 4, Schedule 1 (Risk Management – Identification and Mitigation)**

- paragraphs 1 – 3, 4 (except bullet “c”), 5-8, 9 (except last two sentences), 10, 12
- heading preceding paragraph 28
- paragraphs 31, 32 (excluding item 2), 34 – 36, 38 – 44, 47, 51, 52, 54, 55 (except last sentence), 56, 58, 59, 60 (except second last sentence)
- paragraph 61 (excluding the last sentence)
- paragraphs 63 – 65, 66 (except first sentence after “...necessary”), 70 – 74, 75 (except last sentence and footnote), 76, 79, 80, 82, 83, 85, 86, 87 (except first sentence), 88, 89 (excluding remainder of sentence after “...surrendering allowances”), 90-92, 94, 95, 96
- heading preceding paragraph 97
- paragraphs 98, 102 – 105, 108 (except last two sentences), 109 (except second sentence), 110, 111, 112 – 113, 117, 121, 123, 124, 125 (except first and second sentences)

**Exhibit G, Tab 1, Schedule 2 (Alternate Cost Recovery Statements)**

- entire exhibit



CURRICULUM VITAE OF  
RYAN CHEUNG

Experience: Enbridge Gas Distribution Inc.

Advisor, Economic Analysis  
2016

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-2016-0142  
EB-2014-0195  
EB-2012-0459

CURRICULUM VITAE OF  
ROD CRADDOCK

Experience: Enbridge Inc.

Senior Manager/Technical Advisor, Treasury  
July 2014

Controller, Enbridge Income Fund  
November 2012

Manager, Enbridge Income Fund Accounting  
July 2011

Education: CA (2002)  
B. Comm. University of Saskatchewan (1999)

Memberships: Institute of Chartered Accountants of Alberta

Appearances: (Ontario Energy Board)

EB-2016-0215  
EB-2015-0114  
EB-2014-0276

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-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-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  
MATTHEW KIRK

Experience: Enbridge Gas Distribution Inc.

Gas Supply Regulation Specialist, Gas Supply & Strategy  
2016

Gas Supply Regulation Specialist, Energy Supply & Policy  
2015

Cost Allocation Manager, Regulatory Affairs  
2012

Senior Rate Design Analyst, Regulatory Affairs  
2010

Rate Design Analyst, Regulatory Affairs  
2009

Market Analyst, Economic and Market Analysis  
2006

Education: Master of Arts (Economics)  
Wilfrid Laurier University, 2006

Bachelor of Arts (Honours Economics)  
McMaster University, 2005

Memberships: Canadian Association of Business Economists (CABE)

Appearances: (Ontario Energy Board)

EB-2016-0215

EB-2015-0122

EB-2014-0276

EB-2013-0046

EB-2012-0055

EB-2015-0114

EB-2014-0323

EB-2014-0195

EB-2012-0459

EB-2011-0354

(Régie de L'Energie)

R-3924-2015

R-3840-2013

R-3884-2014

R-3793-2012

CURRICULUM VITAE OF  
ANDREW LANGSTAFF

Experience: Enbridge Gas Distribution Inc.

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  
Masters 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)

None

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

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-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 Strategist  
2016

Sr. Manager Business Development System Expansion

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-2016-0004	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

Enbridge Gas Distribution Inc.

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-2015-0114  
EB-2014-0276  
EB-2012-0459

CURRICULUM VITAE OF  
CHRIS MEYER

Experience: Enbridge Gas Distribution Inc.

Stakeholder Relations and Communication Specialist  
2016

Stakeholder Relations and Communication Manager, Carbon Strategy  
2015

energy4everyone Foundation

Acting Executive Director  
2014

Enbridge Gas Distribution Inc.

Manager, External Communications  
2011

Manager, Executive Communication Support  
2008

Senior Communication Advisor  
2001

Education: Strategic Communication Management Certificate  
(Ithaca College), 2008

Bachelor of Applied Arts, Journalism  
(Ryerson), 1990

Memberships: International Association of Business Communicators (Accredited)

Appearances: (Ontario Energy Board)

EB-2012-0459  
EB-2011-0354

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-2015-0049

CURRICULUM VITAE OF  
JENNIFER MURPHY

Experience: Enbridge Gas Distribution Inc.

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 (B.Sc.(Eng))  
University of Guelph, 2003

Environmental Science Technician  
Sheridan College, 1997

Appearances: (Ontario Energy Board)

None

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

Memberships: Professional Engineers Ontario

Appearances: (Ontario Energy Board)  
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  
Masters of Business Administration  
With an International Exchange at Copenhagen School of Business  
  
Western University – Huron College  
Bachelor of Arts

Appearances: (Ontario Energy Board)

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

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

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-2016-0215  
EB-2015-0122  
EB-2012-0459  
EB-2011-0277  
EB-2009-0172  
EB-2008-0106

EB-2015-0114  
EB-2014-0276  
EB-2011-0354  
EB-2010-0146  
EB-2008-0219

(RÉGIE DE L'ÉNERGIE)  
R-3758-2011  
R-3692-2009

R-3724-2010  
R-3665-2008

CURRICULUM VITAE OF  
DAVID TEICHROEB

Experience: Enbridge Gas Distribution Inc.

Senior Strategist – Low Carbon Energy Solutions  
2016

Manager Business Development – New Ventures  
2015

Manager Business Development Implementation  
2015

Enbridge Inc.

Business Development - Emerging Technologies  
2012

Manager, Fuel Cell Markets – Alternative Technology  
2008

Enbridge Gas Distribution Inc.

Manager, New Technology Development  
2004

Manager - Sales and Work Management Centre  
2003

Regional Manager – Enbridge Atlantic Energy Services  
2001

Manager - Market Development Sales  
2000

Manager - Commercial Sales  
1997

Commercial / Industrial Utilization Representative  
1993

Education: Chartered Industrial Gas Consultant – Institute of Gas Technology  
1997

Mechanical Engineering Technology - Niagara College  
1990

Memberships: Canadian Hydrogen Fuel Cell Association  
Energy Storage Canada

Appearances: N/A

CURRICULUM VITAE OF  
JOHN TIDEMAN

Experience: Enbridge Gas Distribution Inc.

Senior Manager, Green Investment Fund  
2016

Senior Manager, Organisational Change Management, WAMS Project 2014

Senior Manager, DSM Sales and Marketing  
2013

Senior Manager, Commercial Sales and Marketing  
2012

Manager, Business Development  
2009

Enbridge Electric Connections Inc

Manager, Business Development  
2006

Direct Energy

Manager, Business Development  
2003

Total Fina Elf Gas and Power

Sales Manager  
1995

Education: Kingston University Business School  
Master of Business Administration degree.

Durham College  
Business Administration Diploma; Marketing

Memberships: Member and Director of Mabel Hart & Marion Hill Foundation

Appearances: (Ontario Energy Board)

EB-2012-0394

CURRICULUM VITAE OF  
EVGENIA VANGELOVA, BA, CPA, CGA

Experience: Enbridge Gas Distribution Inc.

Senior Manager, Tax Services  
2011

Baxter Corporation

Manager, Tax and Treasury  
2008

Manager, Income Tax  
2007

Federal Express Canada

Tax Accountant  
2003

Canadian Tire Corporation, Ltd.

Tax Accountant  
2001

S. A. Armstrong Ltd.

Cost Analyst  
2000

Accounts Receivable Analyst  
1998

Education: Chartered Professional Accountant (CPA), 2014

CICA In-Depth Tax Course, 2009

Certified General Accountant (CGA), 2007

Bachelor of Arts in Economics, University of Economics, Varna (1994)

Memberships: Chartered Professional Accountants Canada

Certified General Accountants of Ontario

Tax Executives Institute

Canadian Tax Foundation



CURRICULUM VITAE OF  
ANDREW WELBURN

Experience: Enbridge Gas Distribution Inc.

Manager Gas Supply and Strategy  
2014

Manager Upstream Business Partners  
2012

Manager Contract Relationships  
2008

Manager Operations Performance Reporting  
2006

Manager Contract Support and Compliance  
2001

Manager Transactional Services Sales  
2000

Supervisor Gas Control  
1997

Leak Surveyor  
1997

Supervisor Pipeline Inspector  
1994

Operations Engineer  
1994

Load Research Technician  
1992

Education: Bachelor of Applied Science in Civil Engineering  
University of Waterloo

Memberships: Professional Engineer Ontario  
Ontario Society of Professional Engineers

Appearances: (Ontario Energy Board)

EB-2014-0289  
EB-2015-0049  
EB-2015-0122  
EB-2015-0175  
EB-2015-0238  
EB-2016-0142

(National Energy Board)

MH-001-2013  
RH-001-2016

CURRICULUM VITAE OF  
KRISTOPHER ANDRE TEMPLEMAN

Experience: Alpha Inception, LLC.

Owner and Managing Director  
2012

Macquarie Energy LLC

Senior Vice President  
Head of Power Origination – WECC and ERCOT  
2008

Goldman, Sachs and Co.

Vice President  
WECC Power Origination  
2007

Iberdrola Renewables

Manager Power Origination  
2004

Duke Energy Trading and Marketing

Manager Power Origination  
2001

Enron Canada Corp.

Manager, Energy Marketing  
1999

Education: Master of Business Administration with Distinction  
University of Western Ontario, 1999

Bachelor of Arts  
York University, 1995

Appearances: (Ontario Energy Board)

None

CURRICULUM VITAE  
OF MARK ANDREW  
STRUK

Experience: Alpha Inception, LLC.

Senior Vice President  
2012

Macquarie Energy LLC

Senior Manager, Power & Natural Gas Derivatives Sales  
2009

Talisman Energy, Inc.

Joint Venture Accountant, North American Finance  
2003

Education: Master of Business Administration with Distinction  
ESADE Business School, 2009

Bachelor of Arts, Economics - Applied Energy  
University of Calgary, 2007

Appearances: None

## GLOSSARY OF TERMS

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.”

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

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

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.

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

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”).

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

LARGE FINAL EMITTER (“LFE”) – Large Final Emitter (“LFE”) 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 *Ontario Regulation 144/16, The Cap and Trade Program*.

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 Framework.

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.

REGULATORY FRAMEWORK FOR THE ASSESSMENT OF COSTS OF NATURAL GAS UTILITIES’ CAP AND TRADE ACTIVITIES (EB-2015-0363) (“Framework”) – Ontario Energy Board proceeding providing regulatory requirements to natural gas utilities in Ontario regarding implementation and participation in Cap and Trade.

TONNES OF CARBON DIOXIDE EQUIVALENT (“t CO<sub>2</sub>e”) – 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*.

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

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.

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

FORECASTING PERIOD

1. Enbridge elects to file a one-year Compliance Plan for 2017 at this time.
2. The Climate Change Mitigation and Low-carbon Economy Act, 2016 (“Climate Change Act”) and compliance obligations are new to Enbridge, as well as Ontario. The ability to file a one-year Compliance Plan for 2017 will allow Enbridge to continue to gain market intelligence and operational experience.
3. After Enbridge has the opportunity to gain market experience, received the 10-year carbon price forecast and marginal abatement cost curve from the Board, and the Western Climate Initiative (“WCI”) linkage is confirmed, the Company will be in a better position to determine whether the subsequent Compliance Plan will be for one-year, i.e., 2018, or three years, covering the remainder of the first Cap and Trade program compliance period to the end of 2020.
4. In either situation, Enbridge understands that its next Compliance Plan will be required to be submitted to the Board by August 1, 2017.

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



### VOLUME FORECASTS

1. This evidence sets out Enbridge's 2017 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 recently used by Enbridge in its 2017 Rate Application (EB-2016-0215, Exhibit C1, Tab 2, Schedule 1).

#### Customer-Related Volume Forecast

3. The total Customer-related obligation was determined by using the 2017 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 those 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 forecast of natural gas sales and transportation volumes in Enbridge's 2017 Rate Application is 11,752,200  $10^3\text{m}^3$ , which excludes unbundled Rate 125 and Rate 300 customers. Evidence on Enbridge's 2017 customer gas volume forecast is set out in Exhibit C1, Tab 2, Schedule 1 of EB-2016-0215.

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

5. 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 developed a forecast for the unbundled Rate 125 and Rate 300 customers of  $631,427 \text{ } 10^3\text{m}^3$ , which is included in the volumes shown on Table 1 of this exhibit. Although the Company’s grassroots forecast methodology for contract market customers includes power generators, the nature of Rate 125 contracts only require a forecast of peak demand, not annual demand. As a result, not all Rate 125 volumes included for the purpose of forecasting obligation were provided by customers. In cases where a customer declined to provide an annual forecast, historical consumption was used. In the future, Enbridge will continue to work with its customers and endeavor to work with the Independent Electricity System Operator (“IESO”) to develop a more accurate annual forecast for the power generators.
6. The volume in the 2017 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  $12,411,973 \text{ } 10^3\text{m}^3$ , as shown on Table 1 of this exhibit. To provide transparency, DSM volumes have been shown separately in this application and constitute a  $28,445 \text{ } 10^3\text{m}^3$  partially effective volumetric reduction.
7. In addition to the DSM volumes, the Framework also prescribes that customer-related abatement, which is incremental to the existing DSM plan, be shown separately. Enbridge has received proceeds from the government’s Green Investment Fund (“GIF”) to conduct customer-related abatement activity (outlined in

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

more detail in Exhibit C, Tab 2, Schedule 1). The GIF-funded customer-related abatement is incremental to anything that has been built into volumes for 2017 and incremental to Enbridge's approved DSM plan. The volume reductions associated with this program have not been included in Table 1, as they are minor relative to the total volumes and are not confirmed at this time. It is anticipated that the volume reduction will be approximately  $13,000 \times 10^3 \text{m}^3$ , however, this is a test case on reporting and submitting verified volume reductions and will be documented in the annual monitoring and reporting submitted to the Board and used for true up purposes.

8. 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 ("tCO<sub>2</sub>e") per year. Voluntary participants are customers with facilities that emit above 10,000 tCO<sub>2</sub>e, but less than the mandatory participant level of 25,000 tCO<sub>2</sub>e 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 Cap and Trade compliance obligations. Capped participants will be required to obtain allowances, either through free allocation from the Government or by purchasing allowances, to match their annual GHG emissions. These customers will not be billed for Customer-related obligations by Enbridge.
9. Volumetric forecasts were provided for those facilities that are on a draft Capped Participants List that was provided to Enbridge by the Ministry of the Environment and Climate Change ("MOECC") on October 7, 2016. This list includes mandatory participants, or LFEs, and voluntary participants who were known to MOECC as of

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

October 7, 2016. As this date is prior to the registration deadline of November 30, 2016 for mandatory participants, this list is subject to change.

10. Where customers on the Capped Participants List had multiple locations or multiple meters, customers were contacted by Enbridge's Account Executives to clarify which locations and meters are included in the customers' GHG reporting and therefore included in the customers' Cap and Trade obligations. The total amount forecasted for all capped participants known as of October 7, 2016, is 1,024,744  $10^3\text{m}^3$ . This amount was subtracted from the 2017 total forecast gas volume.
11. In November, Enbridge reached out more formally to customers who are capped participants with a customer Cap and Trade Declaration Form. The form will create a second layer of confidence in the forecasted GHG emission obligation. The customer Declaration Form is attached as Appendix A to Exhibit B, Tab 2, Schedule 1.
12. 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 total amount forecasted for landfill gas is 34,992  $10^3\text{m}^3$  as billed on Rate 300. This amount was subtracted from the 2017 total forecast gas volume.
13. Similarly, 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. Subsequently, the total amount forecasted for Gazifère is 170,843  $10^3\text{m}^3$  as billed on Rate 200. This amount was subtracted from the 2017 total forecast gas volume.

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

14. With the exclusions of total volumes of  $1,230,579 \text{ } 10^3\text{m}^3$  as noted in the preceding paragraphs, the total customer-related volume is  $11,152,950 \text{ } 10^3\text{m}^3$ .

Facility-Related Volume Forecast

15. 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. 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 reflected in part in the Company's Gas Cost to Operations and System Requirements (EB-2016-0215, Exhibit D1 Tab 2 Schedule 5).
16. In total, Enbridge forecasts its facility-related gas volumes for 2017 to be  $122,407 \text{ } 10^3\text{m}^3$ . A detailed breakdown of forecast facility-related gas volumes is provided in Table 2 of this evidence.

Total 2017 Volume Forecast

17. The total volume forecast, inclusive of both the customer-related and Company facility-related volumes, is  $11,275,357 \text{ } 10^3\text{m}^3$ . 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: 2017 CUSTOMER-RELATED VOLUMES

(10<sup>3</sup>m<sup>3</sup>)

Line	Rate	Col. 1 Budget Forecast Volumes Before DSM	Col. 2 DSM Volume	Col. 3 Customer Abatement Volume	Col. 4 Capped Participant Volumes	Col. 5 Other Exempt Gas Volume <sup>1</sup>	Col. 6 Net Volumes <sup>2</sup>
1.1	1	4,917,009.6	5,531.7	0.0	0.0	0.0	4,911,477.9
1.2	6	4,879,281.2	17,012.0	0.0	120,126.9	0.0	4,742,142.3
1.3	9	262.8	0.0	0.0	0.0	0.0	262.8
1.4	100	0.0	0.0	0.0	0.0	0.0	0.0
1.5	110	864,132.9	2,698.1	0.0	403,080.8	0.0	458,354.0
1.6	115	492,449.6	2,157.7	0.0	304,439.5	0.0	185,852.4
1.7a	125	305,896.4	0.0	0.0	0.0	0.0	305,896.4
1.7b	125D <sup>3</sup>	325,082.3	0.0	0.0	0.0	0.0	325,082.3
1.8	135	60,984.4	85.4	0.0	0.0	0.0	60,899.0
1.9	145	63,702.7	384.5	0.0	14,091.0	0.0	49,227.2
1.10	170	296,888.2	575.2	0.0	183,005.6	0.0	113,307.4
1.11	200	170,842.7	0.0	0.0	0.0	170,842.7	0.0
1.12	300	35,440.4	0.0	0.0	0.0	34,992.0	448.4
1	Total Customer-Related	12,411,973.2	28,444.6	0.0	1,024,743.8	205,834.7	11,152,950.1

Notes:

(1) Includes volumes delivered to downstream distributor and landfill gas

(2) Col. 1 - Col. 2 - Col. 3 - Col. 4 - Col. 5

(3) Dedicated unbundled customers

TABLE 2: 2017 FACILITY-RELATED VOLUMES

(10<sup>3</sup>m<sup>3</sup>)

Line	Volumes
1.	Company Use - Buildings
2.	Company Use - Boilers
3.	
4.	Company Use - Fleet
5.	Total Company Use
6.	Unaccounted For Gas (UAF)
7.	Compressor Fuel
8.	Total Facility-Related

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

TABLE 3: 2017 SUMMARY OF CUSTOMER-RELATED AND FACILITY-RELATED FORECAST VOLUMES

<u>Line</u>	<u>Description</u>	<u>2017 Forecast</u>
<u>Customer-Related Volume Forecast</u>		
1	Gross Volumes before DSM and Customer Abatement ( $10^3\text{m}^3$ )	12,411,973
2	Less: Demand Side Management (DSM) ( $10^3\text{m}^3$ )	(28,445)
3	<u>Less: Customer Abatement (<math>10^3\text{m}^3</math>)</u>	<u>0</u>
4	Subtotal: Net Volumes ( $10^3\text{m}^3$ )	12,383,529
5	Less: Throughput to Capped Participants ( $10^3\text{m}^3$ )	(1,024,744)
6	<u>Less: Gas to Other Exempt Customers (<math>10^3\text{m}^3</math>)</u>	<u>(205,835)</u>
7	<b>Net Customer Related Volumes to end users (<math>10^3\text{m}^3</math>)</b>	<b>11,152,950</b>
<u>Facility-Related Volume Forecast</u>		
8.a.	Company Use Gas - Building ( $10^3\text{m}^3$ )	1,506
8.b.	Company Use Gas - Boiler ( $10^3\text{m}^3$ )	3,930
8.c.	<u>Company Use Gas - Fleet (<math>10^3\text{m}^3</math>)</u>	<u>1,500</u>
8	Total Company Use Gas ( $10^3\text{m}^3$ )	6,936
9	Unaccounted for Gas ( $10^3\text{m}^3$ )	98,279
10	<u>Compressor Fuel (<math>10^3\text{m}^3</math>)</u>	<u>17,192</u>
11	<b>Net Facility-Related Volumes (<math>10^3\text{m}^3</math>)</b>	<b>122,407</b>
12	<b><u>Total Customer-Related and Facility-Related Volumes (Line 7 + Line 11) (<math>10^3\text{m}^3</math>)</u></b>	<b><u>11,275,357</u></b>

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*.

**Declaration Forms not received by Enbridge by December 7, 2016 advising of the Customer's participation in the Cap and Trade Program will result in Enbridge obtaining and surrendering emission allowances in respect of the Customer's emissions generated from the natural gas delivered by Enbridge.**

## Cap and Trade Declaration Form:

The purpose of this form is for the Customer to provide direction to Enbridge regarding their participation in Ontario's Cap and Trade program. This form will be used to identify whether a 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 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 rates, when available.

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](http://www.ontario.ca/capandtrade). When available, Enbridge's Cap and Trade rates can be found at [www.enbridgegas.com/capandtrade](http://www.enbridgegas.com/capandtrade).

## 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](mailto:contractsupportandcompliance@enbridge.com) by Wednesday, December 7, 2016.

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

"Facility" includes all buildings, structures and stationary items, such as surfaces and storage piles, that are owned or operated by the same person, and (a) are located on a single site, or (b) 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.

☐ 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.

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. I recognize that Enbridge will charge 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 longer participate as a voluntary participant and instead elect Enbridge to purchase and surrender my emissions allowances on my behalf.

By: \_\_\_\_\_

Name:

Title:

### GHG EMISSIONS FORECASTS

1. This evidence sets out an overview of Enbridge's 2017 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"), Enbridge as a natural gas distributor, 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). It should be noted that 2016 is the first year that reporting under sections ON. 400 and ON.350 is required for natural gas utilities.
3. Enbridge has prepared 2017 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 ("tCO<sub>2</sub>e"), using the methodology, emission factors and global warming potentials provided in the O.Reg 143/16 and the Guidelines.

#### Customer-Related Emissions Forecast

5. The total customer-related emissions for 2017 based on the customer-related volume forecast is 20,907,621 tCO<sub>2</sub>e, accounting for 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 customer-related GHG emission forecast is set out in Table 1 and 2 of this exhibit.

#### Facility-Related Emissions Forecast

6. The total facility-related emissions for 2017 based on the facility-related volume forecast is 230,055 tCO<sub>2</sub>e, accounting for 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 Table 3 and 4 of this exhibit.

#### Total 2017 GHG Emissions Forecast

7. The total GHG emissions forecast, inclusive of both the customer-related and facility-related volumes is 21,137,676 tCO<sub>2</sub>e. A summary of the GHG emissions is included in Table 5 of this evidence.

TABLE 1: 2017 CUSTOMER-RELATED EMISSIONS BY RATE CLASS

		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
Line	Rate	Net Volumes <sup>1</sup> (10 <sup>3</sup> m <sup>3</sup> )	CO <sub>2</sub> Emissions <sup>2</sup> (Tonnes CO <sub>2</sub> )	CH <sub>4</sub> Emissions <sup>3</sup> (Tonnes CH <sub>4</sub> )	N <sub>2</sub> O Emissions <sup>4</sup> (Tonnes N <sub>2</sub> O)	Net CO <sub>2</sub> e Emissions <sup>5</sup> (Tonnes CO <sub>2</sub> e)
1.1	1	4,911,477.9	9,150,083.3	181.7	171.9	9,207,189.1
1.2	6	4,742,142.3	8,834,611.1	175.5	166.0	8,889,748.0
1.3	9	262.8	489.6	0.0	0.0	492.7
1.4	100	0.0	0.0	0.0	0.0	0.0
1.5	110	458,354.0	853,913.5	17.0	16.0	859,242.8
1.6	115	185,852.4	346,243.0	6.9	6.5	348,403.9
1.7a	125	305,896.4	569,885.0	11.3	10.7	573,441.7
1.7b	125D	325,082.3	605,628.3	12.0	11.4	609,408.1
1.8	135	60,899.0	113,454.8	2.3	2.1	114,162.9
1.9	145	49,227.2	91,710.3	1.8	1.7	92,282.6
1.10	170	113,307.4	211,091.7	4.2	4.0	212,409.1
1.11	200	0.0	0.0	0.0	0.0	0.0
1.12	300	448.4	835.37	0.02	0.02	840.6
1	Total Customer-Related	11,152,950.1	20,777,946.0	412.7	390.4	20,907,621.4

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 <sub>2</sub> Emission Factor <sup>6</sup>	CH <sub>4</sub> Emission Factor <sup>7</sup>	N <sub>2</sub> O Emission Factor <sup>7</sup>
2	Tonne/m <sup>3</sup>	0.001863	0.000000037	0.000000035
Line			Methane <sup>8</sup>	Nitrous Oxide <sup>8</sup>
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 - January 2016", Table 400-2

(7) Ontario Ministry of Environment and Climate Change's "Guidelines for Quantification, Reporting and Verification for GHG Emissions - January 2016", Table 20-4

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

Witness: J. Murphy

**TABLE 3: 2017 FACILITY-RELATED EMISSIONS**

Line		Col. 1 Volumes <sup>1</sup> (10 <sup>3</sup> m <sup>3</sup> )	Col. 2 CO <sub>2</sub> Emissions <sup>2</sup> (Tonnes CO <sub>2</sub> )	Col. 3 CH <sub>4</sub> Emissions <sup>3</sup> (Tonnes CH <sub>4</sub> )	Col. 4 N <sub>2</sub> O Emissions <sup>4</sup> (Tonnes N <sub>2</sub> O)	Col. 5 CO <sub>2</sub> e Emissions <sup>5</sup> (Tonnes CO <sub>2</sub> e)
1.	Company Use - Buildings	1,505.9	2,805.5	0.1	0.1	2,823.0
2.	Company Use - Boilers	3,930.2	7,262.9	7.3	0.2	7,477.0
3.		5,436.2	10,068.4	7.4	0.2	10,300.1
4.	Company Use - Fleet	1,500.0	2,794.5	0.1	0.1	2,811.9
5.	Total Company Use	6,936.2	12,862.9	7.5	0.3	13,112.0
6.	Unaccounted For Gas (UAF)	98,279.0	183,093.8	3.6	3.4	184,236.5
7.	Compressor Fuel	17,191.8	31,769.4	32.1	0.8	32,706.2
8.	Total Facility-Related	122,407.0	227,726.1	43.2	4.6	230,054.7

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**

			Col. 1	Col. 2	Col. 3
			CO <sub>2</sub> Emission Factor <sup>6, 10</sup>	CH <sub>4</sub> Emission Factor <sup>7</sup>	N <sub>2</sub> O Emission Factor <sup>7</sup>
Line		Units			
1	Fleet, Buildings & Unaccounted For Volumes (UAF)	Tonne/m <sup>3</sup>	0.001863	0.000000037	0.000000035
2	Boilers & Compressor Fuel Volumes	Tonne/GJ	0.04903	0.00004958	0.000001305
3	Budget Heat Value <sup>8</sup>	GJ/10 <sup>3</sup> m <sup>3</sup>	37.69	37.69	37.69
Line				Methane <sup>9</sup>	Nitrous Oxide <sup>9</sup>
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 - January 2016", Table 400-2

(7) Ontario Ministry of Environment and Climate Change's "Guidelines for Quantification, Reporting and Verification for GHG Emissions - January 2016", Table 20-4

(8) Assumed Budget Heat Value = 37.69 GJ/10<sup>3</sup>m<sup>3</sup>. This value should be assumed as a placeholder. In calculating actual emissions, higher heating value will be used.

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

(10) CO<sub>2</sub> Emission Factor for 'Boilers & Compressor Fuel': Ontario Ministry of Environment and Climate Change's "Guidelines for Quantification, Reporting and Verification for GHG Emissions - January 2016", Table 20-3

Witness: J. Murphy

TABLE 5: 2017 SUMMARY OF CUSTOMER-RELATED AND FACILITY-RELATED FORECAST GHG EMISSIONS

<u>Line</u>	<u>Description</u>	<u>2017 Forecast</u>
<u>Customer-Related GHG Emissions Forecast</u>		
1	Customer-related Forecast Volume ( $10^3 \text{ m}^3$ )	11,152,950
2	ON.400 Emission Conversion Factor (tonnes $\text{CO}_2\text{e}/\text{m}^3$ )	0.001875
3	<b>Customer-Related Emissions (tonnes <math>\text{CO}_2\text{e}</math>)</b>	<b>20,907,621</b>
<u>Facility-Related GHG Emissions Forecast</u>		
4	Facility-related Forecast Volume ( $10^3 \text{ m}^3$ )	122,407
5	ON.20 Emission Conversion Factor (tonnes $\text{CO}_2\text{e}/\text{m}^3$ )	0.001902
6	<b>Facility-Related Emissions (tonnes <math>\text{CO}_2\text{e}</math>)</b>	<b>230,055</b>
<u>Total Compliance Obligation</u>		
7	<b>Total Compliance Obligation (tonnes <math>\text{CO}_2\text{e}</math>)</b>	<b>21,137,676</b>

Witness: J. Murphy

ANNUAL CARBON PRICE FORECASTS

1. Enbridge recognizes that there are numerous inputs and factors that go into the pricing of emission unit compliance options. As the market develops, Enbridge will continue to develop its ability to forecast compliance option prices. This application addresses only the forecast pricing for 2017 compliance options.

2. In the Board's Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities (the "Framework"), 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. The annual weighted average cost of compliance options is calculated by  
i) determining the number of emission units or equivalent units required,  
ii) identifying the price of each compliance option, iii) multiplying the compliance option price by quantity of each compliance option and iv) summing the resultant in iii) and dividing by total quantity of compliance obligations.

[REDACTED]

5. In Appendix A, Exhibit 3 of the Framework, the Board identifies that the price of allowances available at auctions, through bilateral agreements and over-the-counter transactions should be priced using either the annual forecast or the Board's 10-year carbon price forecast.

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

6. At the time of this filing, the Board's 10-year filing was not available.

7. In Appendix A, Exhibit 2 of the Framework, the Board states that:

The applicant must include: The forecast, which will be set using the average of the Intercontinental Exchange ("ICE") daily settlement prices of a California Carbon Allowance for each day of the forecast period for each month of the forecast year. The forecast period shall be 21 business days and should be as close as possible to the forecast year.

[REDACTED]

[REDACTED]

#### ICE Forecast Price

10. In response to the Board's direction, Enbridge has calculated a carbon forecast price using the ICE settlement prices.

11. Enbridge has obtained daily settlement prices from October 2 to October 31, 2016 for delivery in each month of 2017. The resulting price is \$13.04 USD or \$16.90 CAD. This currency conversion assumes a USD/CAD exchange rate of 1.2959 as submitted in Enbridge's 2017 Rate Adjustment case<sup>1</sup>.

---

<sup>1</sup> The exchange rate of 1.2959 was used in Enbridge's 2017 Rate Adjustment case for gas supply purposes. Refer to EB-2016-0215, Exhibit D1, Tab 2, Schedule 10.

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



12. Refer to Table 1 for derivation of the ICE forecast price.

Table 1: ICE Price Forecasting Method

Trade Date	Delivery Date											
	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
10/31/16	12.99	13.02	13.04	13.07	13.09	13.12	13.14	13.16	13.19	13.21	13.24	13.26
10/28/16	12.99	13.02	13.04	13.07	13.09	13.12	13.14	13.16	13.19	13.21	13.24	13.26
10/27/16	12.98	13.01	13.03	13.06	13.08	13.11	13.13	13.15	13.18	13.20	13.23	13.25
10/26/16	12.98	13.01	13.03	13.06	13.08	13.11	13.13	13.15	13.18	13.20	13.23	13.25
10/25/16	12.98	13.01	13.03	13.06	13.08	13.11	13.13	13.15	13.18	13.20	13.23	13.25
10/24/16	12.96	12.99	13.01	13.04	13.06	13.09	13.11	13.13	13.16	13.18	13.21	13.23
10/21/16	12.89	12.92	12.94	12.97	12.99	13.02	13.04	13.06	13.09	13.11	13.14	13.16
10/20/16	12.88	12.91	12.93	12.95	12.98	13.00	13.02	13.05	13.07	13.09	13.12	13.14
10/19/16	12.87	12.90	12.92	12.94	12.97	12.99	13.01	13.04	13.06	13.08	13.11	13.13
10/18/16	12.89	12.92	12.94	12.96	12.99	13.01	13.03	13.06	13.08	13.10	13.13	13.15
10/17/16	12.86	12.89	12.91	12.93	12.96	12.98	13.00	13.03	13.05	13.07	13.10	13.12
10/14/16	12.86	12.89	12.91	12.93	12.96	12.98	13.00	13.03	13.05	13.07	13.10	13.12
10/13/16	12.88	12.91	12.93	12.96	12.98	13.01	13.03	13.05	13.08	13.10	13.13	13.15
10/12/16	12.88	12.91	12.93	12.96	12.98	13.01	13.03	13.05	13.08	13.10	13.13	13.15
10/11/16	12.88	12.91	12.93	12.96	12.98	13.01	13.03	13.05	13.08	13.10	13.13	13.15
10/10/16	12.87	12.90	12.92	12.95	12.97	13.00	13.02	13.04	13.07	13.09	13.12	13.14
10/7/16	12.86	12.89	12.91	12.94	12.96	12.99	13.01	13.03	13.06	13.08	13.11	13.13
10/6/16	12.87	12.90	12.92	12.95	12.97	13.00	13.02	13.04	13.07	13.09	13.12	13.14
10/5/16	12.89	12.92	12.94	12.97	12.99	13.02	13.04	13.06	13.09	13.11	13.14	13.16
10/4/16	12.89	12.92	12.94	12.97	12.99	13.02	13.04	13.06	13.09	13.11	13.14	13.16
10/3/16	12.91	12.94	12.96	12.99	13.01	13.04	13.06	13.08	13.11	13.13	13.16	13.18

Sum: 3129.49

Data Points: 240

Average Price (USD): \$ 13.04

Exchange Rate (USD/CAD)<sup>1</sup>: 1.2959

Allowance Price (CAD) \$ 16.90

### Weighted Average Cost of Compliance Price

13. As outlined in Exhibit C, Tab 1, Schedule 1, Enbridge has retained Alpha Inception LLC ("AI") for the development of its procurement strategy. AI has provided a Carbon Market Report and a Carbon Strategy Report, which can be found in Appendix A and B to Exhibit C, Tab 1, Schedule 1.

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

14. In the Carbon Strategy Report, AI has provided several price forecasts for a variety of risk-based scenarios which focus on linkage with the Western Climate Initiative (“WCI”) Cap and Trade market partners, California and Quebec, as well as the outcome of the California Cap and Trade program post 2020. The scenarios are further outlined in Exhibit C, Tab 1, Schedule 1.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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

[REDACTED]

[REDACTED]

Auction Reserve Price

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

20. The auction reserve price in California is determined in accordance with California Code of Regulations Title 17, §95911, subsection (c)(3) *California Cap On Greenhouse Gas Emissions and Market-Based Compliance Mechanisms*, which states:

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

"The Auction Reserve Price in U.S. dollars shall be the U.S. dollar Auction Reserve Price for the previous calendar year increased by 5 percent plus the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for All Urban Consumers."

21. The auction reserve price in Quebec is determined using the same methodology as California, as per Section 49 of the Quebec's *"Regulation respecting a cap-and-trade system for greenhouse gas emission allowances"*.
22. As of the last WCI auction, which was held in August 2016, the WCI auction reserve price was \$12.73 USD or \$16.45 CAD<sup>3</sup>. This price is based on the California auction reserve price, which was the higher of California and Quebec.
23. Based on the 2016 California auction reserve price above, Enbridge has forecasted the 2017 WCI auction reserve price to be \$17.70. This price is based on a U.S. Consumer Price Index of 2.3%, and an exchange rate of 1.2959<sup>4</sup>.
24. Refer to Table 3 for derivation of the Ontario auction reserve forecast price.

---

<sup>3</sup> August 2016 price in CAD is based on exchange rate of 1.2922 as posted by the California Air Resources Board.

<sup>4</sup> As filed in to EB-2016-0215, Exhibit D1, Tab 2, Schedule 10.

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

Table 3: Ontario Auction Reserve Price Forecasting Method

Year	2016 Actual Auction Reserve Price	CPI Percent Change <sup>1</sup>	USD/CAD Exchange Rate <sup>2</sup>	2017 Forecast Auction Reserve Price (USD)	2017 Forecast Auction Reserve Price (CAD)
California	\$ 12.73	2.30	1.2959	\$ 13.66	\$ 17.70
Quebec	\$ 12.82	1.70	N/A	N/A	\$ 13.68

<b>Forecasted Ontario Auction Reserve Price (2017)<sup>3</sup></b>	<b>\$ 17.70</b>
--	-----------------

Notes:

- (1) Forecasted US and Quebec Consensus Consumer Price Index
- (2) US exchange rate from EB-2015-0215, Exhibit D1, Tab 2, Schedule 10
- (3) Ontario floor price is the higher of Quebec or California

### Discussion on Appropriate Price for Rate Setting

[REDACTED]

[REDACTED]

[REDACTED]

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

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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

[REDACTED]

[REDACTED]

29. 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 in two ways – (i) using the auction reserve price forecast of \$17.70 CAD per allowance; and (ii) using the ICE price forecast of \$16.90 CAD per allowance.

[REDACTED]

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

## OVERVIEW OF COMPLIANCE PLAN

1. In April 2015, the Ontario government announced that it would be implementing a Cap and Trade system as part of its climate change strategy targeted to achieve emission reductions from 1990 levels of 18% by 2020 and 80% emission reductions by 2050.
2. On May 18, 2016, the government received Royal Assent on its Climate Change Mitigation and Clean Economy Act (the “Act”), followed by approval of *Ontario Regulation 144/16, The Cap and Trade Program* (the “Regulation”) on May 19, 2016.
3. Board Staff issued a Cap and Trade discussion paper on May 25, 2016 to address a broad range of topics. On July 28, 2016, the Board issued an early determination on billing issues, including the design of charges to recover Cap and Trade costs and the communication of those costs on customers’ bills in response to requests from the Utilities for business readiness purposes. In particular, the Board issued decisions around cost allocation, bill presentment and communications objectives.
4. On the basis of the guidance received, Enbridge was able to start development work towards an IT billing system that is responsive to cost allocation and bill presentment requirements. Although Enbridge did not advocate for the route taken in the interim guidance to fold Cap and Trade costs into the delivery charge line item on customer bills, it respected the guidance and proceeded accordingly.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

5. Before the interim guidance Enbridge had started high level communications with its customers about Cap and Trade, and continued that process with outreach to large customers and smaller business customers – those that would not reach the threshold as a large final emitter nor be a candidate for voluntary opt-in status – as well as its residential customers. Those communications were shared with the Board prior to distribution for information purposes.
6. Upon receiving the Final Cap and Trade Framework (EB-2016-0363) on September 26, 2016, Enbridge set to work developing its Compliance Plan. Enbridge's 2017 Compliance Plan is a starting point upon which to build over the coming years and compliance periods. Given the Ontario carbon market is nascent and the Company is on the steep part of the learning curve, Enbridge has focused on creating a prudent one-year procurement plan coupled with strong governance processes.
7. During the development of its 2017 Compliance Plan, the Company sought the assistance of a recognized third-party carbon market expert. Enbridge vetted proposals from several consultants with experience in various carbon markets in North America and Europe. In August 2016 Alpha Inception LLC ("AI"), was retained by Enbridge<sup>1</sup>.
8. AI produced two reports which have been filed as appendices to this Exhibit. Appendix A, the Carbon Market Report, is a comprehensive overview of the Ontario Cap and Trade Market, discussing basic program facts and defining the compliance

---

<sup>1</sup> AI's credentials and experience are outlined in Exhibit C, Tab 1, Schedule 1 Appendix B, page 4.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



instruments available to Enbridge as a capped participant.<sup>2</sup> [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

9. The Compliance Plan described in the following sections was developed by Enbridge based on the recommendations from AI. AI's recommendations are described at length in Appendix B, while specific passages from Appendix A and Appendix B are referenced throughout this Exhibit C, Tab 1, Schedule 1 and Exhibit C, Tab 2, Schedule 1 where appropriate.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] Further, Enbridge has considered the Board's Guiding Principles, as outlined in Section 3 of the Framework, and believes that the preferred strategy discussed in this exhibit best meets those guidelines. Discussion of how the Guiding Principles have been addressed is further articulated in Exhibit C, Tab 2, Schedule 1. [REDACTED]  
[REDACTED]  
[REDACTED]

---

<sup>2</sup> "Capped participant" refers to both mandatory and voluntary participants, as outlined in the Cap and Trade regulation.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[TABLE DELETED]

[TABLE DELETED]

[illegible]

\_\_\_\_\_

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

Table 3: [REDACTED]

*[TABLE DELETED]*

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

14. Furthermore, other than the Green Investment Fund (“GIF”) whole home energy efficiency retrofit program, there are no incremental customer or facility abatement activities in Enbridge’s 2017 Compliance Plan. Enbridge anticipates abatement activities will feature more prominently in future Compliance Plans. Discussion on abatement activities is outlined in Exhibit C, Tab 2, Schedule 1, Exhibit C, Tab 3, Schedule 4, Exhibit C, Tab 3, Schedule 5, and Exhibit C, Tab 6, Schedule 1.

[REDACTED]

Governance and Accountability

16. Enbridge recognizes the nascent nature of Ontario’s Cap and Trade market. To ensure proper governance and guidance in the development and implementation of

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Enbridge's Cap and Trade program, the Company has assembled a team of employees to form the Carbon Procurement Governance Group ("CPGG").

17. The CPGG will consist of non-voting and voting members. By position only, the team's composition along with voting status is listed below:

- Vice President, Market Development and Public and Government Affairs (voting)
- Vice President, Finance, Gas Distribution and Power (voting)
- Vice President, Energy Supply and Customer Care (voting)
- Vice President, Gas Distribution Law (voting)
- Director, Regulatory Affairs, Financial Planning and Analysis (voting)
- Director, Energy Supply and Policy (non-voting)
- Director, Business Development (non-voting)
- Manager, Carbon Strategy (non-voting)
- Manager, Gas Supply and Strategy (non-voting)
- Manager, Gas Supply, GD Procurement & Reporting (non-voting)
- Gas Supply Regulatory Specialist (non-voting)
- Gas Supply Optimization Specialist (non-voting)
- Business Readiness Specialist, Carbon Strategy (non-voting)
- Senior Environmental Advisor, Carbon Strategy (non-voting)

18. Subject to organizational changes, the membership of CPGG may change. The Board will be provided with updates on team membership during the Company's annual filing.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

19. CPGG team membership encompasses individuals from varied groups within Enbridge. The team has representation from Market Development, Finance, Energy Supply, Legal, Carbon Strategy and Regulatory Affairs.
20. Three members from each group, voting and non-voting, are required to establish quorum. Meetings will not be conducted without quorum.
21. The group's primary responsibility will be to ensure the successful and cost-effective implementation of Enbridge's Cap and Trade program, inclusive of its Compliance Plan.
22. In 2017, the team's primary mandates will include: development and maintenance of carbon procurement procedures and policies; implementation of Enbridge's carbon procurement strategy; execution of procedures and policies and ensuring policies are suitable and operational. [REDACTED]  
[REDACTED]  
[REDACTED]
23. The CPGG will also use these meetings as an opportunity to review and discuss all relevant carbon policies and market developments. This will ensure that the team is current on all carbon-related information, including regulatory activity, lending itself to the implementation of a flexible Compliance Plan as detailed in the Guiding Principles.
24. [REDACTED]  
[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED] Additional meetings may be scheduled to review the annual Compliance Plan submission to the Board in August. Meetings will follow a set agenda and be documented.

25. Employees on the CPGG team will be privy to confidential information. To ensure all CPGG members are aware of the confidential material exchanged at these meetings, all members will be required to confirm their obligation to treat the auction and market confidential information with the upmost sensitivity.
26. Enbridge will apply the Plan-Do-Check-Act/Review ("PDCA") model for the implementation and review of its Compliance Plan.

#### Plan

27. The 'Planning' stage will consist of the non-voting members identifying and detailing multiple options to achieving Enbridge's compliance obligations.
28. The non-voting members of the CPGG will rely primarily on the following input in the development of their annual strategies:
- Natural gas forecast and actual volumes;
  - Demand Side Management ("DSM") volumes;
  - Natural gas reductions associated with customer-related abatement projects;

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

- Natural gas volume reduction associated with facility-related abatement projects; and,
- Carbon market intelligence, including OTC pricing data from ICE.

29. Annually, the non-voting members will recommend a strategy to the voting members. A risk assessment of each strategy will be completed and outlined to the voting members. The CPGG will approve an annual strategy, which will be revisited, revised as necessary and approved [REDACTED]  
[REDACTED]

30. The voting members will review and discuss the strategy with the non-voting members. Assuming the strategy is acceptable, voting members of the CPGG will provide their approval.

31. All approvals will be documented by email. These emails will be retained in a central repository.

32. In addition to the approval emails, this central repository will also include meeting minutes for the purposes of auditability.

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

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



Do

[REDACTED]  
[REDACTED]  
[REDACTED]

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

[REDACTED]  
[REDACTED]

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

[REDACTED]  
[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

Check

42. Non-voting members will compile and review the past month's carbon procurement activities, if any, and provide notification to the CPGG. Actual GHG emissions versus forecast GHG emissions will be collected and compared in order to identify if Compliance Plan updates are required.

[REDACTED]

44. All carbon-related market developments will be summarized in the form of a market report. This market report will be distributed to all CPGG members on a monthly basis and prior to any meeting. [REDACTED]

[REDACTED]

45. To ensure a cost effective strategy, Enbridge will maintain key focus on the development of offsets and its market as well as any regulatory or legislative changes. Offset developments and information regarding past projects will be summarized.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

46. As identified in Exhibit C, Tab 3, Schedule 1, Compliance Plan performance metrics will be calculated. These metrics will identify the cost-effectiveness, flexibility and efficacy of the compliance strategy. A full summary of the Compliance Plan's forecast versus actuals and other key information will be provided in the annual monitoring report. A discussion of these results will also be provided.

Review/Act

47. Regular meetings will be scheduled with the voting and non-voting CPGG members.
48. The data compiled and performance metrics calculated as identified in the 'Check' phase, and which are consistent with what Enbridge has proposed to provide in its annual monitoring report, will be reviewed and discussed with the team. The market report will be discussed to ensure that all members remain current on carbon-related issues.
49. Future carbon procurement activities will be reviewed against the above mentioned data. The members will also reflect on the approved annual compliance strategy. If necessary, Compliance Plan adjustments will be made and approved.
50. Future transactions will be discussed at these meetings and approved via email.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Carbon Procurement Procedures and Policies

51. The Cap and Trade program at Enbridge continues to evolve. Enbridge recognizes that this program impacts many groups within the Company.
52. A mandate of the CPGG is to ensure the development of sufficient and appropriate procedures and policies for the procurement of Enbridge's carbon compliance options. The Cap and Trade activities largely impact the Finance, Taxation, Regulatory and Regulatory Accounting groups.
53. To ensure that Enbridge is compliant with current internal processes and practices, the Company has identified key financial and regulatory processes, which will be impacted by the implementation of the Cap and Trade Program.
54. Flow charts are being developed for the budgeting of the carbon allowance as well as accounting for the purchases.
55. Enbridge also recognizes that if it plans to participate in a government auction, there are certain activities that must be completed to enable auction participation. To ensure that Enbridge has the ability to participate in any auction, processes will be developed to ensure that CITSS documentation is maintained and current. The table below outlines Enbridge's understanding of the requirements to be 'auction-ready'.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Table 4: 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	-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

56. As identified in Table 4, Enbridge must submit its financial assurance at least 12 days prior to the auction. Enbridge must request its financial assurance from its parent, Enbridge Inc. A proposed amendment to the Regulation was posted to the Environmental Registry on November 4, 2016. This amendment will permit a Participant to communicate with its parent regarding auction participation for the purposes of obtaining financial assurance without fear of being in contravention of section 32 of the *Climate Change Act*. Enbridge will work with Enbridge Inc.'s Treasury department to develop the proper protocols for the issuance of financial assurance.

#### Resources and Capabilities

57. Business readiness for the Cap and Trade program has been a top priority for Enbridge since early 2016. To that end, the Company has noted the various key

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

elements necessary for successful implementation of the Cap and Trade program starting January 1, 2017. Those elements include:

- Addressing incremental GHG reporting activities necessary to document the additional customer-related emissions starting in 2017;
- Familiarizing resources with the Cap and Trade Regulation as well as with relevant market tools, information sources, and key stakeholders;
- Completion of CITSS application;
- Ensuring appropriate trading personnel are Cap and Trade ready;
- Development and deployment of billing programs to collect customers' Customer-related and Facility-related obligations associated with the Cap and Trade program; and,
- Preparation of internal reporting requirements.

58. Enbridge has been attending and speaking at numerous conferences and events to learn and hear information about Cap and Trade policy and market development. For example, Enbridge attended the joint International Emissions Trading Association ("IETA")/CaliforniaCarbon.info/Ontario Chamber of Commerce's two-day Cap and Trade conference in October 2016. This provided significant access to carbon market professionals and insights on new compliance instruments. Enbridge has also been active on the Ontario Energy Association's ("OEA") Environmental Committee, Ontario Sustainable Energy Association's Cap and Trade Committee, IETA's Canadian and Ontario Committees and on the Canadian Energy Partnership for Environmental Innovation ("CEPEI"). Enbridge has and will continue to establish relationships with policy makers and market makers including carbon allowance and offset brokers, and offset developers.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

59. Enbridge has an experienced and qualified employee who is responsible for GHG reporting. This employee is a Professional Engineer, with a degree in environmental engineering, and the individual has also completed a post-graduate certificate in Climate Change Policy and Practice. The individual is also working towards achieving certification as a GHG quantifier through CSA. The individual has been indirectly involved in GHG reporting for Enbridge since 2007, with direct responsibility for the GHG inventory since 2011. As such, the individual is able to adeptly review and decode GHG reporting regulations, a skill which has been and will continue to be valuable to Enbridge and its ratepayers.
60. To ensure readiness for participation in primary and secondary Cap and Trade markets, Enbridge has successfully completed both phases of the CITSS registration process, submitting Phase 2 of the application, the company or “Participant” registration documents, on October 13, 2016.
61. As a result of the changes in *Ontario Regulation 143/16, Quantification, Reporting and Verification of Greenhouse Gas Emissions*, the Company is in the process of discussing a submission for the adjustment of its holding limits with the Ministry of the Environment and Climate Change (“MOECC”) pursuant to Section 41 of the Regulation.
62. Enbridge will leverage its vast expertise in the natural gas market to ensure the successful implementation of the Company’s Cap and Trade Compliance Plan. The Company’s gas supply team employs traders well versed in the methods and platforms used in commodity markets, and those methods and platforms have direct applicability to the market for Cap and Trade allowances. For example, the Board

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

references the Intercontinental Exchange (“ICE”) as a “large, liquid and public market exchange” in its Framework. Members of Enbridge’s gas supply team frequently transact on ICE and understand the nuances of the platform. Enbridge will also ensure it attends and participates in the government led auction practice sessions currently scheduled for December 6, 2016. Should additional training be required, Enbridge will ensure it does what is necessary to be ready.

63. Enbridge recognizes that as the market develops, so too might its resource requirements. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Keeping expertise in-house has long-term benefits to the ratepayers. As the market knowledge of Enbridge’s internal personnel increases, the Company and its ratepayers benefit from the continuous improvement in the execution of its Compliance Plan. It is abundantly clear though, that the carbon market is not a “perfect market” and does requires substantial attention to a number of different inputs to ensure an appropriate and optimal Compliance Plan is developed and implemented.

#### Assessment of Creditworthiness of Counter-Parties and Financial Intermediaries

64. Upon signals that the Ontario Cap and Trade market is formally linked with California and Québec, compliance options will become more diverse. With that diversity, there will be additional complexity. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



STRICTLY CONFIDENTIAL

---

**ENBRIDGE GAS DISTRIBUTION INC. (EGD)**

---

CARBON MARKET REPORT

---

ALPHA INCEPTION LLC

*November 10, 2016*

STRICTLY CONFIDENTIAL

## ALPHA INCEPTION LLC

### ALPHA INCEPTION DISCLAIMER

This report is provided solely for informational purposes and should not be construed as advice. Unless expressly stated herein, this report is not to be construed as an offer to buy or sell, or a solicitation of an offer to buy or sell any financial instrument or to enter into any transaction. Alpha Inception LLC acts as a consultant for other clients in the WCI Cap and Trade program and does not have the authority to transact on behalf of or bind any clients and is not an agent for any clients.

Alpha Inception LLC makes no warranty as to the accuracy, currency, completeness or suitability of this information nor accepts any responsibility or liability for errors, omissions or misstatements, negligent or otherwise, and with respect to any act or omission by any person in reliance on the whole or any part of this communication.

Past results are not necessarily indicative of future results. Futures, options and derivatives products are not suitable for all investors and trading in these instruments involves substantial risk of loss. Opinions, historical price(s) or value(s) are as of the date and, if applicable, time indicated. Alpha Inception LLC and any of its employees, officers, directors, affiliates, clients and agents may have interests in securities, futures, derivatives or options referred to in this communication, including directorships or performance of investment services. In addition, they may buy or sell those financial products as principal or agent and as such may affect transactions, which are not consistent with any recommendations in this communication.

This report has been prepared by Alpha Inception LLC, is confidential and intended for specific recipient(s) only. Any use, copying or dissemination of the information, without the express written consent of Alpha Inception LLC, is strictly prohibited and legal proceedings may be commenced against you.

## Contents

Ontario Carbon Market Report .....	4
ONTARIO CLIMATE GOALS .....	4
CLIMATE CHANGE MITIGATION AND LOW-CARBON ECONOMY ACT, 2016 .....	4
ONTARIO CAP AND TRADE .....	5
COMPLIANCE INSTRUMENTS UNDER ONTARIO CAP AND TRADE .....	6
ALLOWANCES .....	6
OFFSETS .....	11
EARLY REDUCTION CREDITS .....	14
APPLICATION OF HOLDING LIMITS .....	14
TIMELY SURRENDER OF COMPLIANCE INSTRUMENTS .....	15
SECONDARY MARKET TRADING AND WCI AUCTION RESULTS .....	16
EXCHANGE TRADING VIA INTERCONTINENTAL EXCHANGE .....	16
OVER-THE-COUNTER TRADING .....	19
OFFSET CREDITS – CONSIDERATIONS .....	21
OFFSET CREDITS - PRODUCTS .....	22
QUARTERLY ALLOWANCE AUCTIONS .....	23
GROWING PAINS, AUCTION VIOLATIONS, AND UNSOLD TONNES .....	23
HISTORICAL AUCTION RESULTS AND ANALYSIS .....	24
CALIFORNIA CAP AND TRADE .....	28
OVERVIEW .....	28
LEGAL UPDATE .....	28
LEGISLATIVE CONCERNS AND SB32 .....	29
RECENTLY PROPOSED CAP AND TRADE AMENDMENTS .....	30
COMPLEMENTARY GHG REDUCTION POLICIES .....	33
EPA CLEAN POWER PLAN .....	33
QUÉBEC CAP AND TRADE .....	35
MARKET OVERVIEW .....	35
LINKAGE WITH CALIFORNIA .....	35

# ALPHA INCEPTION LLC

SUPPLY AND DEMAND .....	35
FUNDAMENTAL SUPPLY & DEMAND OF CAP AND TRADE .....	35
.....	35
.....	38
.....	39
.....	44
APPENDIX .....	47
AUCTION TRAINING .....	47

Figure 1: ANNUAL CAPS ADJUSTED FOR ALLOWANCE PRICE CONTAINMENT RESERVE (“APCR”) .....	6
Figure 2: EXAMPLE AUCTION BIDS RANKED HIGH TO LOW AND SETTLEMENT PRICE .....	8
Figure 3: EXPECTED AUCTION RESERVE PRICES 2017-2020, USD AND CAD .....	9
Figure 4: COMPARISON OF OFFSET PROTOCOLS IN CALIFORNIA, QUÉBEC AND ONTARIO – ISSUED TONNES .....	13
Figure 5: CALCULATED HOLDING LIMITS NOT INCLUDING EXEMPTIONS IN ONTARIO AND WCI - TONNES .....	15
Figure 6: EXAMPLE WEBICE TRADING PLATFORM .....	16
Figure 7: CCA FUTURES AND OPTIONS OPEN-INTEREST IN TONNES .....	17
Figure 8: CCA FUTURES DAILY SETTLEMENT PRICE AND OPEN-INTEREST .....	18
Figure 9: .....	19
Figure 10: ‘CURRENT’ AUCTION RESULTS IN CALIFORNIA, QUÉBEC AND WCI .....	25
Figure 11: ‘FORWARD’ AUCTION RESULTS IN CALIFORNIA, QUÉBEC AND WCI .....	25
Figure 12: .....	36
Figure 13: .....	38
Figure 14: .....	40
Figure 15: .....	42
Figure 16: .....	44
Figure 17: .....	45
Figure 5: CALCULATED HOLDING LIMITS NOT INCLUDING EXEMPTIONS IN ONTARIO AND WCI - TONNES .....	51

## Ontario Carbon Market Report

Alpha Inception (AI) has structured this report to be comprehensive, including basic program facts, and recommends it be read in its entirety, even by those already familiar with Cap and Trade because it will also focus on recent and potential regulatory changes and initiatives, recent allowance auctions and secondary market activity. Lastly, it will address near-to-medium term supply and demand, which has been accompanied by an excel file to allow for basic scenario analysis.

The purpose of this report is to provide key observations, including descriptions of the various compliance instruments and market products, and analysis of the fundamentals of the program to assist with the formulation of risk management procedures and processes. Specifically, its purpose is to build internal staff and senior management understanding and to provide valuable commercial insight and information to assist in developing a carbon portfolio strategy. Separately, specific carbon portfolio recommendations will be provided in a subsequent report called the Carbon Strategy Report.

### ONTARIO CLIMATE GOALS

## CLIMATE CHANGE MITIGATION AND LOW-CARBON ECONOMY ACT, 2016

Canada recently signed the Paris Agreement, a broad-based international accord to combat climate change, on April 21, 2016 (“Earth Day”), complementing efforts taken in recent years by the province of Ontario to improve environmental awareness and reduce greenhouse gas emissions (GHG). The Green Energy Act of 2009 brought more clean energy to Ontario and helped to create more clean energy jobs. In 2014, Ontario completed an initiative to phase-out all coal-fired electricity generation and continues to pursue various aggressive renewables policies. On May 18<sup>th</sup>, 2016, the provincial government passed the Climate Change Mitigation and Low-carbon Economy Act, 2016, and one day later released Ontario’s Cap and Trade Regulations (“Ontario Cap and Trade”). The government expects that Ontario Cap and Trade will generate ~\$1.9 billion annually, which has been earmarked for further emissions reduction programs.

Ontario’s overarching climate goals have been set forth with the following specific target reductions:

- 15% below emissions levels in 1990 (2020 goal)
- 37% below emissions levels in 1990 (2030 goal)
- 80% below emissions levels in 1990 (2050 goal)

On June 8<sup>th</sup>, 2016, the provincial government released its Climate Change Action Plan. This sets forth specific actions and programs that will be used by the Ontario government to transition to a low-carbon economy and meet its GHG emissions reduction targets. Several of these actions are summarized below:

- Building energy efficiency through retrofits
- Developing a cleaner transportation system by promoting public transportation and railroad expansion
- Increasing bicycle transportation
- Incentives for switching from high-carbon to lower-carbon fuel in fleets (buses and freight)
- Low carbon fuel standards
- Electric vehicle incentives
- Establishing a Green Bank to assist homeowners and businesses finance energy-efficient technology investments
- Research and development of low-carbon technologies

Following a pattern set forth in California, Ontario Cap and Trade is a backstop mechanism that ensures emissions reduction targets are met while specific measures and programs pursued under the Climate Change Action Plan (the “Plan”) are complementary measures that provide the bulk of actual reductions. Cap and Trade revenues generated at auction are used to fund those complementary measures under the Plan – without those revenues, Ontario’s emissions reductions targets would be very difficult, and more expensive, to carry out.

## ONTARIO CAP AND TRADE

The Ontario Cap and Trade program begins on January 1<sup>st</sup>, 2017 and is a market-based approach to controlling emissions. It provides economic incentives for achieving reductions by imposing a cost on pollution. The Ministry of the Environment and Climate Change (MOECC) sets aggregate annual GHG emissions caps beginning in 2017 and declining over the life of the program. Approximately 80% of economy-wide emissions will be covered under Ontario Cap and Trade and entities with a compliance obligation will be required to retire or surrender at various intervals at least one compliance certificate or instrument for each metric tonne of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e) emitted over the period. Participants in the Ontario Cap and Trade market can buy, sell and trade compliance instruments with one another providing a mechanism for the most economic emissions reductions to occur. Compliance instruments that can be surrendered for compliance include: Allowances, Offsets, and Early Reduction Credits.

Ontario Cap and Trade applies to those entities whose annual emissions equal or exceed 25,000 tCO<sub>2</sub>e. However, there are other entities that may choose to participate in Ontario Cap and Trade. Here are descriptions of the three types of participants either required or allowed under the program:

1. ***Mandatory Participants*** – entities whose annual GHG emissions equal 25,000 tCO<sub>2</sub>e or greater. Ontario-based entities meeting the 25,000 tCO<sub>2</sub>e threshold are required by law to participate under Ontario Cap and Trade. Additionally, much lower thresholds have been designated to electricity importers and fuel suppliers, ensuring their mandatory participation. There are approximately 300 emitters (150 large emitters plus 12 fuel distributors represent most of emissions) that are expected to meet these criteria. Mandatory participants include the following:
  - Large Industrial Emitters
  - Electricity Importers (imports of 1 MWh or more, annually)
  - Natural Gas Distributors
  - Fuel Suppliers (sales of 200 litres or more, annually)

It should be noted that natural gas-fired electricity producers are excluded from the regulation, and purchasing allowances for the natural gas used by these facilities is the responsibility of the natural gas distributors.

2. ***Voluntary Participants*** – entities whose annual GHG emissions are greater than 10,000 tCO<sub>2</sub>e but less than 25,000 tCO<sub>2</sub>e may opt to participate. Voluntary participants will be subject to the same rules as mandatory participants. Voluntary participants may be incentivized through expected goodwill to the organization or by the potential economic benefit, should the organization apply for and receive free allocations, which will be discussed further under Compliance Instruments Under Ontario Cap and Trade.
3. ***Market Participants*** – These entities do not have a compliance obligation but desire to participate in the auctions or secondary market. These may include individuals, non-profit organizations, financial institutions and other organizations that may desire to participate for environmental or investment/trading purposes, including speculation.

[REDACTED]

[REDACTED]

[REDACTED]

Throughout 2017, Ontario Cap and Trade is only applicable to Ontario-based entities. The province of Québec implemented a Cap and Trade program in 2013, administered by the Québec Government (MDDELCC). The U.S. state of California launched a Cap and Trade program in 2012, administered by the California Air Resources Board (CARB). Under the Western Climate Initiative (WCI), the California and Québec programs were ‘linked’ together in 2014 forming a larger and multi-jurisdictional Cap and Trade program (“WCI Cap and Trade”). Ontario has stated its intent to link with California and Québec via the WCI Cap and Trade in 2018.

The Ontario, Québec and California programs are substantially similar, though key differences will be noted throughout this report. As Ontario’s program is roughly one-third the size of that of California, Ontario prices may be significantly influenced

by price and policy developments in California. In this report, AI has included a substantial amount of analysis on California's market, legal, and regulatory arenas because of the strong influence that it will have on Ontario in 2018 and possibly as early as 2017.

## COMPLIANCE INSTRUMENTS UNDER ONTARIO CAP AND TRADE

### ALLOWANCES

#### Overview:

An allowance is the authorization for a participant to emit one tCO<sub>2</sub>e in Ontario, whereas an offset demonstrates the reduction of one tCO<sub>2</sub>e elsewhere in the economy, even potentially outside of Ontario. Ontario has yet to publish formal regulations concerning offsets, though they have given some indications and offsets will be discussed further below.

The MOECC creates allowances, when aggregate annual GHG emissions caps or budgets are set beginning in 2017 and decline over the life of the program. The cap, expressed in tCO<sub>2</sub>e, is equivalent to the total volume of available allowances. As the cap declines each year, there are fewer allowances available over time and participants must reduce their emissions and/or purchase the limited number of allowances from the auctions or in the secondary market.

Additionally, each program removes a portion of the annual budgets for sale from an Allowance Price Containment Reserve (APCR or "Strategic Reserve"). The Strategic Reserves are intended to be a soft price ceiling if allowance prices rise considerably. Deducting the APCR allowances from the annual budgets produces an adjusted cap, which more accurately reflects available allowance supply under each jurisdiction. The table below shows a comparison of the emissions caps, adjusted for the APCR tonnes withdrawn, under Ontario Cap and Trade and WCI Cap and Trade during each year of the respective programs.

Figure 1: ANNUAL CAPS ADJUSTED FOR ALLOWANCE PRICE CONTAINMENT RESERVE ("APCR")

Million tCO <sub>2</sub> e	2013	2014	2015*	2016	2017	2018**	2019	2020
Ontario	N/A	N/A	N/A	N/A	135.2 Adjusted Cap	129.6	124.0	118.4
Québec	23.0 Adjusted Cap	23.0	62.7	60.7	58.6	54.8	52.9	50.9
California	161.2 Adjusted Cap	158.1	378.7	367.1	355.6	333.2	322.1	310.8
WCI Total	N/A	181.1 Aggregate Adjusted Cap	441.4	427.8	414.2	517.6	499.0	480.1

\*The Transportation fuels sector was not included in Québec and California until 2015

\*\*Assumes linkage in January 2018 and a WCI Cap and Trade including Ontario, Québec and California

Source: Alpha Inception and jurisdictional regulations for Ontario, Québec and California

#### Procuring Allowances:

Mandatory and voluntary opt-in participants in Ontario Cap and Trade have several options to procure allowances created by the MOECC. Allowances will be used for most compliance obligations to avoid severe penalties, with the balance made up from offsets and other credits. Other participants may also procure allowances based on commercial or environmental motives and, in some cases, expectations of becoming a future covered entity. Allowances can be procured through i) submitting

applications to the MOECC for free distributions, ii) quarterly auctions administered by the MOECC and iii) through strategic reserve sales, which operate like the quarterly allowance auctions.

### 1. *Allowances from Free Distribution*

Only those entities that are Mandatory participants or Voluntary Opt-in participants may apply for allowances distributed free of charge. Entities that expect to meet the criteria for Voluntary Opt-in by the end of the compliance year may also apply for free allowances. Any sectors can apply for free allowances except, specifically, the following: electricity generators/electricity importers, producer/suppliers of petroleum or fuel products, and distributors of natural gas. The deadline to submit applications for 2017 was on October 14, 2016. In future years, the deadline for the next compliance year is expected to be early fall. Free allocations are placed into receiving entities CITSS account each February. Free allocations of allowances are equivalent to allowances purchased in the auctions or on the secondary market and can be used for compliance, banked for future years and can also be bought or sold in the secondary market.

One key difference between Ontario Cap and Trade and California and Québec is that Ontario participants must apply for free distributions. In California and Québec, industrial emitters have been allocated transition assistance and certain industries have been identified as high-risk of emissions leakage, where a business or facility moves outside of the jurisdiction to avoid paying for compliance but does not reduce any emissions, and are given additional free allowances or their transitional assistance factors do not decline as sharply as others. In California, most covered entities outside of the merchant power generation and fuel distribution sectors (with some small exceptions) receive at least some portion of free allowances. Additionally, in California, certain entities are either required by regulation or given the option to consign free allowances to auction. The requirement to consign or sell allowances at auction, in California, applies to Investor Owned Electric Utilities (“IOUs”) and Natural Gas Distributors, though IOUs must consign all allowances to auction and Natural Gas Distributors have an increasing requirement to consign each year. Publicly Owned Electric Utilities (“POUs”) are given free allowances and have the option to sell these at auction or transfer them to a compliance account. Over time, as allocations and allowance budgets are reduced, entities will need to supplement these free allocations with additional purchases of compliance instruments in the auctions or in the secondary market. While EGD cannot apply for free distributions, many of its customers that meet either the Mandatory Participant requirements or Voluntary Opt-in criteria will apply for free distributions. As those who are EGD customers become Voluntary Opt-in participants and apply for and receive free allowances, EGD compliance obligations will decrease over time.

It is expected that between 20-35 million allowances will be allocated freely in 2017, with the amount increasing in 2018 with additional applications from those who missed the opportunity to apply in 2017. Over an extended timeframe, free distributions of allowances will decrease as Ontario reduces transitional assistance.

### 2. *Allowances Sold at Auction*

**Auction Format:** MOECC will hold quarterly allowance auctions, which represent significant liquidity events in the market. All allowances from the annual budgets that are not freely distributed or allocated to the Strategic Reserve or APCR will be auctioned by the MOECC, and unsold allowances from previous budget years may also be sold at future auctions. The auction is a single round, sealed bid, and uniform price format. Auction participants submit all their desired bids, in lots of 1,000 allowances, during the 3-hour auction bidding window and are permitted to add, delete or revise their bids prior to the closing of the auction.

The Auction Administrator will rank qualified bids from all bidders from the highest to the lowest. Allowances will be awarded to bidders, beginning with the highest bid price and moving to successively lower bid prices, until the entire supply of allowances is exhausted or all qualified bids have been filled. Allowances at auction are awarded to the highest bidders first and to subsequent lower bidders until all the volume available has been awarded. The auction settlement price or Auction Clearing Price (“ACP”) is the price at which all the volume available has been awarded. All winning bidders pay the same price, the ACP, even when they may have submitted bids at higher prices. An example of auction clearing mechanism is provided below:



Figure 2: EXAMPLE AUCTION BIDS RANKED HIGH TO LOW AND SETTLEMENT PRICE

Bidder	Bid Price	Lots	Allowances	Cumulative Bid Allowances	Allowances Awarded at ACP
A	\$35.00	3,000	3,000,000	3,000,000	3,000,000
B	\$27.15	2,500	2,500,000	2,500,000	2,500,000
A	\$30.00	1,500	1,500,000	4,500,000	1,500,000
C	\$25.39	2,000	2,000,000	2,000,000	2,000,000
C	\$21.37	1,200	1,200,000	3,200,000	1,000,000
<i>Auction Clearing Price ("ACP") = \$21.37</i>					
<i>Assumes 10,000,000 allowances offered</i>					
A	\$20.95	4,000	4,000,000	8,500,000	0
B	\$18.25	5,025	5,025,000	7,525,000	0

Source: Alpha Inception

Under the example provided above, the auction offered 10,000,000 tonnes and the settlement price was \$21.37 per tonne. Bids are ranked from highest to lowest and allowances are awarded to bidders, beginning with the highest bid price and moving to successively lower bid prices until the entire supply is exhausted. The price where bids equal supply is known as the Auction Clearing Price ("ACP"). All winning bidders pay the ACP for all allowances won in the auction. Bids below the ACP would not be awarded. In the example, winning bids would be fulfilled as follows:

**Bidder A** won a total of 4,500,000 allowances at \$21.37 per allowance

**Bidder B** won a total of 2,500,000 allowances at \$21.37 per allowance

**Bidder C** won a total of 3,000,000 allowances at \$21.37 per allowance

Forward Vintage Auctions: Each auction will consist of two simultaneous auctions for different vintages of allowances. A Class 1 or "Current Auction" is for allowances from the current compliance year vintage. A Class 2 or "Advance Auction" is for allowances with a vintage of the current year plus 3 years. Allowances in the Class 2 Auction represent 10% of the forward vintage budget year and are divided evenly over the auctions held in the year. Class 1 Auctions held in 2017 are for vintage 2017 allowances and Class 2 Auctions held in 2017 are for vintage 2020 allowances.

Bidders submit bids simultaneously to the Class 1 and Class 2 auctions, meaning that the outcome of one auction cannot influence bidder behaviour in the other. Auction format, including participation requirements, bid submission, settlement mechanism, purchase limits, and reserve prices are the same for both auctions but the ACP will be settled separately.

Auction Reserve Price: Auctions held each year will have a minimum price or Auction Reserve Price ("ARP") that will apply to both Class 1 and Class 2 auctions, with the same ARP applying to all auctions held in the calendar year. No bids will be accepted at prices that are lower than the ARP, effectively setting a minimum ACP. If there are fewer bids than volume available in any auction, bidders would pay the ARP for any allowances awarded.

The annual ARP for auctions held in Ontario in 2017 and forward will be set by the WCI Cap and Trade, regardless of whether Ontario ultimately links with California and Québec. The ARP is announced each December prior to the calendar year in which it will take effect, though, where the ARP is in USD it shall be converted into CAD using the Bank of Canada exchange rate

the day prior to the auction. It is calculated as the higher of California and Québec's respective ARP for the previous year increased by 5% plus the rate of inflation, which could be positive or negative. The ARP is converted into Canadian dollars ("CAD") using an exchange rate published the day prior to an auction.

**National Price on Carbon:** On October 3<sup>rd</sup>, 2016, the federal government announced that all Canadian provinces must adopt a carbon pricing scheme by 2018 or the government will impose a price for them. Specifically, provinces can adopt either a carbon tax or a carbon cap and trade program.

**Minimum Carbon Price (\$CAD):**

2018 - \$10  
2019 - \$20  
2020 - \$30  
2021 - \$40  
2022 - \$50

**Provinces with Existing Carbon Prices:**

AB – Carbon Tax of \$20 per tonne in 2017, rising to \$30 in 2018  
BC – Carbon Tax of \$30 per tonne  
QC – Cap and Trade with floor price of \$17.69 CAD in 2017  
ON - Cap and Trade with floor price of \$17.69 CAD in 2017

AI believes that this minimum price will apply to cap and trade by the time the legislation is passed. The objective of competitive equivalency between the provinces cannot work unless the minimum price applies to both taxes and cap and trade programs in equal measure. One of the implications of the national policy could be that Ontario and Quebec would be required to increase the ARP to meet the national minimum.

**Projected Auction Reserve Prices:**

The 2016 WCI ARP is \$12.73 U.S. Dollars ("USD") and recent historical data for Consumer Price Index in the U.S. ("US CPI") is on target to be between 0.7% and 1.0%, making the 2017 ARP between \$13.44-\$13.50 USD. Assuming 1% US CPI in 2017 and 2% thereafter it is reasonable to expect that the ARP will follow price increases approximated below in Figure 3

Figure 3: EXPECTED AUCTION RESERVE PRICES 2017-2020, USD AND CAD

	2017	2018	2019	2020	2021	2022
CALI ARP (USD)	\$13.50 USD	\$14.38	\$15.31	\$16.31	\$17.37	\$18.50
ON ARP (CAD) @ 1.31 CAD/USD	\$17.69 CAD	\$18.83	\$20.06	\$21.36	\$22.75	\$24.23

Source: Alpha Inception, September 2016 – assumes that program is extended

**Participation Requirements:** Those entities desiring to participate in the quarterly auctions must open a Compliance Instrument Tracking System Service Account ("CITSS") and register with the auction administrator. Participants must apply for each auction that they intend to submit bids and ensure that updated disclosures and corporate information has been provided. Additionally, auction participants must submit a financial bid assurance in the amount of the maximum value of the desired bids. The following steps must be taken to participate in an auction:

- Open a CITSS account

- Apply to participate in each quarterly auction
- Provide a financial bid assurance equal to the maximum value of bids intended to be submitted in both Class 1 and Class 2 auctions
- Update necessary disclosures and corporate information
- Abide by all auction participation rules regarding disclosures, purchase limits, holding limits and bid assurance

Auction participants must be diligent in self-monitoring to ensure that there are no violations of registration requirements, bid deposits, purchase limits, holding limits and inappropriate disclosure of auction participation and bidding strategies. More detailed information on auction participation will be provided in Appendix A – Auction Training Material.

*Unsold Allowances at Auction:* If an auction is undersubscribed and not all allowances offered for sale are sold in the quarterly auctions, the result will be a pool of unsold allowances. Understanding what happens to these unsold allowances in the various jurisdiction could be very important in projecting short-term as well as long-term supply and demand.

In Ontario, all allowances offered for sale at auction are essentially provincially-owned. Allowances that remain unsold in the Class 2 or forward-vintage auctions *may* be re-offered for sale in the Class 1 auction but only when those allowances become the current year's vintage. Allowances that are unsold in the Class 1 or current-vintage auctions *may* be re-offered by the MOECC but only after two auctions have successfully cleared above the ARP or reserve price. In either case, the MOECC reserves the discretion to offer previously unsold allowances at subsequent auctions but is not required to do so. Québec's treatment of unsold allowances is like Ontario's treatment of unsold allowances.

California, on the other hand, differs from Ontario and Québec. Firstly, California auctions consist of not only state-owned allowances but also allowances that are owned and have been consigned to auction by various electric and natural gas utilities. Secondly, the unsold consigned allowances are automatically *rolled* to the next auction, thus increasing the available supply. Unsold state-owned allowances are treated similarly to those in Ontario and Québec except that California is *obliged* to re-offer unsold allowances either in their vintage year, in the case of unsold forward-vintages, or after two consecutive auctions have cleared above the reserve price, in the case of current-vintages. Thirdly, California recently proposed regulatory amendments that would move state-owned allowances that remain unsold for 24-months into the APCR, which only becomes available at significantly higher prices.

### 3. *Allowances from Strategic Reserves Sales*

Like WCI Cap and Trade, Ontario creates a reserve pool of allowances to mitigate upward price spikes. This pool of Strategic Reserves or APCR, is populated at the beginning of the program from a carve-out from each of the annual allowance budgets equivalent to 5% or 26.7 million tonnes total through 2020. Strategic Reserve sales may be held quarterly, in addition to the allowance auctions. Only capped participants may purchase from the APCR.

Allowances in the reserve were split into three equal sized price tiers, set initially at 2016 price equivalents of \$47.88, \$53.86, and \$59.85, all in CAD. For 2017 and subsequent years, the price tiers shall increase by 5% + Ontario inflation each year. The reserve sale will be distributed on a first come, first served basis. Ontario makes allowances from the reserve available for sale six weeks after the completion of each quarterly allowance auction. Another interesting fact to note is that all allowances carved out and put into the APCR become universal vintage and are available for any compliance year. As such, allowances in the APCR are essentially equivalent to a 2017 vintage allowance, regardless of the actual budget year from where they have been taken.

[REDACTED]

## OFFSETS

An offset credit is like an allowance in that it can be retired to satisfy obligations under the Cap-and-Trade program. It is created through a verified reduction or absorption of one tCO<sub>2</sub>e elsewhere in the economy and through an approved methodology. It must demonstrate “additionality”, the concept that the CO<sub>2</sub> reductions would not have occurred without the payment for the offset and would not have occurred under a Business as Usual “BAU” scenario, this includes a restriction on ‘double-counting’ of emissions reductions that would have occurred as the result of another regulation or law.

As of the date of this report, Ontario has not formally released its regulations surrounding the use of offsets under Cap and Trade and it appears to have been significantly delayed. Offsets are not likely to have much of an impact, if any, in 2017, however, as will be discussed later in the Fundamental Supply & Demand of Cap and Trade, offsets may provide a significant value proposition in later years as Ontario offsets are developed. Should Ontario link with WCI, Ontario-based entities are expected to be able to purchase offsets from the WCI Cap and Trade, where the market for offsets is further along. The information provided below is a guideline only based on what is expected in Ontario.

Offsets Restrictions for Compliance: Under Ontario Cap and Trade and WCI Cap and Trade rules, the use of offset credits is limited to no more than 8% of a capped participant’s compliance obligation. The 8% can be a valuable cost reduction tool for entities that choose to optimize their portfolio of compliance instruments, as offsets generally are priced at a discount to allowances. The 8% permissible limit, however, cannot be carried forward into future compliance periods – in other words it is a “use it or lose it” opportunity. Though on the surface the 8% limit may seem inconsequential, in aggregate offsets are permissible for nearly 43 million tCO<sub>2</sub>e of compliance through 2020 under Ontario Cap and Trade.

Offset Invalidation Risk: It is not yet clear whether Ontario offsets would carry the risk of invalidation, where offsets, even once deposited into a holder compliance account, could be withdrawn if deemed to be fraudulent or in violation of various regulatory criteria. A key difference between the treatment of offsets in California and Québec is that in California invalidation risk, in most cases, lies with the offset buyer unless the offset contract is backed by a credit-worthy entity offering, at a premium, insurance against such invalidation risk (known as a “Golden California Carbon Offset” or “gCCO”). California’s uninsured offset credits come with either an 8-year or a 3-year invalidation period, after which the credits can no longer be invalidated. In Québec, no such buyer’s liability exists and instead the risk of invalidation is backed by the province’s Environmental Integrity Account (“EIA”). The EIA holds back a certain percentage of all offset credits issued and replaces illegitimate offset credits by withdrawing an equivalent amount from the EIA, essentially insuring all Québec-issued offsets.

Offset Protocols: Based on MOECC’s Request for Proposal on adaptation of offset protocols for the Ontario Cap and Trade, it is expected that offsets will be geographically restricted to Canada only. Should Ontario link with California and Québec, which allows for U.S. based offset projects, then those offset credits would become eligible for use in Ontario, though it would not be the MOECC that is issuing such credits, only the use thereof. Based on AI’s discussions, Ontario appears to be considering, at least initially, the following four offset protocols: Ozone Depleting Substances (“ODS”), Landfill Gas, Coalmine Methane (“CMM” or “MMC”), and Domestic Forestry. Given the intricacies of contracting and the varied risks embedded in the various offset protocols, certain considerations should be made when evaluating the value of offset credits, even where a seller-insured product is purchased. The invalidation risk does not exist in Québec due to the environmental integrity account – Ontario may follow this procedure to protect against invalidation. Brief descriptions of the likely protocols that may be accepted by Ontario, as the program is further developed, are provided below:

### 1. *Ozone Depleting Substances (“ODS”)*

This protocol refers to a large group of chemicals known to destroy the stratospheric ozone layer when released into the atmosphere. Projects would include the destruction of such chemicals, including refrigerants, blowing agents, solvents and fire suppressants. In addition to damaging the ozone layer, most ODS gases are very potent greenhouse gases and, thus, destroying 1 tonne of ODS creates many offset credits, with CFC-11 receiving 4,750x multiplier and CFC-12 a 10,900x multiplier.

One advantage of this protocol is that once a project has destroyed ODS no additional project monitoring is required, reducing costs and potentially reducing the risk of invalidation. [REDACTED]

[REDACTED] Additionally, no protocol is immune to administrative or other technical violations of environmental laws, which have the potential to invalidate otherwise verifiable offset credits.

On May 29, 2014 California issued a notice of investigation of ODS offset credits that were created at the Clean Harbors Incineration Facility in El Dorado, Arkansas. The investigation cited potential violations of the facility's operating permit issued under the federal Resource Conservation and Recovery Act (RCRA). Specifically, the facility is claimed to have improperly sold hazardous waste material as a commercial substitute during the period 2009-2011, which previously resulted in a settlement with the U.S. Environmental Protection Agency ("EPA") of \$581,236 USD. On November 14, 2015, California issued formal notice that it was invalidating 88,955 tCO<sub>2</sub>e offset credits from the Clean Harbors facility. The notice stated that while the offsets were real, quantifiable, measurable and additional, however, the invalidation resulted from a technical violation for not meeting certain environmental laws, which under California Cap and Trade was a violation of offsets rules and prevented their creation. The 88,955 credits were a much smaller subset of the over 4.3 million that were under investigation.

## 2. *Landfill Gas*

Accepted in Québec, for Canadian-based landfills, but not in California due to existing regulations already requiring the management of landfill gases, this protocol involves extracting methane gas from landfills and converting it to CO<sub>2</sub> for combustion in the power sector. A landfill is a disposal site for waste materials including household, commercial, industrial and non-hazardous solid waste. Bacteria break down the waste and produce landfill gas.

Landfill Gas has been included in some Cap and Trade programs, such as Québec and the U.S. Regional Greenhouse Gas Initiative ("RGGI") but also contested in others, such as California Cap and Trade. Although methane is a potent GHG and can be extracted from landfills and used for combustion in power generation, California has not adopted landfill gas as an offset protocol because it does not meet the criteria of 'additionality', or offset reductions that would otherwise occur absent Cap and Trade. Many landfills across the U.S. are already required to capture the methane at landfills or already do so to reap benefits to their Renewable Portfolio Standards ("RPS") in the power sector. As Ontario and Québec do not have similar RPS or similar programs, they can accept offsets from Landfill Gas as additional to the Business-As-Usual baseline case.

## 3. *Coalmine Methane*

Known as "Coal Mine Methane" or "Mine Mouth Capture", this protocol applies to methane emissions reductions or capture and destruction at coalmines. There are two key sources of methane from active mining: ventilated air methane and methane released from drainage systems. While the protocol has potential to add substantial supply to the offset market, Coal Mine Methane ran into political and environmental pressure during the adoption process in California. Environmentalists claim that the protocol may support the economics of coal producers, which in turn could lead to increased coal production and increased life-cycle emissions. [REDACTED]

[REDACTED] Coalmine Methane offsets required a substantial capital investment up-front and until the WCI program is officially extended beyond 2020, it is difficult for offset developers to dedicate the capital to these projects. To date, the Coalmine Methane offsets issuances in California have been much less than initially expected.

## 4. *Domestic Forestry*



Forestry offsets represent the absorption of CO<sub>2</sub> from the atmosphere rather than a reduction. This protocol includes projects for i) reforestation or tree planting, ii) improved forest management to maintain or increase carbon stock on forested lands by increasing rotation ages or increasing stocking of trees, and iii) avoided conversion by preventing the conversion of forestland to non-forestland. Forests act as a carbon sink by absorbing CO<sub>2</sub> from the atmosphere through photosynthesis and store it for a long time. Thus, offsets can be created by essentially planting new trees or preventing the harvesting of existing trees for lumber, in order capture CO<sub>2</sub> in the atmosphere as the trees grow and sequester CO<sub>2</sub>

Several of the issues that are in debate over whether Ontario should or should not include Forestry as an offset protocol are the difficulties in measuring the amount of CO<sub>2</sub> that can be absorbed over extended periods of time. Measurement and monitoring can be quite costly. Also, proving that the offsets are 'additional' can also be a challenge when provincial laws already require replanting when a forest has been cut or when existing forestry management rules are stricter in Canada than in the U.S. Additionally, the risk of forest fires can cause offsets to be invalidated or reduced.

Figure 4: COMPARISON OF OFFSET PROTOCOLS IN CALIFORNIA, QUÉBEC AND ONTARIO – ISSUED TONNES

tCO <sub>2</sub> e	California	Québec	Ontario
ODS	12,266,378	467,808	Expected
Livestock/Agricultural Methane	2,644,865	0	Under consideration
Domestic Forestry	28,940,365	N/A	Under consideration
Urban Forestry	0	N/A	
Coalmine Methane / Minemouth Capture	3,573,844	0	Expected
Rice Cultivation	0	N/A	N/A
Landfill Gas	N/A	37,800	Expected
<b>Total Issued:</b>	<b>47,425,452</b>	<b>505,608</b>	<b>0</b>

Source: Alpha Inception, CARB, MOECC, September 2016

California offsets are already undersupplied when compared to the maximum permissible usage of 8%

Additional descriptions of potential protocols that could be adopted by Ontario in the future and are currently in use in California have been provided below:

#### 5. *Urban Forestry*

This protocol includes projects for planned tree planting and maintenance activities that permanently increase carbon storage. Due to difficulty in obtaining urban projects, those that are 'additional' projects from this protocol are currently non-existent and are not expected to provide substantial supply of offsets in the future.

#### 6. *Livestock Management*

Known as Agricultural Methane, this protocol is accepted in California and Québec and is for the control of manure that is treated and stored under anaerobic conditions to decompose and thereby produce methane, which can be emitted into the atmosphere. Projects would include biogas capture and destruction either onsite or offsite. Methane, while not as potent as ODS, still receives a 21x multiplier when it is destroyed through burning or combustion.

Projects tend to be small and range from 10,000-20,000t per project and output needs to be verified each year. The cost per credit of developing and converting these offsets credits is potentially the most expensive of the common protocols, due to low economies of scale.

## 7. *Rice Cultivation*

This protocol allows rice farmers to generate offsets by implementing certain practices in their cultivation processes. Farmers can implement one of three methods or techniques: dry-seeding, early drainage, or alternate wetting and drying. Dry seeding involves sowing dry seeds instead of pre-germinated ones. Early drainage refers to draining the fields 7-10 days earlier than usual. Alternate wetting and drying is the practice of flooding and then drying the fields throughout the growing season. Although the agricultural sector uses various heavy farm equipment and machinery, the total expected volume of offsets that could be expected from this offsets protocol is quite small.

## EARLY REDUCTION CREDITS

There are some mandatory participants that are eligible to receive early reduction credits for actions that occurred between January 1, 2012 and December 31, 2015. An early reduction credit will serve the same purpose as a freely distributed allowance and can be turned in to satisfy compliance obligations under Cap and Trade.

Ontario has reserved a maximum of 2-million early reduction credit and participants must apply for such credits. AI expects that all 2 million available for 2017 will be applied for and granted. Ontario has not formally released its regulations surrounding the awarding of early reduction credits. Proposed regulations for early reduction credits is expected prior to the January 1, 2017 start of Ontario's Cap and Trade, though the credits themselves are not needed for compliance until the end of the compliance period, so a delay is possible. It is expected that natural gas distributors will not be allowed to apply for early reduction credits.

## APPLICATION OF HOLDING LIMITS

Holding Limits are imposed upon all Cap and Trade participants, and apply across affiliated entities. A holding limit is the maximum number of allowances, including strategic reserve allowances, and early reduction credits that can be held across all CITSS accounts (holding accounts and compliance accounts) for a participant or group of related participants. Offsets do not fall under a holding limit. Exemptions exist for capped participants who deposit allowances into their compliance accounts. The amount of the exemption is approximately equal the participant's accumulated compliance obligation through the end of the year that the exemption is calculated. For example, in 2017 a capped participant's exemption amount would be equal to 1-years' worth of emissions and in 2018 the exemption would be equal to 2-years' worth of emissions.

The calculation of the Holding Limit applies 1) to the current vintage year and all prior vintage years collectively and 2) to each forward vintage year. The calculation is as follows:

$$HL_j = 2,500,000 + 0.025 \times (C_j - 25,000,000)$$

$HL_j$  = the limit on emission allowances with vintage year  $j$  that are held in the cap and trade accounts during a year. Where year  $j$  is the current vintage year, the HL shall apply to current vintage allowances and all prior years, and

$C_j$  = the number of Ontario emission allowances created for year  $j$ .

The Holding Limit is imposed upon all market participants to prevent market abuse and hoarding of allowances. Holding Limits are viewed similarly by each of the WCI jurisdictions, however, the calculation is based on the combined annual budgets and is not simply the summation of the holding limits applied to each program individually. Figure 5 below shows the calculated Holding Limits for Ontario and the WCI Cap and Trade with and without an Ontario Linkage.

Figure 5: CALCULATED HOLDING LIMITS NOT INCLUDING EXEMPTIONS IN ONTARIO AND WCI - TONNES

	2017	2018	2019	2020
Ontario	5,433,300	5,286,000	5,138,900	4,991,700
WCI (w/o Ontario)	12,662,000	12,306,500	11,953,750	11,598,500
WCI (w/ Ontario)	N/A	15,717,500	15,217,650	14,715,200

Source: Alpha Inception, CARB, MOECC, September 2016

## TIMELY SURRENDER OF COMPLIANCE INSTRUMENTS

The Ontario Cap and Trade annual budgets are categorized into compliance periods. Compliance Period 1 in Ontario runs from 2017-2020, which will coincide with the end of Compliance Period 3 in Québec and California, which runs from 2018-2020. Thereafter, it is expected that each jurisdiction will maintain parallel compliance periods across the programs.

At the end of a compliance period, participants are required to surrender one compliance instrument in the form of an allowance, an offset, or an early reduction credit for each tCO<sub>2</sub>e emitted during the compliance period, generally on the first business day in November of the year following the end of a compliance period. The first compliance date in Ontario is November 1, 2021. One key difference in Ontario is that there is only a compliance surrender due at the end of the full compliance period whereas in California, covered emitters must make annual surrenders equal to 30% of their emissions and then provide the full balance at the end of the compliance periods. As the first compliance surrender in Ontario isn't due until 2021, if the programs link, an Ontario capped participant could satisfy their entire compliance obligation with allowances and, to the extent permissible, offsets, from California or Québec.

For capped participants that fail to surrender compliance instruments by the surrender deadline, the MOECC can levy a penalty equal to 3-times the shortfall for non-compliance. If the capped participant does not true up themselves for that amount, then MOECC will use the penalty volume multiplied by the most recent ACP. In addition to the penalty volume, the capped participant must also satisfy the initial shortfall, or in other words and shortfall after compliance is due would require 4-compliance instruments for each tCO<sub>2</sub>e shortfall. Furthermore, there could be administrative monetary penalties for non-compliance that have not yet been determined but could be as much as \$1 million.



## SECONDARY MARKET TRADING AND WCI AUCTION RESULTS

### EXCHANGE TRADING VIA INTERCONTINENTAL EXCHANGE

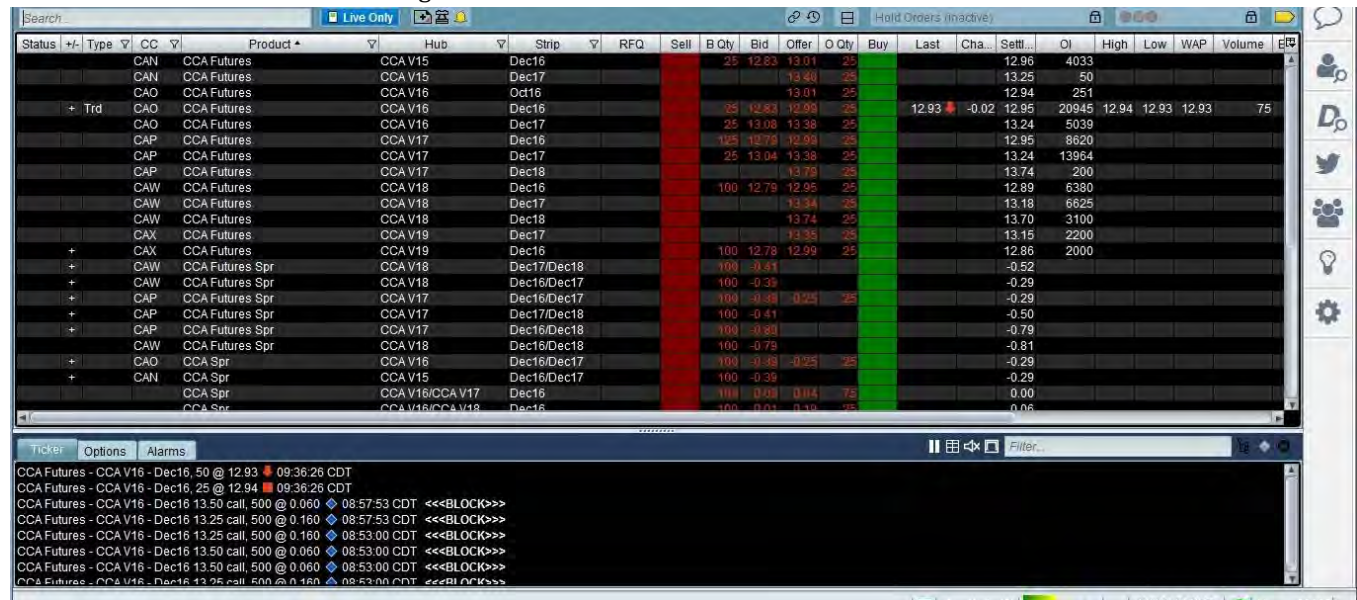
#### Overview:

Outside of the quarterly auctions, the two common methods of procuring and trading compliance instruments are via Exchange Trading on the Intercontinental Exchange (“ICE”) and “Over-The-Counter” (“OTC”) through direct-deal and broker markets.

ICE is an electronic trading platform that offers access to regulated futures exchanges, global OTC markets and clearinghouses in North America and Europe. In terms of the California carbon market, ICE has become the most successful and liquid exchange platform for California Carbon Allowances (“CCA”), including futures and options. ICE futures trade on a WebICE online trading platform, which can be seen below in Figure 6.

The ICE futures contracts are settled physically with delivery made via CITSS account transfer if CITSS is operational. If at delivery the Market Tracking System (“MTS”) or CITSS is not capable of transferring allowances or such allowances do not exist, then the contract will financially settle at the ARP for the year of delivery. The language of the ICE contract also allows the seller to deliver the contracted vintage allowances or an earlier vintage. Based on recent history in the U.S. federal emissions markets, CAIR allowances continued to trade in the absence of a current mandate. [REDACTED]

Figure 6: EXAMPLE WEBICE TRADING PLATFORM



Source: Intercontinental Exchange, September, 2016

#### Ontario Carbon Allowances (“OCA”) Futures:

Should Ontario link with WCI in 2018, as expected, then the CCA futures contract would provide allowances that would also be compliant with Ontario Cap and Trade. Prior to linkage, ICE intends to list a separate futures contract that would allow Ontario participants (and others, including market speculators) to trade futures on Ontario allowances without fear of purchasing a California or Québec allowance that may not be acceptable in Ontario if the programs ultimately do not link. The Ontario-

contract may also be used by speculators seeking exposure to Ontario prices and betting on non-linkage. Initial contract specs for the Ontario Carbon Allowance (“OCA”) futures contract are provided below:

**Contract Size:** 1,000 Ontario Carbon Allowances

**Currency:** CAD

**Settlement:** Physical delivery

**Registry:** CITSS

**Deliverable Instruments:** Carbon allowances issued by the Province of Ontario or a linked program that qualify for the Ontario Cap and Trade.

The OCA contract would prohibit the use of California or Québec allowances to satisfy a delivery obligation if the programs do not link but would allow for such if linkage occurs. ICE expects to launch the OCA futures contract shortly, with initial contract deliveries of Jun-2017 and Dec-2017. [REDACTED]

#### **California Carbon Allowance (“CCA”) Futures:**

**Liquidity and Open-Interest:** ICE has been the most liquid exchange in terms of volumes of CCAs purchased and sold. Across all existing contracts and deliveries, Open-Interest has been over 100 million tonnes, however, recent liquidity has been significantly lower than in previous years due to the cumulative oversupply of allowances available in the market and the perceived risk of outstanding legal challenges in California.

The lack of liquidity in the market for CCA futures is just one of the reasons that AI expresses concern over the Regulatory Framework (EB-2015-0363) issued by the Ontario Energy Board (OEB) regarding utility procurement practices. Specifically, the OEB determined that the CCA futures settlement prices over a 21-day measurement period should be used when developing an Annual Carbon Price Forecast. [REDACTED]

[REDACTED] This could result in a poor representation of market levels, the farther out in the term (1-year) that is being evaluated.

Additionally, CCA futures prices consider a market cost of capital and not the mechanism used to increase the annual auction reserve price and using the CCA price implies that linkage between California and Ontario is certain, [REDACTED]

[REDACTED] More information concerning the challenges of relying on CCA pricing will be discussed in the Carbon Strategy Report, in the context of developing a carbon price forecast.

The figure below shows the Open-Interest, or number of contracts with one buyer and one seller, for various futures and options contracts. Many participants do not yet have the capability to transact through the ICE or choose to purchase solely at auction or through bilateral contracts.

Figure 7: CCA FUTURES AND OPTIONS OPEN-INTEREST IN TONNES

Product	Vintage	Contract	Type	Strike	Open-Interest in tonnes	Open-Interest (All Contracts) in tonnes
CCA	V2016	Dec-2016	Futures	N/A	20,945,000	29,656,000
CCA	V2017	Dec-2017	Futures	N/A	13,964,000	22,984,000

CCA	V2018	Dec-2017	Futures	N/A	6,625,000	27,605,000
CCA Options	V2016	Dec-2016	Call	\$13.25	6,500,000	24,525,000
CCA Options	V2016	Dec-2016	Put	\$11.75	2,800,000	7,825,000
CCA Options	V2017	Dec-2017	Call	\$13.75	9,500,000	18,600,000

Source: Intercontinental Exchange, September 26, 2016

**Historical Market Impacting Events:** As with many environmental markets, the liquidity and price action from day to day can be very volatile. Some days have traded substantial volumes whereas others have not traded any volume at all. Recently traded volumes have been far lower than in previous years. Additionally, the price volatility has been significant and large price moves typically have coincided with “regulatory” news or major events, such as the release of auction results. Highlighted below are several key market events with brief descriptions of the market impacts. The settlement prices and open-interest are for only the December contract each year (rolling prompt December):

Figure 8: CCA FUTURES DAILY SETTLEMENT PRICE AND OPEN-INTEREST



Source: Intercontinental Exchange, September 26, 2016

1. **July 2012 – Uncertainty about Supply/Demand and forecasts for \$55-\$80 USD carbon prices:** Although the auctions had been delayed by one year, various market analysts had published research and price forecasts that suggest California Carbon Allowances would reach as high as \$80 per tonne by 2020.
2. **November 2012 – California Chamber of Commerce files lawsuit against Cap and Trade:** Just days before the inaugural allowance auction, the California Chamber of Commerce filed a lawsuit against Cap and Trade that argued that auctions were an illegal tax not authorized by the California legislature. This resulted in secondary market prices collapsing very near the \$10 auction reserve price. The November auction settlement price was \$10.09 USD.



3. **June 2013 – Market realization of oversupply and legal appeal:** Due to low natural gas prices and an aggressive Renewable Portfolio Standard, analysts came to the realization that California’s emissions would be significantly lower than the annual budget caps. Secondary markets and auction settlement prices gradually moved towards the auction reserve price. In November, 2013 a California Superior Court Judge rules in favour of CARB authorizing the cap and trade auctions. The decision was later appealed by the Chamber of Commerce and remains in appeal.
4. **February 2016 – Legal stay issued for the Clean Power Plan and RGGI fallout:** The U.S. Environmental Protection Agency (“EPA”) had previously issued widespread environmental regulations under the Clean Power Plan (“CPP”). Various coal-states sued the EPA and were granted a stay of the CPP until such legal processes had been carried out. There was no immediate impact on California because the CPP targets were less aggressive than California’s. However, the stay did lead to a significant drop in prices in the Regional Greenhouse Gas Initiative (“RGGI”), a companion cap and trade program in the U.S. Northeast. Within weeks, this led to de-risking across environmental markets and, for the first time, California prices fell below the auction reserve price or perceived market floor price and auction volumes began to be substantially undersubscribed.
5. **August 2016 – California legislature passes SB32 extending climate targets to 2030:** The California legislature passed long-awaited legislation through SB32 and AB197 that extended California’s climate goals to reach a 40% reduction by 2030. The bills failed to explicitly extend Cap and Trade as the mechanism to achieve those goals and so uncertainty remains as to the future of Cap and Trade in California.

## OVER-THE-COUNTER TRADING

### Overview:

Bilateral or OTC transactions that occur directly between two parties (including brokered transactions) instead of on an exchange involve two parties agreeing on how a trade will be settled in the future. Significant differences can exist from one contract to the next. OTC transactions are particularly useful when transacting in highly specialized products, such as offset credits because of the uniqueness in protocol, vintage, invalidation risk, conversion and other terms that can exist in the contract. Below are several recommended environmental brokers and their contact information.

Additionally, futures transactions can be introduced by a broker and then cleared on ICE. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**Broker Fees:**

Although not always necessary, most brokers prefer to execute a brokerage agreement prior to arranging any transactions. The brokerage agreements will detail specifically the notification details for sending confirmations, the settlement instructions for brokerage fees, the specific fees involved in different types of transactions, and, if possible, an exclusivity. [REDACTED]

Additional fees are also charged by the Futures Clearing Merchant ("FCM") and the Exchange. [REDACTED]

[REDACTED] More information on ICE fees can be obtained by visiting the fees page: [https://www.theice.com/publicdocs/futures\\_us/IFUS\\_Energy\\_Fees.pdf](https://www.theice.com/publicdocs/futures_us/IFUS_Energy_Fees.pdf)

AI may provide recommendations for environmental product brokers by request.

**Over-The-Counter Products:**

[REDACTED] Additionally, there are some products that, due to complexity or other contracts specific nuances, cannot be transacted on an exchange and must be conducted OTC. A few examples of OTC products are described below:

1. **Forwards:** Bilateral or OTC transactions that occur directly between two parties (including brokered transactions) instead of on an exchange involve two parties agreeing to contract specific terms including quality or vintage, delivery, quantity and credit provisions. Forwards are quite like futures contracts except they are conducted directly between the parties but can facilitate non-standard delivery terms and odd-lot quantities, including variable quantities.

2. **Block-Cleared Futures:** These are transactions for futures contracts that are not traded directly on the screen but, instead, can be broker-introduced and then sent to the exchange for clearing and to facilitate credit. Additionally, these transactions can be cleared between two parties wishing to transact but perhaps preferring to face the exchange rather than one another. In this instance, a trade is agreed to by the parties, with substantial similarity to the ICE futures contract terms. Next, the broker or one of the individual parties introduces the transaction to the exchange for clearing. Block-cleared futures can be particularly useful for obtaining larger-volume trades, where placing a bid or offer for large volume on the exchange platform may influence the market
3. **Options:** Like block-cleared futures, options on futures can be transacted on the exchange platform, through a broker, or can be directly negotiated between two parties and sent to the exchange for clearing. Non-standard options, or options structures, are typically negotiated directly between the parties as only standard options (puts, calls, spreads) can be executed on the exchange platform.
4. **Auction-Clearing Price-Indexed:** These transactions involve a purchase or a sale at the clearing price of a pre-designated auction plus a premium or a discount. An example of this type of transaction is provided below:

Volume = 100,000 allowances, divided equally in 25,000 purchases at each of the 2017 quarterly auctions.

Price =  $ACP_q + X$

Where:

“ACP” is the Auction Clearing Price

“q” designates each the relevant auction

“X” is either a premium or a discount to the ACP

Auction-Clearing Price-Indexed transactions links purchase prices to the ACPs. It can also be useful for those entities that choose not to participate in the auctions for any variety of reasons but still wishing to obtain exposure to auction prices, rather than secondary market pricing. It is important to note; however, these transactions do not obligate the seller to participate in the auction either. The volumes sold can be fulfilled from anywhere, including secondary market purchases.

5. **Offsets:** As discussed previously, offsets vary in more than just standardized contract terms and, now, can only be transacted OTC between parties or through a broker. More on contracting considerations and specific product types for offsets is provided below.
6. **Carbon Compliance Instrument:** These transactions also only occur in the OTC market. The Carbon Compliance Instrument is a product whereby the buyer essentially allows the seller to determine the portfolio optimization between allowances and offsets. It can be useful for entities too small to procure offsets on their own or those not wishing to expend the resources on evaluating optimization strategies. The buyer normally pays a discount when compared to a portfolio of only allowances and in exchange allows the seller to provide a mix of allowances and offsets, up to the maximum permissible amount of 8% offsets. These transactions can be short-term or even multi-year.

## OFFSET CREDITS – CONSIDERATIONS

Due to the various risk-sharing mechanisms and the uniqueness of each offset contract, there are several areas that should be given attention when entering contracts to buy or sell offset credits.

- **Invalidation:** Whose responsibility is it when a) there has been an overstatement in emission reductions, b) credits have been used in another program, or iii) the project violated local, state or national environmental or health and safety laws.

- Regulatory changes: what happens in a contract when regulations change, are amended or are temporarily stayed. Regulatory changes can be expected over the course of the program. These changes should not necessarily be out-clauses in contracts.
- Force majeure events: When the project is unable to delivery expected production due to uncontrollable events.
- Change in law: May affect the qualification and the ability to surrender an offset credit for compliance purposes. Geographic limitations placed on offsets is one potential example of this risk.

[REDACTED]

For the compliance buyer of offset credits, the creditworthiness of the seller can also be crucial, unless the offsets are insured by the jurisdiction providing the issuance. Most early-action credits have been sold from smaller, credit constrained developers to a very small group of large marketers and other speculators. They could absorb the risk of these constrained entities either through project liens or simply by purchasing issued credits that are available immediately, minimizing credit exposure but also opening conversion and program risk.

[REDACTED]

## OFFSET CREDITS - PRODUCTS

The early-action offset market has begun to evolve in several different ways to address needs of buyers. Below is a brief description of several common product structures that demonstrate the risk sharing mechanisms currently in the California Offset market, although most remain relatively illiquid when compared to allowances. Price can also vary widely in each contract depending on the risk sharing and how the costs of verification and conversion have been allocated.

**Golden California Carbon Offsets (“gCCOs”):** The “Gold” standard whereby the seller wears all the risk of product invalidation and guarantees a program compliant product (an early action credit or other that has been converted) with a firm delivery volume. Typically, these credits would be backed by either replacement offsets or allowances.

[REDACTED]

**Insurance Product:** [REDACTED] is an insurer that offers a policy to protect companies from the invalidation of carbon offset credits sold as part of California’s Cap and Trade program. [REDACTED] based in London, will sell insurance for credits originally issued by the Climate Action Reserve that will protect buyers against the risk of invalidation of offsets by ARB. Claims are expected to settle financially and not physically, which raises some concerns in terms of ability to satisfy compliance obligations. Additionally, it is not yet clear what the costs or the limitations of such insurance will be, however, most market participants expect it will be high and have a financial cap.

[REDACTED]

**Non-Guaranteed California Carbon Offsets (“CCOs”):** The Silver standard whereby the seller wears the risk of invalidation only after the credits have been retired for compliance. Again, these contracts typically have the seller taking the risk of non-conversion to CCO, if an early action credit is used, but could also be structured to have the buyer take on this risk. Delivery is typically non-firm, and subject to availability of the project. In California, CCOs are typically designated as either “CCO8” or “CCO3”, depending on the number of verifications that have been conducted and the extent of the invalidation risk. A CCO8 has one verification and retains 8-years of invalidation risk from the date of issuance whereas a CCO3 has received a double-verification and retains only 3-years of invalidation risk. Theoretically, a CCO that has passed the timeframe of invalidation is superior to even an gCCO because, assuming a spot transfer, there is no longer any invalidation risk and there is no extended counterparty credit risk.

**Index +/- Structure:** Buyer pays seller to effectively manage their portfolio of compliance instruments. Delivery is a firm volume and pricing is based upon the clearing price in the quarterly auctions. Seller typically has the option to optimize purchases between allowances and offsets but accepts all risks of invalidation or non-conversion.

There is a premium for the auction index structures due to the demand being primarily by entities with high internal cost of capital or inability to participate in the auctions.

Offset holders also have other structures available for selling in the offset market. These include: selling a fixed quantity vs variable quantity of credits; a non-guaranteed forward delivery that is project specific; credits from a portfolio of projects; and selling to an offset aggregator, financial intermediary or marketer.

## QUARTERLY ALLOWANCE AUCTIONS

### GROWING PAINS, AUCTION VIOLATIONS, AND UNSOLD TONNES

With 16 quarterly auctions held to date in California (8 of which have been held jointly with Québec), the auctions represent significant liquidity and market price influencing events in the marketplace. The auctions have been declared successes by CARB because few technical glitches have occurred in the auction platform and software and, up until only recently, the current vintage auctions have been fully subscribed (forward vintages have not typically been fully subscribed). However, failure on the part of some participants to understand the procedures, insufficient system testing, and the continued uncertainties plaguing the overall program have led to potentially costly missteps in buying and selling allowances. CARB-instituted penalties and fines have been levied upon auction participants for what could appeared to be administrative misinterpretation of regulatory guidance.<sup>1</sup>

1. ***Inaugural auction clears slightly above the floor with filing of lawsuit*** - In the November 14<sup>th</sup>, 2012 auction, where the clearing price was \$10.09 USD compared to the \$10.00 USD floor price, only 72 of the nearly 400 covered entities registered for the auction. This was attributed to the overall uncertainty of the program and whether the auction would in fact take place. Days prior to the auction, the California Chamber of Commerce filed a lawsuit that challenged the legality of the auctions<sup>2</sup>.
2. ***Auction miscues lead to costly mistakes and rules violations for large utility*** - After initially publishing auction results on November 19<sup>th</sup>, 2012, CARB re-issued auction statistics on December 6<sup>th</sup> clarifying that the number of Qualified Bids was much less than the submitted bids and revised the bid ratio from 3.1 down to 1.06. The excess submitted bids were incorrectly input by one of the largest utilities in the state, Southern California Edison (SCE). On December 20<sup>th</sup>, 2012, Bloomberg reported that Southern California Edison (“SCE”), one of the largest emitters in California, unintentionally bid for twice as many allowances as were for sale. Not only did this explain the high number of

<sup>1</sup> On February 14, 2014 ARB announced that action had been taken to administer four enforcement cases against cap and trade participants. Violations included exceeding a bid guarantee and improper disclosure of auction participation <http://www.arb.ca.gov/newsrel/newsrelease.php?id=575>

<sup>2</sup> <http://www.bizjournals.com/sacramento/news/2012/11/13/calchamber-sues-carb-cap-trade-auction.html>



unqualified bids initially reported by CARB, given that SCE represented 72 per cent of those bids, but also meant that SCE purchased approximately 1.6 million more allowances than intended. Ironically, SCE was fined for reporting the issue to shareholders, which they interpreted as a requirement by the Securities and Exchange Commissions (“SEC”).<sup>3</sup>

3. ***Technical glitch results in secondary market activity*** - In the February 19<sup>th</sup>, 2013 auction, a technical glitch in the communication of auction results led some entities to receive notification that none of their bids were successful even though the submitted bids were above the auction-clearing price of \$13.62 USD leading to a flurry of activity in the secondary markets.
4. ***Delayed linkage and nearly cancelled auction*** - Although California and Québec officially linked their programs in January 1<sup>st</sup>, 2014, lack of testing the joint auction platform led to implementation delays and the first joint auction was not held until November 25<sup>th</sup>, 2014. The November 25<sup>th</sup> auction was supposed to occur on November 19<sup>th</sup> but was initially cancelled on the day of the auction due to ‘technical difficulties’ that prevented some participants from gaining access to the auction platform<sup>4</sup>.
5. ***Poor participation rates and majority of auction allowances go unsold*** – After over 14 auctions that successfully sold most tonnes offered, recent joint auctions held on May 18<sup>th</sup>, 2016 and August 16<sup>th</sup>, 2016 have been severely undersubscribed and over 90 million allowances have gone unsold<sup>5</sup>. Low participation is greatly attributed to the lack of certainty in California’s post-2020 Cap and Trade program, an outstanding legal challenge, a structural deficiency in the program that has led to a massive oversupply of allowances, and a general de-risking by both compliance and speculative entities after a massive price drop in carbon allowances under the Regional Greenhouse Gas Initiative (“RGGI”) that was caused by the unexpected Supreme Court stay ruling of the federal regulation under the Clean Power Plan, discussed in detail below.

## HISTORICAL AUCTION RESULTS AND ANALYSIS

Auction results, arranged by auction number, to date are summarized below in Figure 10 and Figure 11:

<sup>3</sup> [www.bloomberg.com/news/articles/2012-12-20/edison-snafu-skews-demand-in-first-california-carbon-permit-sale](http://www.bloomberg.com/news/articles/2012-12-20/edison-snafu-skews-demand-in-first-california-carbon-permit-sale)

<sup>4</sup> David Clegern, a spokesman for the Air Resources Board, said there was a problem with access to the electronic auction platform “Some participants could get in, some couldn’t, and everyone needs the same opportunity to participate,” Clegern said in an email (<http://www.sacbee.com/news/business/article4021404.html>)

<sup>5</sup> [https://www.arb.ca.gov/cc/capandtrade/auction/may-2016/summary\\_results\\_report.pdf](https://www.arb.ca.gov/cc/capandtrade/auction/may-2016/summary_results_report.pdf)

Figure 10: 'CURRENT' AUCTION RESULTS IN CALIFORNIA, QUÉBEC AND WCI

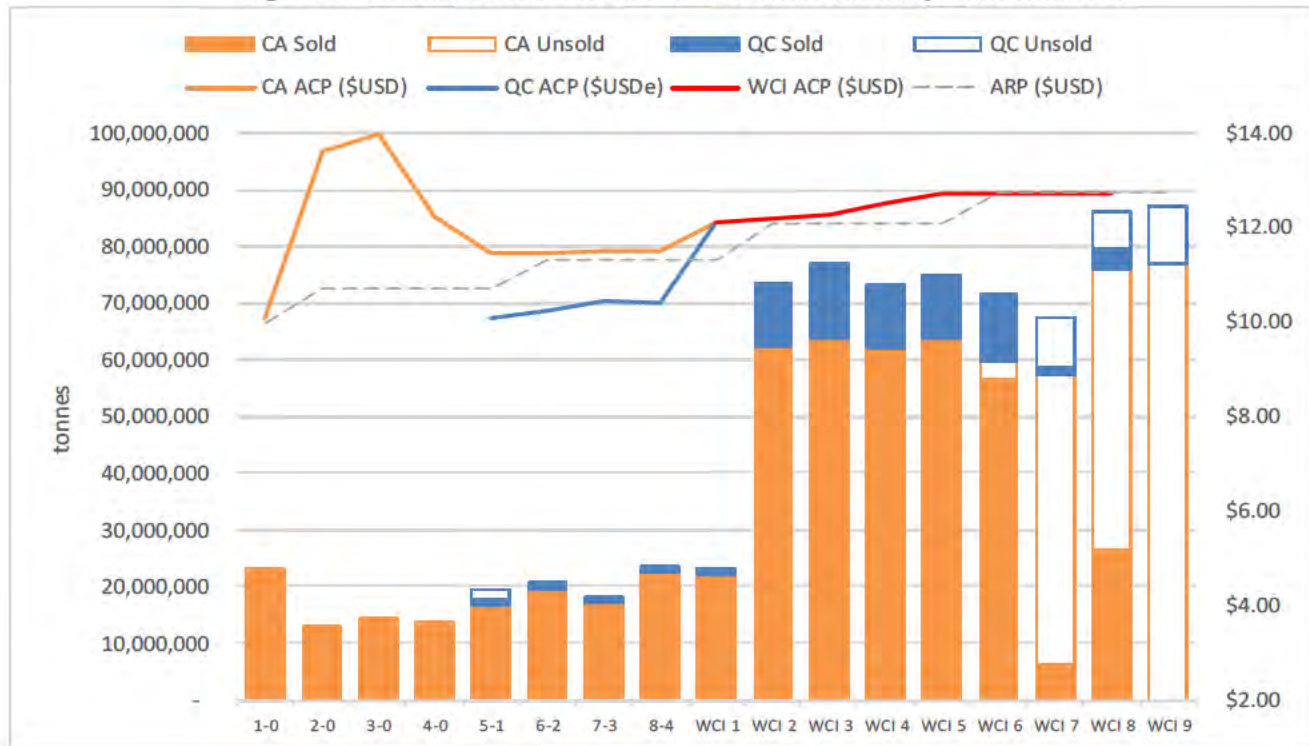


Figure 11: 'FORWARD' AUCTION RESULTS IN CALIFORNIA, QUÉBEC AND WCI

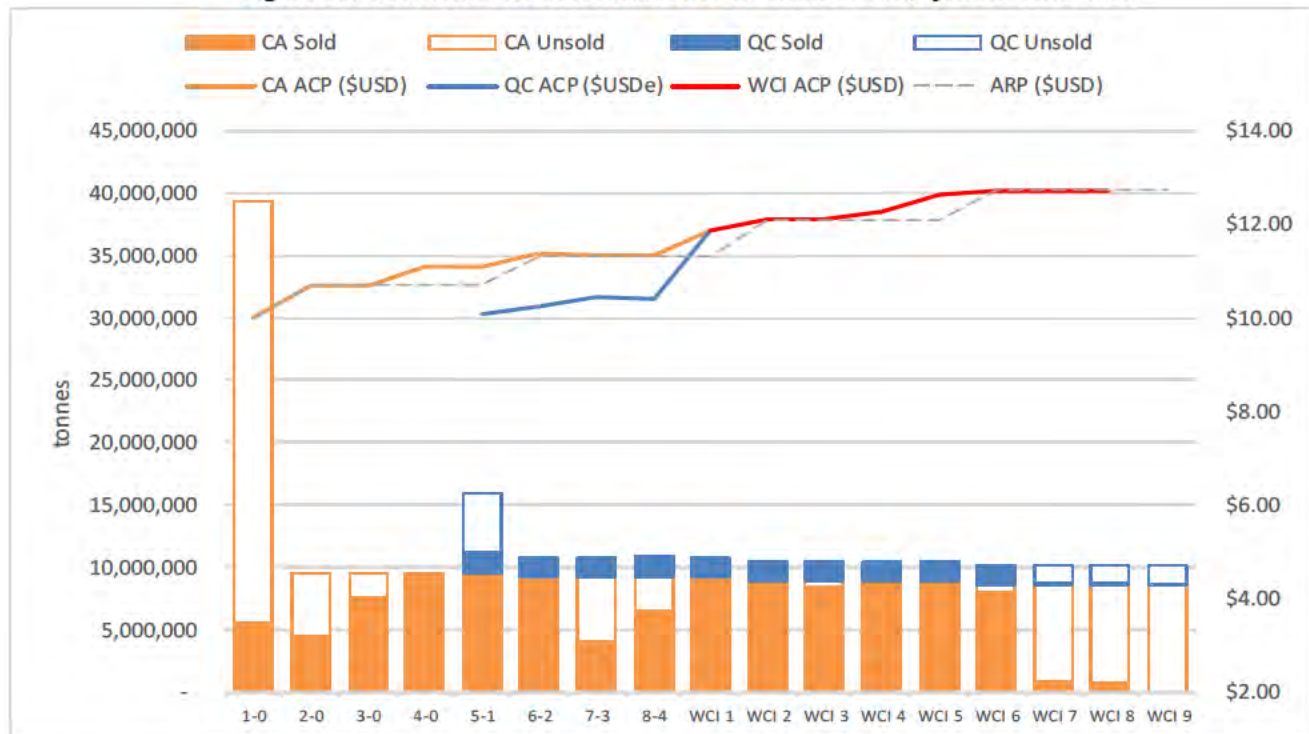


Figure 10 and Figure 11 Sources: Alpha Inception, CARB, MDELCC, September 2016

- 1) Data is arranged by auction number For example, '6-2' means CA Auction #6, held on Feb 19<sup>th</sup>, 2014, and QC Auction #2, held on Mar 4<sup>th</sup>, 2014
- 2) ARP represents only the California Auction Reserve Price and, subsequently, the WCI ARP
- 3) QC ACP has been converted into USD for purposes of comparison at the monthly average exchange rate as posted on [www.x-rates.com](http://www.x-rates.com)

### **Current Auctions:**

**Analysis of Settlement Price Trajectory:** Since California and Québec linked their Cap and Trade programs, the current-vintage auctions have cleared very close to the auction reserve price set each year. This has been in large part due to a worsening oversupply of allowances in California, as emissions have fallen significantly below the annual budgets set forth in 2006 because of the great recession in 2008 and the success of complementary measures, including the RPS. When the budgets (caps) were set, they could not foresee the lower emissions that would result from the economic slowdown due to the U.S. financial crisis of 2007-08, the swing from coal to natural-gas fired electric generation caused by low-priced natural gas and shale drilling, nor the subsequent, and substantial, increase to California's renewable portfolio standard, which has caused an expedited build-out of renewable electricity generation in California.

Auction prices over the past two years have remained very near the price floor levels. The most significant exceptions have been in the November 2014 and November 2015 auctions, where the increasing annual auction reserve price and the time value of money have lifted auction prices to the expected 2015 and 2016 auction reserve price levels, respectively. The November auctions represent the last opportunity before the auction reserve price increases for the next year and have typically resulted in increased participation and demand brought forward from the following year.

The first 4 auctions in Québec had low participation but *most* tonnes that were offered were sold. Québec's regulations, interestingly, did not initially align the auction reserve price in Québec with that of California because exchange rates were not involved in the calculation of the floor price. The first 3 auctions held in 2014, for example, had auction reserve prices of \$11.34 USD and \$11.39 CAD, in California and Québec, respectively. At an exchange rate of ~1.10 CAD/USD the effective floor price in Québec was ~\$10.25 USD, over \$1 lower than California's floor price. This was a significant market arbitrage opportunity but few entities could take advantage of it due to a requirement that Québec auction participants be domiciled in Québec. Ontario has a similar requirement for auction participants but has fixed the auction reserve price to the greater of the California and Québec calculated reserve prices, considering exchange rates.

**Herfindahl-Hirschmann Index (HHI):** WCI has released statistical information following each auction, which includes the HHI, a measure of market concentration. Taking out the November 2012 auction results, where an error in bid submission led to a large volume of allowance purchases by one single entity, the HHI from February 2013 through November 2015 has averaged around 613 – low market concentration.<sup>6</sup> Recently, in the 3 auctions held to date in 2016, the HHI has averaged 1,603 and reached a high of 2,780 – high market concentration – in the May auction. It is expected that Ontario will release similar statistics following each auction and an entity with a substantial market position and that entity's auction purchases, whether large or small, will be indicated by the HHI.

One aspect that is misleading about the HHI data point is that many of the "covered entities" in California, including several investment banks, electricity importers and energy marketers are categorized as covered entities even if their reported emissions are below 10,000 tCO<sub>2</sub>e. In both California and Ontario there is no threshold if you are an importer of electricity, which comes with a larger purchase limit at auctions than as a true 'speculators'.

**Qualified Bidders:** Participation in the California-only auctions has historically run between 70-80 participants per auction and less than 20 in Québec-only auctions. Participation reached its peak at 96 qualified bidders in the May 2015 combined WCI auction, which was several months before a major compliance surrender deadline. The participation per auction is far lower than the covered emitters under the WCI Cap and Trade but many covered entities receive free allowances and others may only purchase at auction one time per year or per compliance period. There has been a total of approximately 240 different entities that have qualified for at least one auction.

6 The Herfindahl-Hirschman index (HHI) is a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in a market, and then summing the resulting numbers, and can range from close to zero to 10,000 (www.investopedia.com)

With the recent subdued market and only a one-third compliance obligation due each November (the remaining will not be due until after the compliance period in November 2018), participation has been low with 43 qualified bidders in the May 2016 auction and 53 in the August 2016 auction.

**Advance Auction**

Analysis of Settlement Price Trajectory and Participation: Auction prices in the forward-vintage auctions have consistently settled closer to the auction reserve prices. As the forward vintages are 3 years out cannot be used until the next compliance period, the auctions have generally not brought significant participation despite even the substantial discount to the current-vintage auctions earlier in the program. It should be noted that with the 4-year term for the first compliance period in Ontario, 2020 vintage allowances purchased as the advance auction in 2017 can be surrendered for the same compliance period.

[REDACTED]

- [REDACTED]

- [REDACTED]

- [REDACTED]

- [REDACTED]

- [REDACTED]

- [REDACTED]

Unsold allowances from the forward-vintage auctions do come back into the auctions when those vintages become the then current-vintage.

## CALIFORNIA CAP AND TRADE

### OVERVIEW

The U.S. state of California enacted the Global Warming Solutions Act of 2006 (“AB32”) and put California into a leadership role in combating climate change. The legislature, however, did not prescribe the specific measure to achieve the climate goals set forth in AB32, namely reducing GHG emissions by approximately 30% to 1990 levels by 2020, and instead delegated such authority to the California Air Resources Board (“CARB”). CARB adopted Cap and Trade in 2010 as the backstop to achieve their emissions reductions goals, though other programs or complementary measures have been enacted including the Renewable Portfolio Standard (“RPS”) and the Low-Carbon Fuel Standard (“LCFS”), which will be discussed below.

California Cap and Trade has been a trend setter for climate action programs around the world. California held its first Cap and Trade auction in November 2012, after a 1-year delay, and has since held 17 auctions. Effective January 2014, California linked its program with Québec under the Western Climate Initiative (“WCI”). California and Ontario have announced plans to link in 2018. Additionally, California Cap and Trade is expected to be the mechanism to comply with federal regulations issued by the Environmental Protection Agency (“EPA”) known as the Clean Power Plan (“CPP”). The CPP is currently embattled in a legal challenge by various coal-producing states.

Recently, the California Cap and Trade has been mired by a massive oversupply of allowances. The initial caps were set too high and California’s complementary measures have been very successful. Additionally, California is still battling an outstanding legal appeal challenge from the California Chamber of Commerce which could shut down or alter the quarterly auctions. Earlier this year the legislature passed the extension of California’s climate goals (“SB32”) with target reductions of 40% by 2030 but failed to explicitly extend Cap and Trade as the means to achieve such goal. In the meantime, CARB has issued proposed regulatory amendments to Cap and Trade, including extending annual caps through 2030 and making other revisions that could have a significant impact to WCI Cap and Trade and, by extension, to Ontario Cap and Trade. It is still uncertain whether CARB has the authority to extend Cap and Trade without legislative approval.

These topics are very relevant for the future of Ontario Cap and Trade and will be discussed in more detail below.

### LEGAL UPDATE

#### **CalChamber v CARB & Morningstar... v CARB:**

The California Chamber of Commerce (“CalChamber”) filed an action in November 2012 just days before the first auction of emissions allowances (California Chamber of Commerce v. Air Resources Board, Case No. 43-2012-80001313). The lawsuit challenged CARB’s authority to “allocate to itself an increasing percentage of each year’s authorized emissions allowances and sell them at auction or through reserve sales to the highest bidder (17 CCR§§ 95870, 95910-95914.)” The lawsuit takes issue with the use of the revenues generated from the auction. The Governor’s 2012-13 appropriated up to \$500 million of the auction proceeds to offset the State’s general fund costs. This designation of the auction revenue, per the CalChamber petition, is tantamount to an unauthorized tax, which under California law requires a two-thirds vote from the legislature.

Morning Star Packing Company, et al. v. CARB, et al was filed on April 16, 2013 and raised substantially the same issues as the CalChamber lawsuit. On April 24, 2013, the court consolidated the Morningstar and CalChamber cases. On August 28, 2013, the Court rejected the challenges, holding that CARB had acted within its authority to design a market system for distributing allowances, and that auction payments are valid regulatory fees not subject to the two-thirds requirement. In March 2014, the petitioners filed their appeals with the California Court of Appeal.

As of the date of this report, the parties are awaiting the court to set a date for oral arguments. As the petitioners are not arguing against cap and trade but rather the government revenues raised in the auctions, an adverse ruling should not impact compliance



obligations or the cap and trade program, in general. The allowances could be freely distributed or the auctions could be structured to be revenue neutral, resolving a key argument in the lawsuit.

After waiting more than two years for an Oral Hearing date to be set by the Appeals Court, the plaintiffs earlier this year asked the court to grant “Calendar Preference” which technically would mean that the case would be heard faster due to some pressing damage being suffered by the plaintiffs. On April 7, 2016, the Court unexpectedly granted Calendar Preference to the case and then on April 8th, 2016 asked the parties in the case to respond to various questions in supplementary written briefs:

[REDACTED]

- [REDACTED]
- [REDACTED]

As of the date of this report, the parties are waiting on the court to set a date for oral arguments, despite the Calendar Preference being granted. [REDACTED]

[REDACTED]

[REDACTED]

Under any scenario it is not likely that this case is settled anytime soon and the legal uncertainty may stretch well into 2018 or 2019 no matter what the outcome at the Appellate Court.

## LEGISLATIVE CONCERNS AND SB32

On April 16, 2016, the California Legislative Counsel’s Office issued a letter which stated that the Governor and CARB did not have the authority to use AB32 to enforce Cap and Trade goals beyond the 2020 date in the original legislation. The legislators’ law office concluded “the plain language” of state law dictates that the state’s cap-and-trade program “may not be applied or used” after 2020, though officials in Gov. Jerry Brown’s administration have sometimes publicly ignoring the vexing legal questions affecting the flagship program’s future and have as we have seen above by the proposed regulations released in August 2016, have instructed CARB to proceed as if they have legal authority. This difference of opinion turned into a divisive fight between the California Legislature and the Governor’s Office, both controlled by the Democratic Party in California. The legislature further emboldened by the Legislative Counsel’s letter, passed two important pieces of legislation this summer at the end of the session in August. With these bills passed and signed by the Governor, the consensus between the two bodies now seems to be that legislation needs to be passed to authorize cap and trade beyond 2020.

SB32 and its’ companion bill AB197, set out in law the legal requirement to reduce emissions to 40% below 1990 levels by 2030, but importantly do not authorize cap and trade as the mechanism for reaching these goals. Additionally, AB197 can be interpreted as instruction for CARB to prioritize “direct emission reductions”, which could be interpreted as an alternative to cap and trade starting in 2021.

Since the passing of AB197, the Legislature, the Governor’s Office and even most recently the CARB chair, Mary Nichols have started to proclaim very loudly that without an explicit reauthorization of cap and trade through 2030 by a 2/3 majority in

the legislature, that under AB197, they must examine other alternatives. A 2/3 majority is required to forestall another lawsuit like the current Chamber lawsuit and the Governor has indicated that only a 2/3 majority will be acceptable and has even threatened that if the Legislature cannot pass the bill with a 2/3 majority that his last act in office at the end of 2018 will be to put all his efforts and political energies towards a ballot measure. Opinion polls seem to be broadly in favour of the Ballot Measure if it were ever launched [REDACTED]

## RECENTLY PROPOSED CAP AND TRADE AMENDMENTS

In the fall of 2015, CARB kicked off a public process to develop various regulatory changes. There are three distinct efforts to being addressed:

1. **2030 Scoping Plan Update** –The purpose of the Scoping Plan is for CARB to evaluate the various options that California could use to achieve the emission reduction targets first under AB32 (2020 goal) and subsequently under SB32 (2030 goal). Cap and Trade and LCFS were two of the programs chosen because of the first Scoping Plan in 2007-2008 and while the Scoping Plan was updated in 2014, CARB is updating the Scoping Plan earlier than required by AB32 to follow an Executive Order from the California Governor.
2. **2030 Regulation Update** – While the Scoping plan has yet to be completed and make the final determination of what programs are best suited to achieve California’s emission reduction goals, CARB has chosen to update the Cap and Trade regulations foreshadowing the continuation of this program as the likely choice.
3. **CPP Plan Compliance Plan** – CARB has worked extensively with EPA and other California Agencies to complete a thorough analysis of the CPP and has determined that the California Cap and Trade Program with some minor changes can accommodate compliance with the final version of the CPP. California became the first State to submit a State Plan to the EPA, though technically the CPP is currently under judicial stay by the Supreme Court and therefore the EPA cannot evaluate California’s plan.

As part of these three parallel efforts, on August 2, 2016, the CARB released its most comprehensive proposed regulatory changes since the Cap and Trade program was launched. The following is a discussion of the most significant regulatory changes and analysis of the likely impacts on the combined WCI Program, as it relates to Ontario, assuming linkage occurs as currently planned in 2018.

### Extend Emissions Caps through 2030:

CARB has proposed to continue reducing the Caps through 2031, though at a slightly faster rate than the current annual reductions. CARB considered reducing the starting point in 2021 to be at the expected emissions for 2021 which would have resulted in a non-linear step down from 2020, but decided instead to continue the same glide path for caps and instead put a greater number of allowances into the APCR to account for the projected emissions oversupply. The reductions from 2021 to 2030 will be linear at around 13.3 million tCO<sub>2</sub>e per year.

1. Starting in 2021, collapse the APCR from three price tiers into one price tier
2. Starting in 2021, the one APCR price tier would be a fixed \$60 over the ARP
3. Starting in 2018, Any unsold allowances that have remained unsold for 24 months would be removed from the Auction Holding Account (“AHA”) and put into the APCR

CARB has proposed formally through these regulatory changes that California accept and recommend formal linkage to Ontario through the WCI starting in 2018. CARB has evaluated the Ontario program and the enabling legislation and accompanying regulation and deemed them to follow the California requirements for linkage. CARB also proposed some new one-way linkage methodologies for future use, though at this point CARB would still need to present to the Board any such linkages and have them approved as being compliant with California law.

California has a very specific law, SB1018, that was passed in 2012 when Québec linkage was being evaluated that set out requirements for any linkage to the California Cap and Trade Program. The requirement set out in SB1018 were as follows: 1) The linked program has adopted program requirements for greenhouse gas reductions; including, but not limited to, requirements for offsets; that are equivalent to or stricter than those required by AB 32; 2) The State of California is able to enforce AB 32 and related statutes against any entity subject to regulation under those statutes, and against any entity located within the linking jurisdiction to the maximum extent permitted under the United States and California Constitutions; 3) The proposed linkage provides for enforcement of applicable laws by the linking jurisdiction of program requirements that are equivalent to or stricter than those required by AB 32; and 4) The proposed linkage shall not impose any significant liability on the State or any State agency for any failure associated with the linkage.



CARB expects to present sometime at the end of 2016 or early in 2017 a finding to the California Governor that linkage to Ontario satisfies all the requirements under SB 1018. Once the finding is presented to the Governor, the Governor's office is expected to declare within a few months that the linkage has satisfied the requirements under SB 1018 and that the linkage is legally permissible. Once this approval has been reached, the only remaining step to linkage would be a formal acceptance of such linkage by Ontario followed by formal linkage timeline set out by the respective regulatory agencies in California, Québec and Ontario.

**CPP Compliance Demonstration:**

CARB has proposed a series of modest changes to the regulation that would be made once the Judicial Stay on the CPP is removed. At such time, CARB would submit its State Plan to US EPA under the State Measures pathway and once approved by US EPA as compliant would then implement the package of changes to the regulations. The proposed changes would include: 1) Alignment of Cap-and-Trade Program compliance periods with CPP compliance periods, including a bridge period to link the two programs. 2) Requirements for all CPP affected EGUs to participate in the Cap-and-Trade Program. 3) Provisions setting interim mass targets and final mass targets for aggregate emissions from affected EGUs. 4) Provisions establishing federally enforceable backstop emissions standards.

[REDACTED]

**Allowance Allocation Methodology:**

CARB has proposed a series of changes to the freely allocated allowances that are given to Industrial emitters, Electrical Utilities and Natural Gas Utilities. These changes include: 1) Elimination of the transition assistance currently given to Industrial emitters, 2) Revaluation of the leakage allocations such that new benchmarks are used to avoid economic leakage of industrial output out of state, 3) Directly allocate purchased electricity allocations to Industrials directly rather than through the Investor Owned Utilities ("IOU") and Publicly Owned Utilities ("POU") so that industrials are allocated under a consistent methodology directly by ARB regardless of where they get their electricity service 4) Modify and update allocations to Electric Utilities, both POUs and IOUs to account for their expected emission levels in 2021 as a new baseline for the 2021 to 2031 period and then reduce such allocations by a consistent factor through 2031. 5) remove the RPS Adjustment and replace it with an allocation of allowances 6) Require Natural Gas Utilities to return proceeds from allowance sales to customers within 10 years and accelerate the schedule under which their consignment percentages approach 100%.

[REDACTED]

## COMPLEMENTARY GHG REDUCTION POLICIES

### Renewable Portfolio Standard (“RPS”):

California has very aggressive mandates for renewable energy, established under the RPS program in 2002 and later expanded/increased in 2011 and, again, in 2015. It is the most ambitious standard for renewable energy in the U.S. with a 33% target by 2020 and a 50% target by 2030.

The RPS has progressively become more focussed on developing renewable resources only in-state. Retail sellers of electricity must procure 50% of their electricity from renewable resources by 2030, with a significant portion coming only from electricity generators located in-state. Most utilities are well on their way to achieving the initial RPS target of 33% in 2020. Achieving the 2030 target of 50% will result in approximately 5-6 million tCO<sub>2</sub>e less per year by 2030.

### Low-Carbon Fuel Standard (“LCFS”):

California’s LCFS program began in 2010. It is a performance-based regulation that requires sellers of transportation fuels (e.g. oil companies, fuel distributors and refiners) to reduce the average carbon intensity (CI) of the transportation fuel mix by at least 10% by 2020. The standard is back-loaded with increasing stringency in later years. This regulation contributes to California’s overall GHG emission reduction goals.

Regulated parties have several options to meet the standard. They can produce their own low carbon fuels, buy fuels from producers to sell on the market, purchase credits generated by others, or use some combination of these strategies. Potential low carbon fuel technologies include biofuels from waste and cellulosic materials, natural gas, electricity used in plug-in vehicles, and hydrogen used in fuel cell vehicles.

## EPA CLEAN POWER PLAN

### Overview:

The Clean Power Plan (CPP) was introduced by the U.S. EPA, under President Obama’s Climate Action Plan, and finalized on August 3, 2015. The CPP aims at reducing emissions from existing Electric Generating Units (EGUs) under the authority of 111(d) of the Clean Air Act with a goal of achieving a reduction in power sector emissions of 32% from 2005 levels by 2030. In short, the CPP sets forth a national carbon emissions reduction target. The EPA identified various flexibility mechanisms to assist states in formulating plans to comply with the national standards, which included participation in regional cap and trade programs.

**California Impact:**

It is widely believed that the “spirit” of California’s Cap and Trade is compliant with the CPP regulations. In fact, California’s existing emissions reduction targets are expected to be lower than those set forth under the CPP. Such an approach, however, may face regulatory scrutiny or even further lawsuits because California’s emissions reductions under Cap and Trade come from across the economy but the EPA rules are specific electric generating units (“EGUs”) only, beyond which the EPA does not have authority under the CPP. California may be required to demonstrate emissions reductions stemming directly from the affected EGUs in the power sector and meet the “letter” or legal enforcement of the proposed regulation. California may also be able to comply with the CPP under its aggressive RPS mandates, which *are* specific to the electricity sector.

[REDACTED]

**Legal Challenges to CPP:**

In Fall of 2015, multiples parties and states filed a lawsuit against the EPA to block implementation of the CPP, challenging EPA’s authority to regulate, among other arguments. In February 2016, the Supreme Court issued a stay of the CPP while legal proceedings play out in the lower Circuit Court.

Oral arguments were heard in the Circuit Court on September 27<sup>th</sup>, 2016 and an initial decision is expected by January. The panel of judges included 10 total and 6 were democratic appointed and 4 were republican, which analysts suggest bodes well for the EPA and chances of the stay being lifted. Regardless of the outcome, however, the losing party is likely to appeal the decision to the Supreme Court and a final decision may not come until late 2017. Additionally, the U.S. Presidential candidates have vocalized opposing views on the future of the CPP, so that fate of the program may lie in the next presidential election in November, 2016.<sup>7</sup>

<sup>7</sup> <https://www.brookings.edu/blog/order-from-chaos/2016/06/09/the-presidential-candidates-views-on-energy-and-climate/>

## QUÉBEC CAP AND TRADE

### MARKET OVERVIEW

Québec launched a Cap and Trade program beginning in 2013 and officially linked with California in January 2014. The program structure and rules are substantially like California and Ontario. Compared to California and Ontario, Québec's Cap and Trade market is relatively small, representing less than 12% of the total potential combined market. However, Québec's linkage with California is currently the largest cross-border carbon trading market since the launch of the European Union Emissions Trading Scheme.

While Québec is regulating less than 90 facilities in the Province, Ontario is expected to place caps on over 300. Ontario would represent over 26% of a combined market with Québec and California. Québec's power sector is 97% hydro, so it is unable to achieve the lower cost "fuel-switch" opportunities. Ontario is in a similar situation having recently become the first jurisdiction in North America to shut down its entire coal fleet.

### LINKAGE WITH CALIFORNIA

California and Québec officially linked programs in January 2014 but the first joint auction was postponed until November 2014. Québec's emissions cap is far more aggressive than California's, reducing GHG emissions 20 percent below 1990 levels by 2020 compared to California's target of reaching 1990 levels by 2020. Also, because Québec's power sector is largely hydropower based, it has very few opportunities to reduce emissions by switching to low carbon fuels. Without the linkage to California, Québec would face a very high marginal cost of abatement. Ontario is similarly situated and would likely, over time, experience dramatic price increases absent a linkage to the broader programs.

### SUPPLY AND DEMAND

The first compliance period covered about 80 facilities in Québec from the industrial and power sectors. In 2015, distribution of fossil fuels was also added under the caps and the total program covers about 85% of GHG emissions in Québec. [REDACTED]

[REDACTED] Additionally, Québec's mechanism for dealing with unsold allowances, like Ontario, is different from California in that unsold Québec allowances are not required to be re-offered at auction.

Analysts predicted that if Québec was unable to link with California; allowance prices may have reached \$80 by 2018. Similarly, the WCI's own analysis predicts an unlinked Québec allowance price of roughly double an unlinked California market allowance.

## FUNDAMENTAL SUPPLY & DEMAND OF CAP AND TRADE

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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

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

[REDACTED]

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

ALPHA INCEPTION LLC

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ALPHA INCEPTION LLC

[REDACTED]

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

[REDACTED]

[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]

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

ALPHA INCEPTION LLC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

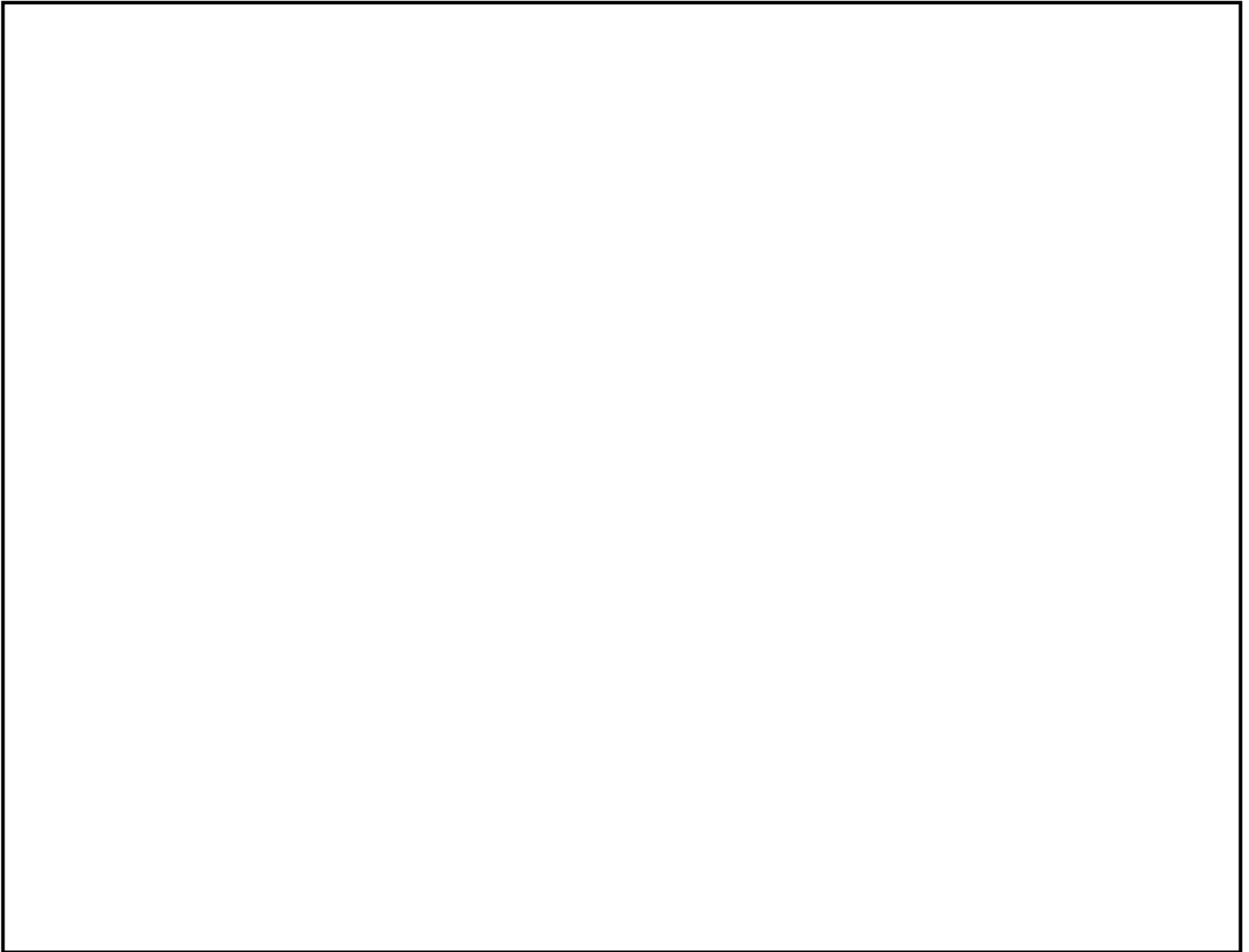
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]





[REDACTED]

[REDACTED]  
[REDACTED]

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

[REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]

ALPHA INCEPTION LLC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

• [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

• [REDACTED]

[REDACTED]

[REDACTED]

ALPHA INCEPTION LLC

[REDACTED]

[REDACTED]

• [REDACTED]

[REDACTED]

• [REDACTED]

[REDACTED]

[REDACTED]

• [REDACTED]

[REDACTED]

ALPHA INCEPTION LLC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

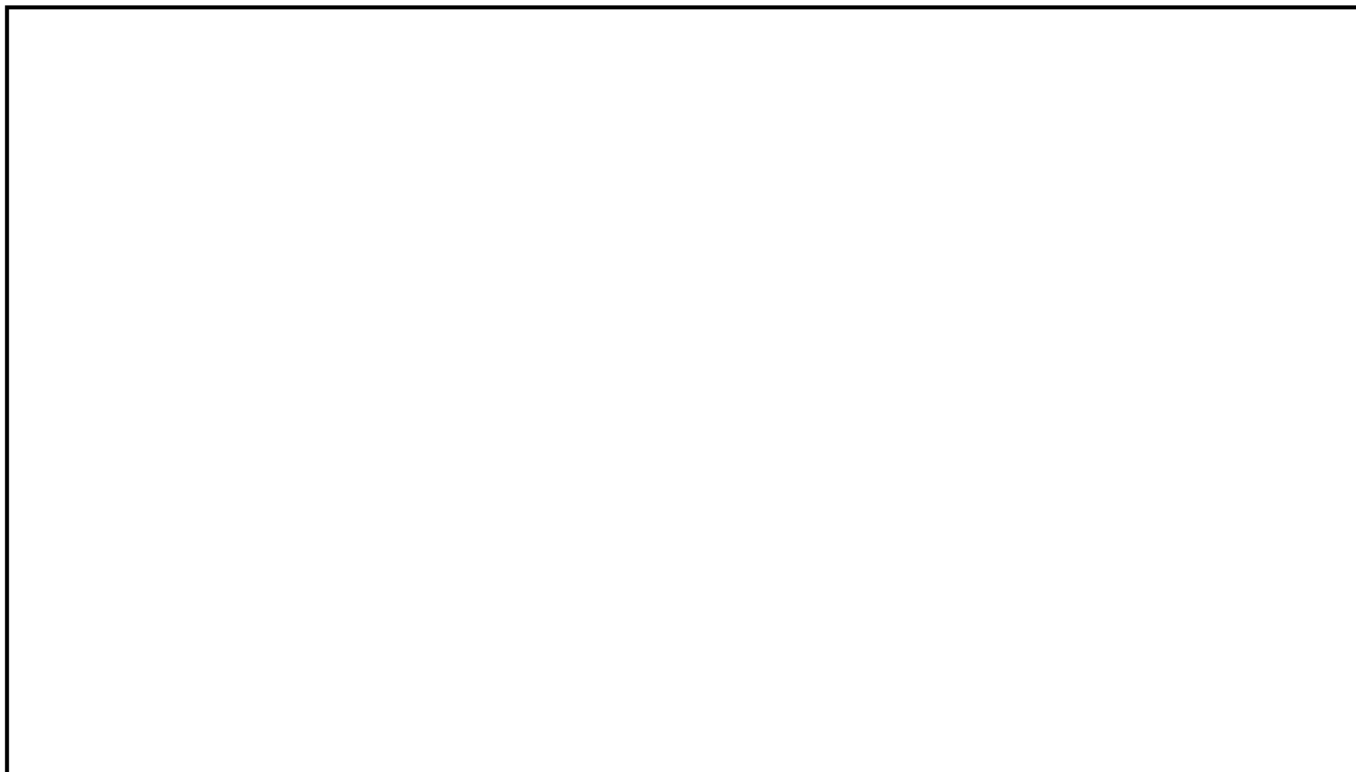
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

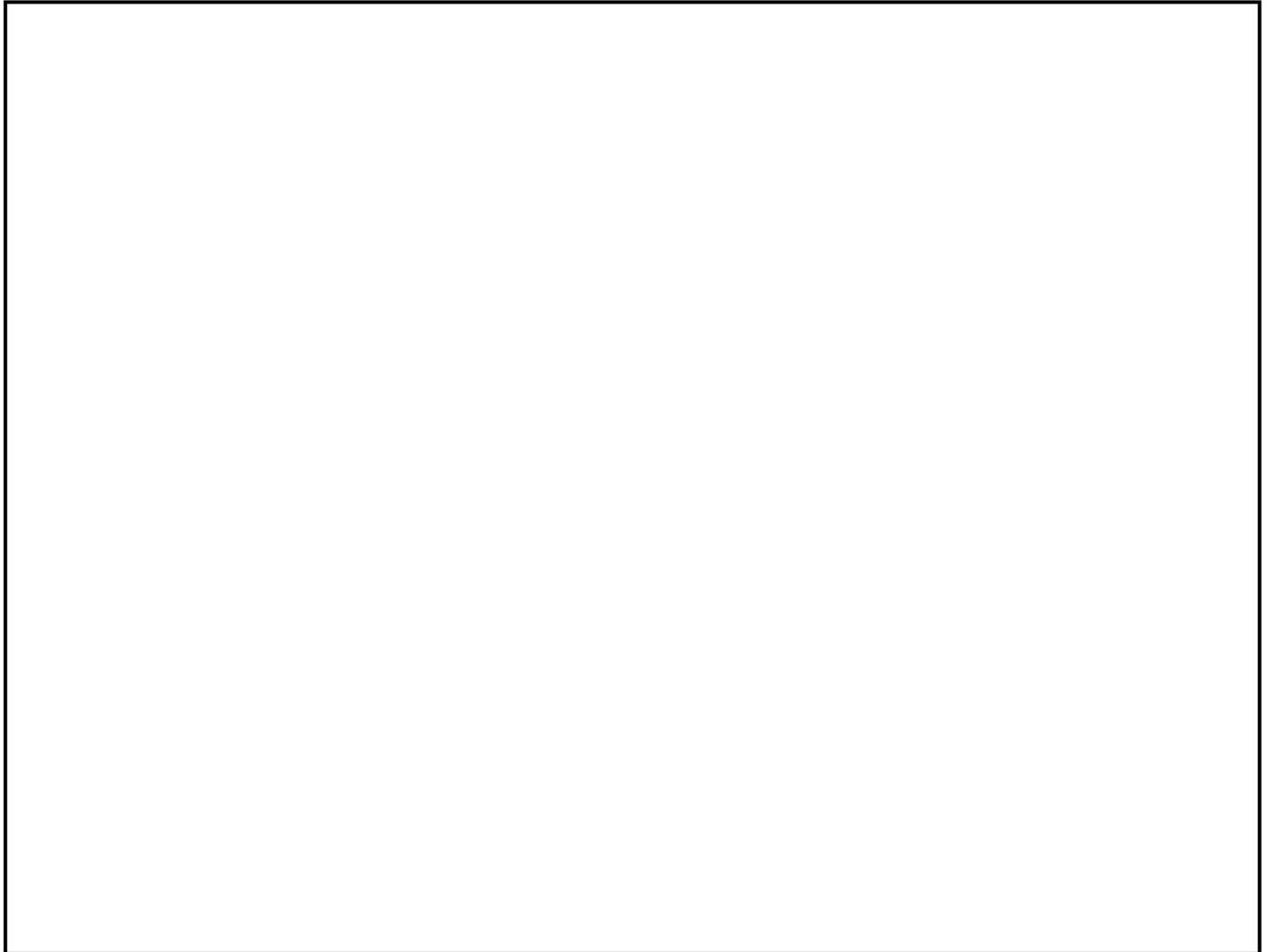
[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

ALPHA INCEPTION LLC

[REDACTED]

[REDACTED]

## APPENDIX

### AUCTION TRAINING

As of the date of this report, no training or guidance has been provided that is specific to Ontario Cap and Trade. However, as Ontario Cap and Trade will utilize the same auction platform as the WCI Cap and Trade, the training materials below can be used to provide preliminary auction training for personnel that will be participating in the future Ontario Cap and Trade auctions or the WCI Cap and Trade auctions. When Ontario issues further guidance on auction participation, AI recommends reviewing fully as differences between the formats may exist.

Each quarterly auction will be conducted using an electronic, internet-based auction platform that bidders use to apply to participate in an auction and to submit bids in a single-round, sealed-bid auction format.

#### Auction Notice:

Auction notices are posted to the jurisdiction webpages 60 days prior to each auction. Such notices will provide key information such as eligibility criteria, auction format, reserve prices, and volumes to be offered in the Class 1 or Current auction and Class 2 or Forward/Advance auction. Additionally, detailed auction requirements and instructions for registration generally accompany the auction notice.

The auction notice will also contain a General Auction Schedule as follows:

Activities	Auction Time Period	Time – Pacific Time (PT) / Eastern Time (ET)
Auction Notice released/ Auction application period opens	60 days prior to auction	12:00 PM (Noon) PT / 3:00 PM ET
Deadline for CA entities to make changes in auction application information and submit all hard copy documents accompanying these changes	No later than 30 days prior to auction	
Deadline for CA entities to complete or provide an update to the Auction Application Attestation Disclosure	No later than 30 days prior to auction	
Auction application period closes	30 days prior to auction	8:59 PM PT / 11:59 PM ET
All bid guarantees due to Financial Services Administrator	12 days prior to auction	No later than 3:00 PM PT / 6:00 PM ET
Auction participants approved and Account Representatives (PAR and AARs) notified	2 business days prior to auction	
Auction Exchange Rate (FX Rate) and Auction Reserve Price Determined and Posted	1 business day prior to auction	
Auction held	Date provided in Auction Notice	Bidding window 10:00 AM – 1:00 PM PT / 1:00 PM – 4:00 PM ET
Joint Auction Summary Results Report released	5 business days after auction	12:00 PM (Noon) PT / 3:00 PM ET
Auction certified Auction results available to qualified bidders	5 business days after auction	12:00 PM (Noon) PT / 3:00 PM ET



# ALPHA INCEPTION LLC

Financial settlement in cash due to Financial Services Administrator	7 days after certification of the auction and availability of entity results	No later than 3:00 PM PT / 6:00 PM ET
Distribution of auction proceeds completed by	9 business days after financial settlement is due	
Transfer of allowances into CITSS Accounts	9 business days after financial settlement is due	
California and Québec Post Joint Auction Public Proceeds Reports released	9 business days after financial settlement is due	
Earliest date for bid guarantee expiration	26 days after auction	

Source: CARB and MDDELCC

## Auction Reserve Price:

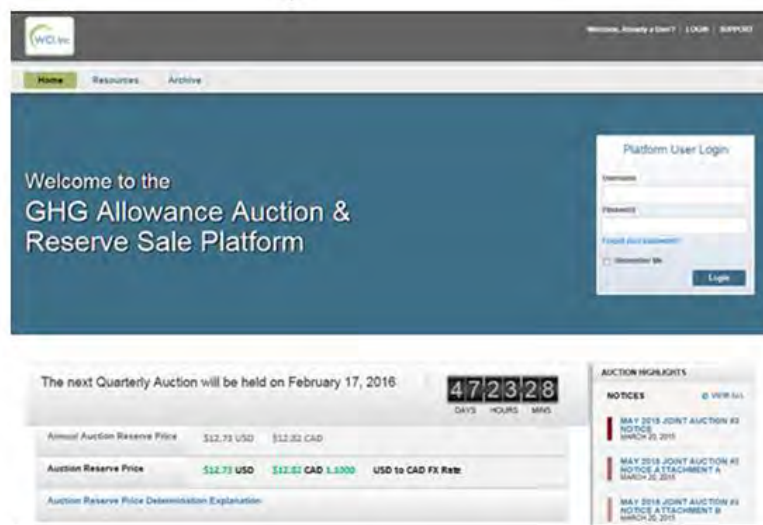
The annual ARP for auctions (Class 1 and Class 2) held in Ontario in 2017 and forward will be set by the WCI Cap and Trade, regardless of whether Ontario ultimately links with California and Québec. The ARP is announced each December prior to the calendar year in which it will take effect, though, where the ARP is in USD it shall be converted into CAD using the Bank of Canada exchange rate the day prior to the auction. It is calculated as the higher of California and Québec's respective ARP for the previous year increased by 5% plus the rate of inflation, which could be positive or negative. The ARP is converted into Canadian dollars ("CAD") using an exchange rate published the day prior to an auction.

In 2017, Ontario entities will submit bids in Canadian dollars and, it is expected, in 2018 and future auctions that are linked with WCI, Ontario entities will have the option to submit bids in Canadian dollars or U.S. dollars.

<b>Auction Exchange Rate</b>	<b>1.1000</b>
California Annual Auction Reserve Price (USD)	<b>12.73</b>
California Annual Auction Reserve Price (CAD Value)	<b>14.00</b>
Québec Annual Auction Reserve Price (CAD)	12.82
Québec Annual Auction Reserve Price (USD Value)	11.65

- The bolded values in the table above indicate that in this example the California Annual Auction Reserve Price will be the Auction Reserve Price (\$12.73 USD and \$14.00 CAD).
- The Auction Exchange Rate of 1.1000 is for example purposes only and is not representative of the actual anticipated exchange rate for any auction.

Source: CARB and MDDELCC



Source: WCI, Inc

### **Applying to Participate in an Auction:**

A participant must have an approved CITSS account before applying to participate in an auction. Additionally, individuals must be approved as Primary Account Representatives (“PAR”) or Alternate Account Representatives (“AAR”). Only the PAR or AAR can bid on behalf of the participant or download and save auction reports. Steps for a PAR or AAR to apply to participate in an auction are below:

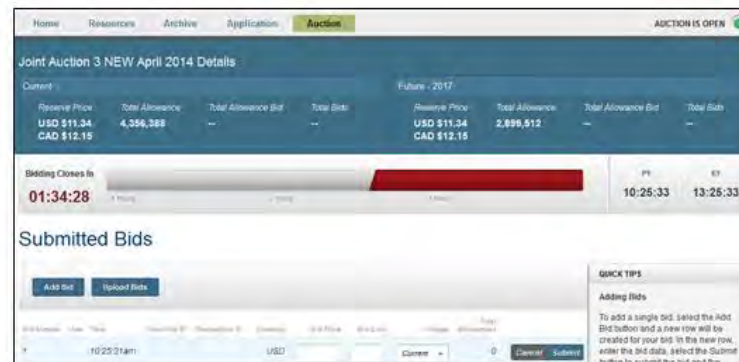
1. Applications or confirmation of intent to participate must be submitted at least 30-days prior to each auction by selecting “Auction Participation” box in CITSS to indicate the interest in participating in the auction. First time participants will be required to provide information on the following items whereas previous participants will only need to provide updates if information has changed since the previous auctions, such as changes to corporate structure or mergers.
  - a. Information submitted in the process of obtaining a CITSS account
    - i. Corporate identity, ownership, and capital structure
    - ii. Existence of any direct or indirect corporate associations
    - iii. An allocation of the purchase limit and holding limit among associated entities, if applicable
  - b. Bid guarantee form and return instructions
  - c. An attestation response, if applicable, dealing with disclosures and auction participation
2. The PAR or AAR will receive an email from the auction administrator with a link to activate the auction account.
3. Must submit a financial bid guarantee in an approved form and by the deadline designated in the auction notice. Instructions on submitting bid guarantees will be provided in the auction notice.
4. Entities having successfully applied to participate and having been successfully approved to participate will receive confirmation emails from the auction administrator.

### **Form and Manner of Submitting Bids:**

Participants will submit bids manually or through an upload of a pre-defined excel template during the auction bidding window. The Class 1 and Class 2 auctions will occur simultaneously at the date and time identified in the auction notice. Bidding in the auction is as follows:

1. Auction participants submit a bid which includes the vintage of the allowances, the number of bid lots (1 lot = 1,000 allowances), the bid currency, and the bid price.

- To bid for allowances in the Class 1 auction, the bid vintage is selected as “Class 1”. To bid for allowances in the Class 2 auction, the bid vintage is selected as “Class 2”.
- Bids are entered in whole cents.
- Auction participants are allowed to submit as many bids as they wish during the bidding window.
- Auction participants can revise or withdraw confirmed bids at any time during the bidding window.
- Once the bidding window has closed, no further bids may be entered and no changes to bids can be made.



Source: WCI, Inc

### **Bidding Limitations:**

The bidding limitations below must be strictly adhered to in order to ensure non-violation of auction rules. In some jurisdictions, such as California, enforcement actions including monetary penalties have been imposed for bidding limitations violations.

- Auction Reserve Price** – no bids will be accepted that are below the auction reserve price.
- Bid Guarantee** – Bidders submit one-single bid guarantee for all auction bids and potential purchases in the Class 1 and Class 2 auctions. The bid guarantee amount should be equal to the maximum value of a set of bids. An example of how the bid guarantee must be calculated is below:

Class 1			
A	B	C	D
Bid Price:	Bid Volume:	Cumulative Bid Volume:	Spend:
\$ 21.25	1,000,000	1,000,000	\$ 21,250,000
\$ 19.15	750,000	1,750,000	\$ 33,512,500
\$ 18.99	500,000	2,250,000	\$ 42,727,500
		Maximum Value	\$ 42,727,500
Class 2			
A	B	C	D
Bid Price:	Bid Volume:	Cumulative Bid Volume:	Spend:
\$ 20.50	250,000	250,000	\$ 5,125,000
\$ 20.00	250,000	500,000	\$ 10,000,000
\$ 19.50	250,000	750,000	\$ 14,625,000
\$ 19.00	250,000	1,000,000	\$ 19,000,000
		Maximum Value	\$ 19,000,000
		Class 1 + Class 2 Max Value:	\$ 61,727,500

Source: Alpha Inception

Where:

“A” represents a different bid price

“B” is a different bid volume at the specified bid price

“C” is the cumulative bid volume at a specified bid price. Note that bid volumes are cumulative so if the auction clearing price is the lowest bid price submitted, all volume bid at prices above the ACP will be awarded.

“D” is the dollar amount that would be spent should the auction clear at the specified bid price, awarding all volume bid at that price or higher.

The total amount of the bid guarantee should be equal to the maximum possible value of bids in both the Class 1 and Class 2 auctions.

3. **Purchase Limits** - The purchase limit for emitters is 25 percent of the allowances offered for auction and the purchase limit for other participants is 4 percent of the allowances offered. Related entities that are part of a direct corporate association must allocate shares of the purchase limit amongst themselves. The joint purchase limit for corporate associations is the same as that of a single entity.
4. **Holding Limits** - Holding Limits are imposed upon all Cap and Trade participants, and apply across affiliated entities. A holding limit is the maximum number of allowances, including strategic reserve allowances, and early reduction credits that can be held across all CITSS accounts (holding accounts and compliance accounts) for a participant or group of related participants. Offsets do not fall under a holding limit. Exemptions exist for capped participants who deposit allowances into their compliance accounts. The amount of the exemption is approximately equal the participant’s accumulated compliance obligation through the end of the year that the exemption is calculated. For example, in 2017 a capped participant’s exemption amount would be equal to 1-years’ worth of emissions and in 2018 the exemption would be equal to 2-years’ worth of emissions.

The calculation of the Holding Limit applies 1) to the current vintage year and all prior vintage years collectively and 2) to each forward vintage year. The calculation is as follows:

$$HL_j = 2,500,000 + 0.025 \times (C_j - 25,000,000)$$

$HL_j$  = the limit on emission allowances with vintage year j that are held in the cap and trade accounts during a year. Where year j is the current vintage year, the HL shall apply to current vintage allowances and all prior years, and

$C_j$  = the number of Ontario emission allowances created for year j.

The Holding Limit is imposed upon all market participants to prevent market abuse and hoarding of allowances. Holding Limits are viewed similarly by each of the WCI jurisdictions, however, the calculation is based on the combined annual budgets and is not simply the summation of the holding limits applied to each program individually. Figure 5 below shows the calculated Holding Limits for Ontario and also the WCI Cap and Trade with and without an Ontario Linkage.

Figure 18: CALCULATED HOLDING LIMITS NOT INCLUDING EXEMPTIONS IN ONTARIO AND WCI - TONNES

	2017	2018	2019	2020
Ontario	5,433,300	5,286,000	5,138,900	4,991,700

WCI (w/o Ontario)	12,662,000	12,306,500	11,953,750	11,598,500
WCI (w/ Ontario)	N/A	15,717,500	15,217,650	14,715,200

Source: Alpha Inception, CARB, MOECC, September 2016

Submitted bids that contain bid quantities in excess of the purchase limit, holding limit, or that have a maximum value in excess of bid guarantee will be rejected by the auction administrator in bundles of 1,000 allowances, until all bid limitations are met.

#### **Auction Conduct:**

California and Québec have strict regulations regarding the non-disclosure of confidential information related to auction participation, including:

- Intent to participate, or not participate, at auction, auction approval status, and maintenance of continued auction approval;
- Bidding strategy;
- Bid price or bid quantity information;
- Information on bid guarantees provided to the financial services administrator.

Additionally, those regulations require that any entity participating in an auction that has retained the services of a consultant or bid advisor regarding auction bidding strategy must ensure the following:

- The entity must ensure against the consultant or advisor transferring information to other auction participants or coordinating bidding strategy among participants;
- The entity will inform the consultant or advisor of the prohibition of sharing information to other auction participants and ensure the consultant or advisor has read and acknowledged the prohibition under penalty of perjury; and

#### **Auction Clearing Price:**

The Auction Administrator will rank qualified bids from all bidders from the highest to the lowest. Allowances will be awarded to bidders, beginning with the highest bid price and moving to successively lower bid prices, until the entire supply of allowances is exhausted or all qualified bids have been filled. Allowances at auction are awarded to the highest bidders first and to subsequent lower bidders until all of the volume available has been awarded. The auction settlement price or Auction Clearing Price (“ACP”) is the price at which all the volume available has been awarded. All winning bidders pay the same price, the ACP, even when they may have submitted bids at higher prices. An example of auction clearing mechanism is provided below:

Figure X: EXAMPLE AUCTION BIDS RANKED HIGH-LOW AND SETTLEMENT PRICE

Bidder	Bid Price	Lots	Allowances	Cumulative Bid Allowances	Allowances Awarded at ACP
A	\$35.00	3,000	3,000,000	3,000,000	3,000,000
B	\$27.15	2,500	2,500,000	2,500,000	2,500,000
A	\$30.00	1,500	1,500,000	4,500,000	1,500,000
C	\$25.39	2,000	2,000,000	2,000,000	2,000,000
C	\$21.37	1,200	1,200,000	3,200,000	1,000,000



<i>Auction Clearing Price ("ACP") = \$21.37</i>					
<i>Assumes 10,000,000 allowances offered</i>					
A	\$20.95	4,000	4,000,000	8,500,000	0
B	\$18.25	5,025	5,025,000	7,525,000	0

Source: Alpha Inception

Under the example provided above, the auction offered 10,000,000 tonnes and the settlement price was \$21.37 per tonne, representing the highest price at which all allowances have been bid, also known as the Auction Clearing Price ("ACP"). Winning bidders pay the ACP for all allowances won in the auction. Bids below the ACP would not be awarded. Winning bids would be fulfilled as follows:

**Bidder A** won a total of 4,500,000 allowances at \$21.37 per allowance

**Bidder B** won a total of 2,500,000 allowances at \$21.37 per allowances

**Bidder C** won a total of 3,000,000 allowances at \$21.37 per allowances

#### **Auction Results:**

Following the posting of public auction results, representatives of qualified bidders will be able to view and download the entity's auction results in the auction platform. Any excess financial bid deposit, if applicable, will be returned to the participating entity in accordance with the schedule in the auction notice.

Allowances that have been awarded will be transferred into winning bidders CITSS accounts in accordance to the schedule in the auction notice.

AI recommends reviewing the Ontario guidance and training documents, when available, to ensure the EGD complies with any other specific requirements outlined by the MOECC.

The attached Exhibit C, Tab 1, Schedule 1, Appendix B contains the covering page and pages 4 and 5 of 35 only. All other pages of this document remain strictly confidential.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

STRICTLY CONFIDENTIAL

---

**ENBRIDGE GAS DISTRIBUTION, INC. (EGD)**

---

CARBON STRATEGY REPORT

---

ALPHA INCEPTION LLC

*November 10, 2016*

STRICTLY CONFIDENTIAL



## Ontario Carbon Strategy Report

### INTRODUCTION

Alpha Inception (AI) has been engaged by Enbridge Gas Distribution, Inc. (EGD) to conduct analysis of the Ontario and Western Climate Initiative (WCI) Cap and Trade programs and to conduct independent analysis of multiple procurement strategies that could be considered in a Cap and Trade compliance plan. AI's vast experience in environmental markets and qualitative and quantitative analytic abilities qualify it to provide such analysis.

AI provided the Carbon Market Report, which included key observations, such as analysis of the market fundamentals of supply and demand for allowances in each of the jurisdictions, and an overview and analysis of the regulatory and market environments. The Carbon Strategy Report is a complement to the Carbon Market Report, relying upon such analysis to provide the basis for the strategic recommendations contained herein. AI has independently evaluated multiple strategic options and provides this analysis for discussion and consideration.

This report is strictly confidential as it contains auction confidential information as this term is defined by the Ontario Energy Board (OEB). AI understands that EGD may, at its sole discretion, file this report with the OEB though EGD shall in no circumstance disclose to AI its internal analysis of these recommendations or any details concerning the confidential strategy that is ultimately pursued by EGD except whereby such information is disclosed publicly or through regulatory filings.

### ALPHA INCEPTION

Since early 2012, Alpha Inception has advised Utilities, Independent Power Producers, Asset Developers, Industrials, and Financial Institutions on executed transactions, business development, and commodity hedging strategies across various North American environmental markets, including Carbon Emissions Trading programs (Western Climate Initiative and the Regional Greenhouse Gas Initiative), Renewable Energy Credits (RECs), offsets and other energy-related environmental products. With a combined 25+ years of relevant experience at market leading firms such as Goldman Sachs and Macquarie Bank, and a broad network of market participants, Alpha's Senior Officers represent a best-in-class commercial team with a proven capability to develop and execute successful strategies.

Andre Templeman founded Alpha Inception in 2012. He has over 15 years of experience in commodity structuring, trading and origination with Macquarie Bank, Goldman Sachs, Duke Energy and Iberdrola Renewables. He has developed, built and led origination businesses while at Macquarie and Goldman Sachs. He has extensive experience developing and executing innovative hedge structures for end users with a specific focus on renewables and natural gas-fired power plants. Andre holds an MBA from the Ivey School of Business at the University of Western Ontario and a BA from York University.

Andre has been deeply involved in the Carbon and Renewable markets as they have emerged from a regulatory concept to full-fledged commodity markets and is consulted frequently by regulators, governments and regulated market participants. Alpha Inception is one of the leading consulting firms in trading, investment and compliance cost management in California and Quebec's Cap and Trade Program, RGGI, and other environmental and related markets.

### PORTFOLIO OVERVIEW

## ENBRIDGE GAS DISTRIBUTION

Enbridge Gas Distribution, Inc. (EGD) is Canada's largest gas distribution utility and serves over two million natural gas customers across central and eastern Ontario. EGD is a rate-regulated utility that distributes and sells natural gas in the residential, commercial, and industrial markets. As historic emissions reductions in Ontario have resulted from the phase out of Ontario's coal-fired power plants over the years, future reductions under Ontario's Cap and Trade will come from energy

efficiency improvements, transportation fuels, and from natural gas consumers. EGD is responsible for emissions of its customers as well as for its own facilities and operations.

EMISSIONS FORECAST

A forecast for 2017 emissions was provided by EGD consistent with the Cap and Trade framework provided by the Ontario Energy Board (OEB) and the Ontario Ministry of Environment and Climate Change’s (MOECC) Guideline for Quantification, Reporting and Verification for GHG Emissions. EGD is responsible for customer-related emissions in addition to its own facility emissions. The 2017 forecast provided by EGD is summarized below:

Figure 1: FORECAST CUSTOMER-RELATED AND FACILITY EMISSIONS, 2017

2017 Customer-related emissions (tCO2e):	20,907,621
2017 Facility emissions (tCO2e):	229,145
Total Projected Emissions (tCO2e):	21,136,767

Source: Enbridge Gas Distribution, Inc

At approximately 21,000,000 tCO2e per year, EGD’s customers represent one of the largest group of emitters under the Cap and Trade program. EGD’s customer-related portfolio shows that 80% of its emissions come from residential, commercial and institutional customer segments, with smaller entities, with less than 25,000 tCO2e annually, collectively responsible for 85% of EGD’s total emissions<sup>1</sup>. Large Final Emitters (LFEs), above 25,000 tCO2e annually, will purchase their own allowances and have been excluded from the forecast. EGD is responsible for the allowance purchases of Small Emitters (between 10,000 – 25,000 tCO2e annually) unless such entities voluntarily opt-in to the Cap and Trade program to cover their own emissions obligations. Small Emitters who opt-in to the Cap and Trade can apply for free distributions of allowances. Voluntary participants known to EGD as of October 7th, based on a list of participants received from MOECC, have also been excluded from the forecast.

The risk of customers migrating from EGD’s responsibility to self-responsibility may lead to future variability in emissions obligations for which EGD is responsible, though this is expected to be small in the earlier years of Cap and Trade, it may potentially grow larger as the program progresses to later years.

AI did not conduct any analysis of EGD’s emissions abatement opportunities or its internal Marginal Abatement Cost Curve (MACC), though given the nature of the industry, abatement opportunities are expected to be limited. The greatest risk of deviations from the above forecast include customer migration and energy efficiency improvements.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

<sup>1</sup> EB-2015-0237 Natural Gas Market Review, January 2016

## COMPLIANCE OPTION ANALYSIS AND OPTIMIZATION OF DECISION-MAKING

1. Enbridge provided an overview of its Compliance Plan in the previous exhibit (Exhibit C, Tab 1, Schedule 1). However, this exhibit provides more in-depth discussion and analysis on why the Company landed on its particular proposed strategy for 2017.

## DESCRIPTION OF COMPLIANCE OPTIONS

2. AI provides descriptions of the compliance instruments available to Enbridge in the Carbon Market Report, which is included at Exhibit C, Tab 1, Schedule 1, Appendix A, on page 6 in the section titled "Compliance Instruments Under Ontario Cap and Trade".
3. Detailed discussion of the compliance instruments included in this 2017 Compliance Plan is provided in the sections below.

### Allowances

4. An allowance represents the authorization for a capped participant – which includes large final emitters, natural gas and transportation fuel distributors and electricity importers – to emit one tonne of carbon dioxide equivalent ("tCO<sub>2</sub>e"). The total volume of allowances in the Cap and Trade market, made available by the Ministry of the Environment and Climate Change ("MOECC"), is equal to the annual greenhouse gas ("GHG") emissions cap for 2017. The Ontario cap is reduced by approximately 4% annually. Allowances can be obtained through i) submitting applications to the MOECC for free distribution, ii) purchase at quarterly auctions

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

administered by the MOECC, iii) purchase from the MOECC through strategic reserve sales, which operate similar to the quarterly allowance auctions, iv) purchase on the secondary market, and v) purchase from other Cap and Trade participants. In the Regulation it is outlined that the natural gas utilities would not be eligible for free distributions, and therefore all allowances required by Enbridge to meet its compliance obligation must be purchased from one of the sources outlined above.

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

Table 1: [REDACTED]

TABLE DELETED

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

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

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Table 2: [REDACTED]

TABLE DELETED

[illegible]

\_\_\_\_\_

\_\_\_\_\_

[illegible][illegible]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

---

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

Allowances – Secondary Market

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



17. AI discusses ICE at length<sup>4</sup>, defining the exchange as “an electronic trading platform that offers access to regulated future exchanges, global OTC markets and clearinghouses in North America and Europe.” AI also identifies ICE as “the most successful and liquid exchange platform for California Carbon Allowances (“CCA”), including futures and options.” Enbridge frequently accesses ICE in its day-to-day natural gas trading activities and is investigating its carbon market interface.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### Offsets

19. An offset credit is similar to an allowance in that it can be retired to satisfy obligations under the Regulation. Similarly, one offset credit is equal to one tCO<sub>2</sub>e. Offset credits are created through a verified reduction or absorption of GHG emissions in a sector of the economy not covered by the Cap and Trade program. The reduction must demonstrate “additionality”, the concept that the GHG reductions would not have occurred without the payment for the offset and would not have occurred under a business-as-usual scenario.

---

<sup>4</sup> Exhibit C, Tab 1, Schedule 1, Appendix A, AI Market Report, page 16

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

20. The need for verification of offset credits presents an “invalidation risk”, non-existent in the use of allowances. This represents the risk that offset projects may at some point after they are issued be found to have not reduced the stated GHG emissions, and offset credits may be rescinded by the issuing body. Invalidation risk for Ontario offset credits is dependent on how the compliance instruments are defined in the Ontario offset regulation. At the time of preparing this evidence, the MOECC has not released the regulations regarding offsets and offset protocols.
21. Under the Ontario Cap and Trade Regulation, Enbridge is permitted to use offsets to cover a maximum of 8% of its annual compliance obligation. Given the uncertainty around Ontario’s offset regulation, the potential availability of offsets is difficult to approximate as it remains unclear if any offset credits will be available in Ontario in 2017.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

APPLICATION OF GUIDING PRINCIPLES AND RATIONALE FOR STRATEGY

[REDACTED]

Table 3: [REDACTED]

TABLE DELETED

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

### MARGINAL ABATEMENT COST CURVE

33. Enbridge understands that the Board will provide a ten-year marginal abatement cost curve (“MACC”) to the utilities in mid-2017, which will be updated at the beginning of each three-year compliance period. As the MACC is not yet available to Enbridge, it was not used in consideration of abatement opportunities for the 2017 Compliance Plan. Enbridge may seek to establish its own MACC or similar analysis for its unique facility-related or customer-related abatement initiatives as appropriate.

### ABATEMENT ACTIVITIES

34. On page 6 of the Framework the Board lists a number of Potential GHG Abatement Measures that the utilities may undertake to meet their compliance obligations, as captured in Table 4 below.

Table 4 – Customer and facility-related emission abatement opportunities

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	Facility and customer emissions

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

35. Enbridge is committed to a diverse portfolio of compliance options which will in due course include both customer and facility related abatement initiatives.

Customer-Related Abatement

36. In 2017, Enbridge's sole customer-related abatement activity is driven by home energy retrofits which are incremental to currently approved DSM programming and which were funded by the government through the Green Investment Fund ("GIF"). By considering this activity in this Compliance Plan, Enbridge is recognizing and maximizing the value of the GIF investment for ratepayers. The related emissions savings will be documented in the annual monitoring report upon verification. Enbridge agrees with the Board's conclusion that the DSM Framework and related mid-term review provision provide the appropriate opportunity to assess if and how demand side management ("DSM") interacts with future Cap and Trade Compliance Plans. This is discussed in more detail in Exhibit C, Tab 3, Schedule 4.
37. A number of the customer-related emission abatement opportunities are anticipated to be assessed and where appropriate included in future Compliance Plans, but as discussed in the New Business section of the evidence, Exhibit C, Tab 6, Schedule 1, will do so under separate applications or within leave to construct applications.

Facility-Related Abatement

38. In 2017 Enbridge does not intend to pursue any facility-related abatement projects with the specific intent of reducing GHG emissions.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



39. Enbridge will however leverage ongoing asset management projects to maximize the existing investment that is already built into the Company's Custom Incentive Regulation.
40. Facility-related emission abatement opportunities are anticipated to be assessed and where appropriate included in future Compliance Plans. Enbridge will identify these opportunities is discussed in Exhibit C, Tab 3, Schedule 5.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

PERFORMANCE METRICS AND COST INFORMATION

1. Enbridge understands that the Board will assess Compliance Plans based on diversity of compliance options, value extraction from GHG abatement activity investment, cost-effectiveness, customer protection (compliance), flexibility and continuous improvement. This exhibit outlines the data and an additional performance metric in conjunction with anticipated contextual, qualitative insights that Enbridge anticipates to be required by the Board to assess Enbridge's Compliance Plan implementation performance and costs.
2. As outlined in Exhibit B, Tab 1, Schedule 1, Enbridge has submitted a one-year Compliance Plan. As such, the forecast Compliance Plan costs that are shown in this exhibit are for 2017 only.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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

[REDACTED]

[REDACTED]

6. As requested in Appendix A: Filing Guidelines, Enbridge has drafted a template report for Compliance Plan Forecast versus Actuals which is illustrated in Exhibit D, Tab 1, Schedule 1 for purposes of the annual monitoring and reporting activity. 2017 forecast or “plan” numbers are detailed in Exhibit C, Tab 3, Schedule 2, and Exhibit C, Tab 3 and Schedule 3.
7. After detailed review of both the Cap and Trade Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities and the accompanying Filing Guidelines for Natural Gas Utility Cap and Trade Compliance Plans, Enbridge proposes one additional performance metric at this time.
8. Enbridge submits that an appropriate performance metric for 2017 given the nascent state of the market, many variables at play in terms of linkage and California’s status in Cap and Trade, and Enbridge’s experience in carbon markets

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

is the carbon allowance “soft” ceiling price of \$66.49. This adequately captures the full cost efficiency of the Compliance Plan.

9. It should be noted that many aspects of the market and thus total compliance costs are outside of Enbridge’s control and/or too difficult to mitigate as further discussed in Exhibit C, Tab 4, Schedule 1. Furthermore, Enbridge must seek to ensure compliance as its number one goal, which may depending on market forces and the demand/supply dynamic not necessarily be appropriate to benchmark against ICE, or market clearing prices. Enbridge will approach the compliance activities earnestly, diligently and with professionalism, striving to protect customers’ interests.
10. Enbridge recognizes that with experience there will be evolution in the performance metrics considered. Noting the Board’s remarks that:

the OEB intends to establish a working group that will consider, among other things, the need for and design of potential new metrics for evaluating the Utilities’ Plans and performance.

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

COMPLIANCE PLAN – ALLOWANCE PURCHASE

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

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

COMPLIANCE PLAN – OFFSET CREDITS

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

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

COMPLIANCE PLAN – ABATEMENT ACTIVITIES – CUSTOMER

1. Enbridge anticipates that renewable natural gas, low-carbon technologies and energy efficiency will play a role in future compliance plans where possible and appropriate.
2. As also noted in Exhibit C, Tab 2, Schedule 1 of the Framework, the Board lists a number of Potential GHG Abatement Measures for consideration including:

Table 1 – Customer-related and facility-related emission abatement opportunities

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 <sup>1</sup>	Facility and customer emissions

3. The Board goes on to state in section 5.3 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."

---

<sup>1</sup> 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.

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman

4. Lastly, 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.”

A. Demand Side Management (“DSM”)

5. Enbridge shares the Board’s view regarding the potential for overlap between DSM programs and future Cap and Trade Compliance Plans.
6. Further, the Company agrees that the DSM Mid-Term Review will provide ample opportunity to consider the relationship between DSM programs and other future customer abatement activities, which should include a review of DSM’s role within the Company’s overall compliance planning activities. A focused evaluation of the level, pacing, and cost effectiveness of DSM as a compliance tool within the DSM Mid-Term Review will allow the Company to consider the inclusion of DSM within a Compliance Plan beyond 2017, while also avoiding disruption of the Company’s existing DSM programs currently in market.
7. Given the timing of the release of the Framework, the Company has not had sufficient time to plan, design, or implement any proposals for additional rate payer funded DSM customer abatement activities within its 2017 Compliance Plan. As stated above, this is a topic area that the Company believes is more appropriately dealt with during the DSM Mid-Term Review.
8. While the Company has not incorporated incremental ratepayer funded abatement activities into its 2017 Compliance Plan, the forecast presented in Exhibit B, Tab 2,

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman



Schedule 1 does, however, include incremental customer abatement activities as part of the Green Investment Fund (GIF) program, that has been funded by taxpayers.

9. 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 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 customers regardless of primary fuel type. In addition, the funding was also meant to increase the deployment of the Adaptive Thermostats offer, also consistent with the Company’s DSM program, as well as funding to pursue educational and behavioural-based GHG reductions.
10. For illustrative purposes the following table, Table 2, outlines the forecasted lifetime savings related to the incremental GIF program:

Table 2 – Green Investment Fund Forecasted Results

Program Impacts	Unit	2016	2017	TOTAL
<b>Budget</b>	\$ Millions	\$9.70	\$22.70	<b>\$32.40</b>
<b>Number of Participants</b>	Homes	3,000	10,000	<b>13,000</b>
<b>Total GIF Program Savings<sup>1</sup></b>	Annual m <sup>3</sup>	2,059,500	10,984,000	<b>13,043,500</b>
<b>Total GIF Program Savings</b>	Lifetime m <sup>3</sup>	61,785,000	205,950,000	<b>267,735,000</b>
<b>Total Lifetime CO<sub>2</sub>e Reductions</b>	Tonnes	115,847	386,156	<b>502,003</b>
<b>Estimated CO<sub>2</sub>e Reductions Taking Place in Each Year<sup>1</sup></b>	<b>Tonnes</b>	<b>3,862</b>	<b>20,595</b>	<b>24,457</b>

1. CO<sub>2</sub>e reductions and volume savings taking place in each year include the 50% of the impact of annual reductions achieved in the current year and 100% of the reductions achieved in past years. This methodology is intended to roughly capture the reality that participants do not all begin reducing emissions on Jan. 1st of a given year; they are enrolled throughout the year. For example, in the 2017 calendar year the full 100% impact of 2016 achievement and 50% of 2017 achievement has been included. The “TOTAL” column listed for this row represents the total annual CO<sub>2</sub>e reductions and volumes that will persist in 2019 and beyond.

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman

11. The numbers shown in Table 2 represent the forecasted m<sup>3</sup> volumes and CO<sub>2</sub>e reductions for this 2017 compliance period. The forecasted 2016 values have been presented along with 2017, as the anticipated program impacts (due to the timing launch of the program) will be most notable in the 2017 compliance period. For the purposes of determining impact on the annual carbon compliance, 502,003 tonnes in CO<sub>2</sub>e reductions is the best estimate of the lifetime savings attributable to the GIF program delivered by Enbridge.
12. 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 conservation and energy efficiency can be shown to be more cost effective over the long term than the purchase of compliance instruments. Given the timing of the release of the Framework, and given the scheduled Mid-Term Review for the Company's DSM Framework, the Company believes the issue of including the existing and any incremental DSM activity into the Company's compliance planning activities is best suited for the Mid-Term Review.

B. Renewable Content Objectives for Natural Gas Pipelines

13. Enbridge believes that establishing a renewable content objective for natural gas pipeline systems can provide a flexible low-carbon solution that offers good value to customers because it leverages the existing natural gas transmission, distribution and storage infrastructure as well as the heating, water heating and other gas-fired equipment used by our customers. Next to conservation, the addition of a renewable content objective, for natural gas pipelines, is expected to offer one of the more cost-effective carbon abatement measures for Ontario to broadly meet its GHG reduction and climate change mitigation goals.

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman

14. Several near-term opportunities exist to establish renewable gas supplies for pipeline networks. Today, various biogas supplies are derived from landfill operations, municipal water treatment facilities, and anaerobic digestion of municipal organic collection programs and farm/agricultural wastes. These biogas supplies are typically flared or converted into electricity at relatively low efficiencies of 40% or less. A more compelling use of this biogas involves upgrading the gas to pipeline quality standards and injecting this into the natural gas network where it can be utilized at thermal efficiencies of up to 96%. This upgraded biogas is referred to as Renewable Natural Gas ("RNG").
15. Other near-term renewable gas supplies that can help Ontario increase the renewable content in natural gas pipelines is electrolytic hydrogen. This renewable hydrogen is derived from surplus and off-peak electricity in a process known as power-to-gas, and the hydrogen can be injected into the natural gas network to decarbonize pipeline fuel. In effect, power-to-gas plants can become a new energy intertie that connects Ontario's wholesale electricity grid to the province's wholesale natural gas network. The result is Ontario can leverage the pipeline network's seasonal storage capability to store low-carbon energy from the electricity grid that would have otherwise been curtailed or exported. Power-to-gas offers a means for Ontario to ensure its abundant low-carbon power supplies are used for the province's competitive advantage under Cap and Trade rather than exporting this low-carbon energy.
16. Over the medium and long-term, natural gas pipeline systems can achieve deep decarbonization with renewable content through the commercialization of methanation technologies and the development of solar fuel technologies. These technologies are not commercially ready today but their ongoing development can

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman

ensure the renewable content in pipelines can grow significantly beyond the near-term market opportunities that will focus on RNG and power-to-gas.

17. Enbridge has been actively supporting the industry's efforts to understand the market potential related to renewable pipeline fuels, including technical assessments and feasibility studies related to bringing renewable gas supplies to market. RNG has similar environmental benefits when compared to renewable electricity, but it offers some unique benefits. These include improved cost-effectiveness for renewable energy, when measured on an equivalent energy basis. RNG and power-to-gas also offer the ability to leverage existing, cost-effective energy storage so this renewable energy can be storage until the market demand is real and carbon abatement can be guaranteed. 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 a fugitive emission. 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 renewable natural gas, and several models exist for delivering it to customers. European markets are actively developing renewable pipeline fuels through both RNG and power-to-gas developments. In North America, California, British Columbia and Quebec have all moved forward with the early development of RNG to complement the renewable energy options that have traditionally been focused on the electricity grid. British Columbia's model also includes a voluntary opt-in model where Fortis BC

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman

customers have the option to buy RNG as some or all of the gas they use. Customers who choose RNG also receive a carbon tax credit on their bill.

19. The typical development timeline for RNG and power-to-gas 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. As a result, this 2017 Compliance Plan does not include renewable natural gas volumes; however, Enbridge anticipates that renewable content will play an increasing role in future compliance plans as these projects are developed and brought into commercial operations.

#### C. Natural Gas Transportation

20. In partnership with the government, the Company also plans to increase in 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 volumes increase, GHG emissions will decrease significantly as natural gas displaces diesel, a more carbon intensive fuel. The province has committed up to \$270m in their Climate Change Action Plan ("CCAP") to "increase the use of low-carbon trucks and buses", which includes but is not limited to those powered by natural gas. The CCAP states that:

The province intends to work with the Ontario Trucking Association, Union Gas, Enbridge and others to establish a network of natural gas and low- or zero carbon fueling stations. It will work with utilities to ensure the recovered biogas content of the fuel provided is increased over time to further lower the carbon footprint of this alternative fuel. Natural gas has a lower carbon content than diesel and also burns cleaner, producing less local air pollution.

As natural gas use for vehicles becomes more prominent, it is important that natural gas volumes not be considered in a vacuum, but rather in the broader context of provincial GHG impact and government policy objectives.

Witnesses: M. Lister  
S. Mills  
F. Oliver-Glasford  
D. Teichrob  
J. Tideman

COMPLIANCE PLAN – ABATEMENT ACTIVITIES - FACILITY

1. Enbridge recognizes that abating Greenhouse Gas (“GHG”) emissions from its own operations is part of helping the province reach its GHG emission targets, as well as a tool to reduce Enbridge’s overall Cap and Trade compliance obligation. Enbridge has already 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 detection and repair programs.
2. Enbridge also recognizes that GHG abatement may be required to meet the proposed federal methane regulations. These regulations are expected to be available in draft format in 2017, with phase in of the regulation as early as 2018 to 2020, and are expected to cover Enbridge’s gas storage facilities. Although Enbridge understands that distribution is excluded from the covered sectors in the initial phase of the regulations, it may be included in future years.
3. Enbridge notes that its facility related obligations represent approximately only 1% of its total obligations under the Regulation.
4. As part of Enbridge’s asset management program, ongoing asset replacement and upgrade projects are undertaken. Often these measures have the added benefit of reducing gas loss from distribution assets. Enbridge will leverage these projects to maximize the existing investment that is already built into the Company’s Custom Incentive Regulation.

Witnesses: J. Murphy  
E. Naczynski

5. Enbridge has developed a multi-department team to discuss abatement opportunities for facility-related GHG emissions. This team is working to develop a list of potential abatement opportunities. These opportunities may include asset replacement or upgrade, improved asset or work management practices and implementation of new technologies in order to decrease fugitive, vented, combustion or flared emissions.
6. Facility-related abatement opportunities identified will be reviewed for feasibility. The feasibility review will include determining the potential amount of GHG emissions reductions that could be achieved with the project and capital and operating cost requirements. This will then be used to determine the cost per tonne of GHG emissions for the project. Further analysis will include a review of additional factors, including but not limited to safety, training requirements, and ongoing maintenance requirements.
7. The outcome of this effort will be a list of facility-related abatement opportunities that includes a feasibility analysis and a cost per tonne of GHG reductions. This list will be used to prioritize the opportunities for inclusion in future year Compliance Plans. It is expected that this will be an ongoing effort that will be updated on a frequent basis as new opportunities present themselves or if/when regulatory requirements, such as the introduction of new methane regulations, change.
8. In addition to the development of the facility-related abatement opportunities, Enbridge is working to develop a mechanism to begin reviewing the impact on GHG emissions of all asset management projects. This is expected to be completed in 2017.

Witnesses: J. Murphy  
E. Naczynski

9. As the above mentioned activities are still in early stages, Enbridge has not included any long-term facility related abatement programs in the 2017 Compliance Plan, however it does intend to include both short and long-term facility-related abatement programs in future Compliance Plan filings. Longer term planning will be required to implement abatement opportunities such as renewable natural gas, which will reduce both customer and facility-related obligations, and projects to reduce venting and fugitive emissions. A discussion on longer term investments is included in Exhibit C, Tab 5, Schedule 1.

Witnesses: J. Murphy  
E. Naczynski



ADMINISTRATIVE COSTS

1. Enbridge has been engaged in taking all the necessary steps to be business ready for the implementation of Ontario's Cap and Trade Program on January 1, 2017. As filed in EB-2015-0114, Exhibit I.D2.EDGI.CCC.3 on November 9, 2015, Enbridge's administrative costs will include, but not limited to: consulting costs; IT billing system changes; costs of completing measurement, verification and reporting of greenhouse gas ("GHG") emissions; costs for implementation of a carbon strategy; legal and consulting support; customer communication and education efforts; employee education; and Ontario Energy Board Framework Consultation costs.
2. This Exhibit will provide transparency around the administrative costs incurred and forecasted up until January 1, 2017. It will also forecast costs to be incurred during 2017.
3. As further discussed in Exhibit F, Tab 1, Schedule 1, the Board approved the Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA") in Enbridge's Custom Incentive Regulation ("CIR") proceeding (EB-2012-0459) in recognition of the potential for a future government program to reduce GHG emissions.
4. Enbridge has and will continue to record administrative costs incurred until January 1, 2017 for implementation of its Cap and Trade program in the 2016 GGEIDA. Moreover, the Company will track administrative costs incurred from January 1, 2017 to December 31, 2017 in a 2017 GGEIDA, as discussed in Exhibit F, Tab 1, Schedule 1. Enbridge will seek approval from the Board for disposition of the 2016 GGEIDA in 2017 as part of its 2016 deferral and variance

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

account clearance application or when filing the next Compliance Plan application by August 1, 2017. Similarly, the Company will seek recovery of the 2017 GGEIDA in 2018 as part of its 2017 deferral and variance account clearance application or as part of the Company's 2019 Compliance Plan filing in August of 2018.

5. Recognizing that a Cap and Trade program is incremental to the Company's current business, but also recognizing that some costs around GHG reporting are already in place and captured through the existing rates, Enbridge is seeking to take a systematic approach to reviewing costs to determine if they are currently captured in existing rates.
6. Enbridge has applied a key criterion for the purpose of determining the appropriateness of including costs in the GGEIDA. The criterion is that all costs included in the GGEIDA be incremental to the Company's current business and required for the purposes of the Company meeting its Cap and Trade requirements.
7. At the time of this filing, Enbridge recognizes that it has and will incur administrative costs for both 2016 and 2017. Enbridge seeks to be as transparent as possible in identifying incremental Cap and Trade costs in this Exhibit. Section A below identifies the administrative costs that will be incurred or have been incurred in 2016. Section B outlines the estimated administrative costs that will be incurred in 2017.

A. 2016 Administrative Costs

8. Costs undertaken to date and through to the end of 2016 associated with business readiness include: IT billing system updates, resourcing for implementation, carbon

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

market knowledge, customer education and outreach, consulting support on carbon strategy development, and external counsel and regulatory support.

#### IT Billing System

9. In order to be business ready for January 1, 2017, Enbridge required an update to its IT billing systems for mass market, unbundled and bundled customers. The work involved development, coding and testing. The capital cost of the updates is forecasted to be \$516,000 in 2016, with an in-service date of January 1, 2017. The capital costs incurred in 2016 will not be sought for recovery through the 2016 GGEIDA. The annual revenue requirement associated with the IT billing system update will be captured and sought for recovery through the GGEIDA, until the impact can be incorporated into Enbridge's delivery rates, which is expected in 2019. The 2017 revenue requirement is further articulated in Section B: 2017 Administrative Costs.

#### Staffing Resources

10. Enbridge has devoted a significant amount of staff and managerial time and effort to ensure the business is ready on January 1, 2017. In 2016, Enbridge assembled a Cap and Trade focused team of four employees at a forecasted cost of \$750,000 which will be sought for recovery through the 2016 GGEIDA. The aforementioned costs cover governance development, Compliance Instrument Tracking System Service registration, overall portfolio development, business readiness, stakeholder relations and communications, regulation review and translation relative to Cap and Trade, and carbon procurement related accounting research.
11. Other employees from within the organization have provided part-time Cap and Trade readiness assistance. Additional assistance cannot be precisely quantified

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

but is estimated at approximately two to three FTEs, spread out between a number of employees in Regulatory, Finance, Gas Supply, Legal, IT, Public and Government Affairs and Customer Care. The Company is not seeking cost recovery in relation to the additional assistance through the GGEIDA but reserves the right to articulate the additional work absorbed by non-incremental employees as productivity gains.

Market Intelligence and Consulting Support

12. To assist Enbridge in the development of its Compliance Plan, inclusive of its procurement strategy, Enbridge has retained an expert third party Procurement Consultant (the "Consultant"). The Consultant provided the following: a Carbon Market Report and a Carbon Strategy Report. Enbridge will also be provided with one year of GHG Market and Regulatory Monitoring Services and expert witness support, as necessary. These costs will amount to \$84,000 USD, plus any relevant costs associated with expert witness support prior to December 31, 2016.
13. ICF International ("ICF") was retained to provide Enbridge assistance in the analysis and review of the Ontario government's Climate Change Mitigation and Low-carbon Economy Act, 2016 and related Cap and Trade Regulation. These services were retained to ensure that Enbridge had a strong foundational understanding and interpretation of the Ontario government's Climate Change Policy and Cap and Trade Regulation. The total cost for ICF's support is \$187,000.
14. In order to effectively implement a Cap and Trade program, Enbridge has developed a Cap and Trade market intelligence which will allow it to remain abreast of market and policy activity that impact both the Ontario and other Cap and Trade markets. To this end, Enbridge joined the International Emissions Trading

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

Association ("IETA") in early 2016 in order to gain broad and market specific intelligence on carbon trading, offsets and related policy developments. These areas of knowledge will allow Enbridge to provide thoughtful input into the development of its Compliance Plan. Enbridge negotiated a prorated amount for its 2016 membership that took account of the March 1 start date at a cost of \$20,000 CAD. This membership is effective until December 31, 2016. Enbridge has taken full advantage of this membership in gaining market and offset insight through attendance at working group meetings and their recent conference, "Ontario's Carbon Opportunity".

15. Enbridge has also subscribed to a market intelligence service platform provided by Californiacarbon.info ("CC"). CC is a web based information platform that provides up to date information on California's over-the-counter market, offsets, price forecasts, and carbon and environmental policy related news. Currently, the service focuses on the California market; however, in discussion with CC, it intends to incorporate Ontario-specific information once available. The prorated cost of this service in 2016 is \$4,500 USD.
16. As this new market in Ontario develops, Enbridge must remain current on carbon market and environmental related information as well as regulatory and legislative changes. The Company acknowledges that this market is complex and will continue to develop. Enbridge believes that CC and IETA will help the Company remain at the leading edge of the carbon market. This market knowledge will further lend to the development of a cost effective and flexible Compliance Plan.
17. Enbridge estimates an amount of \$16,000 for participation in educational events pertaining to the Ontario and other jurisdiction's Cap and Trade programs. These

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

funds were/will be used to allow employees to attend conferences and trade shows, inclusive of incidental fees. Ontario's Cap and Trade program is new. It is important for Enbridge to remain current with industry information. Such trade shows and conferences will provide this avenue. Armed with most current information, Enbridge will be able to make informed decisions based on the current and future outlook of Ontario's Cap and Trade market.

#### Customer Education and Outreach

18. Enbridge has incurred approximately \$46,000 associated with its customer outreach and education activities in 2016. This cost is comprised of two components: 1) customer focus groups; and 2) design and printing of customer bill inserts. Focus groups were completed to gain knowledge regarding utility-specific Cap and Trade messaging. Such knowledge was used to help craft and communicate messages prior to implementation of the Ontario government's Cap and Trade program. The standalone Cap and Trade bill insert was provided with November bills to educate all customers about Cap and Trade.

#### External Legal Counsel

19. Enbridge estimates that it will incur approximately \$125,000 in external legal counsel fees in 2016. Services provided to Enbridge include: assistance with its Regulatory submissions and detailed analysis of all Cap and Trade regulatory documents.

#### OEB Cap and Trade Framework Regulatory Proceedings

20. No proceedings have taken place or are anticipated for the Cap and Trade file in 2016. As such, Enbridge has not anticipated any application of costs by the Board in the 2016 budget below.

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

21. Table 1 below outlines each cost element and the forecasted amount.

Table 1: 2016 Cost Elements and Forecasted Amounts<sup>1</sup>

<b>Cost Element</b>	<b>Forecasted Amount</b>
IT billing system	\$516,000
Staffing resources	\$750,000
Market Intelligence, and Consulting Support	\$335,000
Customer Education and Outreach	\$46,000
External Legal Counsel	\$125,000
OEB Cap and Trade Framework Regulatory Proceedings	\$0
<b>TOTAL</b>	<b>\$1,772,000</b>

**B. 2017 Administrative Costs**

22. Enbridge is proposing to record administrative costs incurred, commencing January 1, 2017, in the 2017 GGEIDA. While certain costs are unknown at this time (for example, costs payable in respect of this Cap and Trade Compliance Plan proceeding), the Company is in a position to estimate certain administrative costs that will be incurred in 2017. Given that there are certain costs which cannot be identified or fully known, Enbridge is proposing the continuance of the GGEIDA, which is appropriate as Enbridge's CIR did not include any administrative costs in respect of Cap and Trade. As stated above, the Company will seek approval for disposition of all 2017 GGEIDA costs in 2018 as part of its 2017 deferral and

---

<sup>1</sup> Where costs have been converted from USD to CAD, a 1.2959 exchange rate has been applied.

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

variance account clearance application or as part of the Company's 2019 Compliance Plan filing in August of 2018.

Revenue Requirement Implication of IT Billing System Upgrades and Potential Future Changes

23. As outlined in respect of 2016 administrative costs, Enbridge incurred costs to reconfigure its IT billing systems to be business ready for January 1, 2017. It is proposed that Enbridge record in the 2017 GGEIDA, the 2017 revenue requirement implications of these 2016 capital upgrades, which has been estimated at \$76,100. Consistent with other IT billing system upgrades, these costs will be depreciated over approximately five years, beginning January 1, 2017. The Company notes that additional IT system changes may be required in 2017. At this time, the extent of these costs is unknown. Any revenue requirement implications of any eligible spending would also be recorded in the 2017 GGEIDA.
24. Following the implementation of the IT billing system on January 1, 2017, the Company will enter the warranty period. The costs associated with this warranty period are not included in Table 1. Warranty costs cannot be estimated.

Staff Resources

25. As noted in respect of 2016 administrative costs, the Company has a team dedicated to the Cap and Trade program. Although some activity will start to evolve as Enbridge moves from business readiness activity to implementation and sustainment, Cap and Trade devoted staff are still necessary to maintain statutory compliance and there will be a requirement to hire additional staff.

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova



26. Enbridge estimates that it will require seven full time equivalents (“FTEs”). Most of these staff were in place in 2016 and their ongoing effort will be needed in 2017 and beyond. The salary and benefits of these staff to ensure statutory compliance will be added to the 2017 GGEIDA. This staff will have responsibility of overall portfolio management and monitoring, customer outreach and communication, Cap and Trade related policy engagement, incremental GHG reporting and verification, development and continuous improvement of an emission allowance procurement strategies, Board required monitoring and reporting activity, related accounting, and administrative functions. This will also include future Board regulatory filings and proceedings that require Cap and Trade intelligence. The Company notes that these positions are critical to the sustainment of Enbridge’s Cap and Trade program. The launch of the Cap and Trade program represents a new complex financial market. In order for Enbridge to continue to develop and maintain an effective portfolio for its customers, the Company must maintain diligent and dedicated oversight of the developing carbon market and any associated regulation. Enbridge maintains that this can only be completed provided that a dedicated team is assigned to the Cap and Trade program.

Implementation, Market Intelligence and Consulting Support

27. Enbridge recognizes that it will incur implementation, market intelligence and consulting support for the continued evolution of its carbon strategy in 2017. It is important to note that these activities have been estimated, based on experience in 2016, and the anticipation of future costs in 2017, at \$561,000. In 2017, the Company will continue all market intelligence and monitoring services initiated in 2016. Additionally, Enbridge has identified implementation components that include development of a Company specific marginal abatement cost curve, brokerage services, assistance with offset regulations and implementation, administrative

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

support including additional IT upgrades for carbon procurement tracking, attendance at applicable Cap and Trade conferences, and consulting support in the development of a procurement strategy for its 2018 Compliance Plan. Enbridge acknowledges that administrative costs will be captured in the 2017 GGEIDA and will be sought for clearance to rates in 2018 as part of its 2017 deferral and variance account clearance application or as part of the Company's 2019 Compliance Plan filing in August of 2018.

External Legal Counsel & OEB Cap and Trade Framework and Other Regulatory Proceedings

28. Enbridge acknowledges that it will incur external legal costs in respect of the Cap and Trade Framework proceeding. This amount has been estimated at \$125,000 based on forecasted 2016 costs and will be recorded in the 2017 GGEIDA when realized. Additional external legal costs may be incurred in respect of the Cap and Trade Framework proceeding as well as costs payable to the Board and other participating parties. These additional costs are unknown and hence not forecasted at this time.

Incremental Cap and Trade related GHG Reporting and Verification

29. *Ontario Regulation 143/16, Quantification, Reporting and Verification of Greenhouse Gas Emissions* require that natural gas distribution companies begin quantifying, verifying and reporting customer-related and operational GHG emissions. In 2017, Enbridge will report emission associated with combustion (ON.20), emissions from venting/flaring/fugitive (ON.350) and customer-related emissions (ON.400). The Ministry only requires that combustion emissions (ON.20) are verified in 2017; however, Enbridge intends to complete a pre-assurance verification audit of customer-related emissions to ensure readiness for subsequent

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

years' third party verification audits. To enable this pre-assurance audit, Enbridge forecasts to incur an additional cost of \$20,000 in 2017.

#### Customer Education and Outreach

30. As detailed in Exhibit E, Tab 1, Schedule 1, Enbridge will continue to communicate with its customers regarding the impacts of Cap and Trade in 2017. In order to assist customers in reducing their GHG footprint and ultimately assist in achieving the Province's GHG reduction goal, Enbridge will continue to inform customers about energy efficiency programs and opportunities. A communication plan is available at Appendix B, to Exhibit E, Tab 1, Schedule 1.
31. The Company estimates that it will incur approximately \$115,000 in customer outreach and education costs during 2017. This forecast amount includes call centre training, bill inserts and/or messaging, customer research including focus groups around Cap and Trade messaging, and miscellaneous outreach activity (e.g., printing materials for trade shows, etc.). The continuation of Enbridge's customer outreach and education initiatives will help ensure that customers are kept informed about the program and its greater impacts.

#### Bad Debt Provision

32. In Enbridge's 2014-2018 CIR proceeding (EB-2012-0459), the Company did not anticipate or forecast any bad debt expense that will arise due to the Cap and Trade regime. Given the material impact that customer and facility-related costs will necessarily have on customer bills, Enbridge has estimated the forecast impact on the bad debt expense at \$900,000. This estimate is based upon a 10% increase in billed revenue as a result of Cap and Trade, and then applying that 10% increase to the Company's forecasted bad debt for 2017 of \$9.796 million as filed in

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

EB-2012-0459. Enbridge proposes that incremental bad debt amounts be recorded in the 2017 GGEIDA.

Income Tax Implication

33. Enbridge recognizes that there may be income tax implications associated with the Company's Cap and Trade program. To the extent that any income tax implications are realized that need to be reflected through the rate-setting process, Enbridge will seek to address such amounts through a future Compliance Plan filing. In effect, Enbridge will seek to address any required income tax implications associated with its 2017 Cap and Trade activities, through its 2019 Compliance Plan filing, in August 2018. With respect to the 2017 administrative costs the following elements are anticipated: revenue requirements for billing system changes, staff resources, market intelligence and consulting support, conference, trade shows and incidental fees, external legal counsel, regulatory proceedings, customer education and outreach, bad debt and income tax implications. Table 2 summarizes the most current estimate of such costs, recognizing that there are still costs that are unknown and subject to change.

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

Table 2: 2017 Forecasted Cost Elements and Amounts<sup>2</sup>

<b>Cost Element</b>	<b>Forecasted Amount</b>
Revenue requirement implications of IT billing system upgrades and potential future changes	\$76,100
Staffing Resources	\$1,120,000
Implementation, Market Intelligence, and Consulting Support <sup>3</sup>	\$561,000
External Legal Counsel	\$125,000
OEB Cap and Trade Framework and Other Regulatory Proceedings	Unknown at this time
Incremental Cap and Trade related GHG Reporting and Verification	\$20,000
Customer Education and Outreach	\$115,000
Bad Debt Provision	\$900,000
Income Tax Implication	Unknown at this time
<b>TOTAL</b>	<b>\$2,917,100</b>

<sup>2</sup> Where costs have been converted from USD to CAD, a 1.2959 exchange rate has been applied.

<sup>3</sup> Implementation, Market Intelligence and Consulting Support have been provided on a best guess basis, recognizing that the Company does not have experience with implementing Cap and Trade and thus may have under or over forecasted at this time.

Witnesses: A. Langstaff  
D. McIlwraith  
F. Oliver-Glasford  
R. Small  
E. Vangelova

RISK MANAGEMENT – IDENTIFICATION AND MITIGATION

1. Risks are present in all markets. Risk management is the process whereby risks are identified, understood and then managed through processes, procedures or programs.
2. An understanding of the risks inherent to Ontario's Cap and Trade market 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 identify risks and implement risk management programs proactively. Enbridge has been actively taking steps to identify risks, with the guiding principles identified by the Board in mind. The fewer unmitigated risks, the greater probability of Enbridge's Compliance Plan achieving the Board's Guiding Principles for Cap and Trade. Exhibit C, Tab 2, Schedule 1, Table 3, shows how the procurement strategy in particular mitigates risk against each of the guiding principles.
3. 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.
4. Enbridge has identified additional risks that it believes are also applicable for discussion within the Company's Cap and Trade Compliance Plan. They include:

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

- a. Financial transaction risks;
- b. Risk of data dissemination to market participants; and,

[REDACTED]

[REDACTED]

- 5. A discussion of all risks identified above, including mitigation efforts, is contained within this exhibit. Longer-term risks, in the five to 10 year horizon, are discussed in Exhibit C, Tab 5, Schedule 1.

Allowance Price Variability – Risk Identification

- 6. The price of an emission allowance at the Ontario-only auction in 2017 may vary as a result of many factors, most notably the following:
  - a. Fluctuation in inflation and currency exchange rates;
  - b. Price differences between auction and Over the Counter (“OTC”) markets;
  - c. Status of linkage with the Western Climate Initiative Inc. (“WCI”) Cap and Trade market which currently includes California and Québec; and
  - d. Regulatory changes and legal challenges of the California Cap and Trade program.
- 7. As discussed in Exhibit B, Tab 4, Schedule 1, the Ontario auction reserve price, also referred to as the floor price, is set by the greater of the California or Québec floor prices. Provided that the emission allowance price is set by the California auction reserve price, exchange rate fluctuations will result in Ontario allowance unit price variability. This is a risk embedded into the Ontario Cap and Trade program where costs are translated to Canadian dollars (“CAD”) from US dollars (“USD”).

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

8. The U.S. Consumer Price Index for All Urban Consumers and Québec Consumer Price Index are inputs into the derivation of the auction floor prices for California and Québec. As such, a significant change in an inflation rate will alter the floor price of the emission allowances. Due to federal government policies in both Canada and the United States, the risk associated with significant fluctuations in inflation is minimal. Once again, inflation rate risk is inherent to all market participants.
9. As evident in the California market, there were periods where the price of emission allowances on the OTC market traded below the floor price established by the California Cap and Trade regulation. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]
10. Enbridge recognizes that the Ontario Cap and Trade market will also be influenced by linkage with California and Québec through the WCI Cap and Trade market. Although linkage is not planned until January 1, 2018, the behavior of the WCI auctions and secondary market, as well as by any regulatory changes made by California and Québec could impact the auction clearing price of the 2017 Ontario-only auctions. The outcome of the legal challenges related to the California Cap and Trade program could also impact the Ontario market.

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

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



[REDACTED]

Allowance Price Variability – Analysis of Risk

12. In the Framework the Board has requested that Enbridge conduct scenario analysis on the price of emission units, including exchange rate risk.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

FIGURE DELETED

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

[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

TABLE DELETED

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TABLE DELETED

[REDACTED]

Allowance Price Variability – Mitigation Measures

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

31. The Ontario Cap and Trade market is complex, requiring participants to stay abreast of the many informational inputs that impact the demand/supply dynamics. Enbridge will monitor the WCI market as well as all changes proposed or made to Cap and Trade regulations in Ontario, California and Québec. To enable this,

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Enbridge will mitigate the risk of inadequate information through a number of activities, which may include, but are not limited to, attending conferences, establishing relationships with market players, seeking consulting or legal support where regulation/regulatory interpretations are required, subscribing to carbon market intelligence platforms, involvement in Cap and Trade associations and/or committees in various energy industry associations, reading relevant Cap and Trade market articles, and lobby work where necessary to support the interests of our ratepayers. Understanding market behavior and the impact of regulatory changes will assist the Company in making appropriate and timely risk-based decisions on changes to its purchasing strategy.

32. Flexibility in the Company's Compliance Plan strategy and closely monitoring the carbon regulations and markets will ensure Enbridge obtains its compliance obligations and achieves the Board's guiding principles. A focus on market intelligence and involvement results in: 1) cost effectiveness is met by staying on top of the supply/demand dynamics and optimizing procurement opportunities; [REDACTED]  
[REDACTED]; 3) cost recovery is met as the Company is able to show it has been diligent in understanding and responding to market information; 4) flexibility is met by Enbridge being knowledgeable of market conditions and regulatory changes to adapt its procurement strategy; and, 5) continuous improvement is met through an increasingly expert group of resources inside the Company around carbon markets and Cap and Trade implementation.

[REDACTED]  
[REDACTED]  
[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Volume Variability – Risk Identification

34. 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 (e.g. price sensitivity);
  - 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. Change in demand by natural gas fired power generators.
35. 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.
36. Natural gas demand is influenced by a number of factors, most notably weather. Details on the derivation of the 2017 gas volume budget can be found in EB-2016-0215 Exhibit C1, Tab 2, Schedule 1.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

- [REDACTED]
- [REDACTED]
- [REDACTED]
38. Enbridge's volume variability may also be impacted by new and existing DSM initiatives, implementation of the GIF-funded program, implementation of electrification projects and de-carbonization technologies, changes to building codes and standards and execution of the government's Climate Change Action Plan. The successful implementation of any or all of the above initiatives will result in volume variability. Excluding Enbridge's DSM programs, it is unknown to what extent the above mentioned programs will affect volume variability in 2017.
39. Volume variability will also occur as entities decide to individually manage their own compliance obligations, and opt-in to the Cap and Trade program as voluntary participants. If and when this occurs, Enbridge's compliance obligation will decrease.
40. 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 participant's changes from those that were known at the time the forecast was developed. This risk is noted on page 7 of AI's Carbon Market Report, included in Appendix A to Exhibit C, Tab 1, Schedule 1.
41. Enbridge has used a list of known capped participants from the MOECC in order to subtract volumes forecasted for capped participants. This list is current as of October 7, 2016; however, mandatory participants have until the deadline of November 30, 2016 in order to register as mandatory participants. The MOECC

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



has not identified a deadline for the registration of voluntary participants, however Enbridge understands that voluntary participants may register for participation in Ontario's 2017 Cap and Trade program up to December 31, 2016.

42. 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 associated values more than offset reductions in existing customer usage. The impact of such initiatives is not expected to be material in 2017.
43. As per the Regulation, the point of regulation for the natural gas fired power generators, not supplied by international or inter-provincial natural gas transmission pipelines, is the in-franchise natural gas distributor. Enbridge notes that approximately 6% of its customer-related GHG emissions are derived from natural gas fired power generators served within its franchise area. Since they are dispatched by the Independent Electricity System Operator ("IESO"), annual consumption by natural gas fired power generators is subject to volume variability. Volumes are more varied and less predictable than Enbridge's average customer, due to their large usage and because natural gas fired power generators are dispatched by IESO as needed.
44. In the development of Enbridge's 2017 volume forecast, Enbridge requested annual forecast volumes from six 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. Annual forecasts were not

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

received from all power generators, since they are not contractually required to provide an annual demand forecast.

[REDACTED]

[REDACTED]

#### Volume Variability – Analysis of Risk

47. In the Framework, the Board has requested that the utilities conduct scenario analysis on the volume variability. For this first Compliance Plan Enbridge has considered scenarios on volume increases in aggregate. Enbridge may adjust analysis in future Compliance Plans as it learns more about the market.

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

TABLE DELETED

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Volume Variability – Mitigation Measures

51. In order to mitigate the overall risk of volume variability, the Company will monitor the actual monthly consumption as compared to the forecast volumes. As discussed in Exhibit C, Tab 1, Schedule 1, the Carbon Procurement Governance Group (“CPGG”) will monitor the variance from the forecast and make adjustments to the Compliance Plan strategy as necessary.
52. Enbridge’s Compliance Plan, which has been developed with the Board’s guiding principles in mind, will provide the Company the ability to adapt to overall volume variability.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

- [REDACTED]
- [REDACTED]
- [REDACTED]
54. Enbridge will continue to communicate on a regular basis with large volume customers, and seek to even better understand their future supply requirements and their Cap and Trade compliance obligations. The Company has Account Executives who meet at least annually with large volume customers for volume requirements. This will be expanded to include discussions about compliance obligations. As well, the Account Executives can facilitate discussion about Company DSM programs and/or other abatement opportunities.
55. If any changes, additions or deletions, are made to the capped participants list, Enbridge will adjust its forecast volume. This update to the capped participants list will be done on a monthly basis by the carbon strategy team based on inputs provided by the MOECC and information collected via our Account Executives. [REDACTED]
- [REDACTED]
- [REDACTED].
56. Enbridge continues to engage and collaborate with natural gas fired power generators and the IESO to better understand their forecasted natural gas requirements. The Company notes however, that even with forecasted demand requirements identified, there may still be variability from the forecast since there is no mechanism in the contracts with the natural gas fired power generators to enforce the forecasted volume. Therefore this volume variability risk cannot be completely mitigated.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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.
59. Enbridge understands that the 2017 cap was set by the MOECC to match the forecasted province-wide GHG emissions for the sectors covered by Cap and Trade. While Enbridge is not privy to 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, leading to availability concerns in the first year of the program. 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.
60. Additionally, five percent of allowances created by the government in 2017 will be held back in a strategic reserve. [REDACTED]
- [REDACTED]
- [REDACTED] Further discussion on the supply-demand balance in the Ontario Cap and Trade market can

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

be found on pages 35 to 37 of AI's Carbon Market Report, which is included as Appendix A to Exhibit C, Tab 1, Schedule 1.

61. The Ontario Cap and Trade program, which was modeled after and is similar to the California and Québec Cap and Trade programs, is designed to place market limits on participants. These limits include the holding and purchase limits. While these limits do not constrain the number of allowances available at auction, they do limit a participant's ability to obtain allowances. [REDACTED]

[REDACTED]

63. In the event of increased throughput by the natural gas Utilities, demand for emission units may outpace supply. As discussed under volume variability risk above, higher natural gas throughputs could occur for several reasons, with the main risk being the weather.

64. 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. While the uptake of the Ontario Cap and Trade market by speculators is unknown at this point in time, it is possible that this could lead to reduced

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

availability of emission allowances at auction. This may however increase liquidity on the secondary market.

Emission Unit Availability – Analysis of Risk

65. AI has completed an analysis of the supply and demand economics of the Ontario-only Cap and Trade market. Refer to pages 35 to 37 in Appendix A available at Exhibit C, Tab 1, Schedule 1.

Emission Unit Availability – Mitigation Measures

66. Enbridge will monitor the Ontario and WCI Cap and Trade markets and adjust its compliance strategy as necessary [REDACTED]. Various means to gain market intelligence will be critical to the Company's ongoing monitoring.

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Market Risk – Risk Identification

70. Enbridge is defining market risk as any risks present due to the design of the Cap and Trade market.

71. 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.

72. 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. Early signals from the Conservative party indicated interest in moving from Cap and Trade to a Carbon Tax policy. Although this is likely only a risk beginning in 2018, an earlier than anticipated election would put this on the radar for 2017. If for any reason Cap and Trade was discontinued by the government in 2017, any carbon allowances purchased might be worthless. There would be no way to reasonably mitigate this outside risk.

73. Enbridge understands that as of the date of this submission, the MOECC has proposed edits to the Regulation.<sup>4</sup> The Company also understands that the regulations surrounding offset credits, offset protocols, and early reduction credits are not yet written into regulation. Although the current draft changes appear to have a minor impact, Enbridge recognizes that future changes in the Regulation

---

<sup>4</sup><http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTMwODQ5&statusId=MTk4MjEw&language=en>

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



could impact the Company's compliance obligation, costs to comply and ability to comply with the Cap and Trade program.

74. Enbridge has also identified the potential 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 adjustment will impact the number of emission allowances required. This risk is similar to that of volume variability.
75. Ontario intends to link its Cap and Trade program with California and Québec's Cap and Trade program through WCI. Although linkage is planned for January 1, 2018, an extensive review is required by both WCI partners in order to approve this linkage. [REDACTED]
76. The linkage between the Ontario and WCI market is expected to increase market liquidity, and thus enable Enbridge greater flexibility in its procurement of compliance options. Linked markets will also provide Enbridge access to offset credits created in partner jurisdictions, thus increasing the number of cost-effective compliance options available to meet the Company's compliance obligation.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

#### Market Risk – Analysis of Risk

79. Enbridge has calculated that if the GWP values provided in the GHG reporting regulation change to values that have been published more recently by the Intergovernmental Panel on Climate Change (“IPCC”)<sup>7</sup>, that its compliance obligation would remain materially the same at around 21.1 Mt CO<sub>2</sub>e.

80. Further analysis regarding Ontario’s supply and demand can be found in AI’s Carbon Market Report in Exhibit C, Tab 1, Schedule 1, Appendix A.

[REDACTED]

82. Further analysis on the impact of non-linkage with the WCI market is reflected in the analysis of price variability, and is summarized on Table 1 above.

<sup>7</sup> For information on GWPs, refer to <http://ghginstitute.org/2010/06/28/what-is-a-global-warming-potential/>

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Market Risk – Mitigation Measures

83. 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 any discussions about future regulatory changes. Enbridge also actively participates in industry associations such as Canadian Energy Partnership for Environmental Innovation (“CEPEI”) to maintain current on GHG reporting.

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Non-Compliance – Risk Identification

85. 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 for the corresponding compliance period. If an entity is short allowances relative to its obligation, it will be required to pay the cost to procure those allowances at the most recent clearing price at auction, as well as pay a fine of three times the current clearing price for non-compliance.
86. 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.
87. [REDACTED]  
[REDACTED] 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 of Risk

88. Enbridge notes that the cost of non-compliance is three allowances for every one allowance short from its compliance obligation. This would mean that if Enbridge was not in compliance at the end of the first compliance period, the Company would

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

need to purchase four allowances for each allowance it was short. Additional administrative monetary penalties may also apply<sup>10</sup>.

Non-Compliance – Mitigation Measures

89. The longer time period provided by the Regulation for surrendering allowances [REDACTED]

[REDACTED]  
[REDACTED].

90. Enbridge recognizes 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, and a governance structure.

91. Enbridge's governance plan 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

92. Enbridge has identified the following financial transaction risks:

- a. Counterparty credit risk; and,
- b. Offset compliance instrument risk.

93. [REDACTED]  
[REDACTED]

---

<sup>10</sup> Enbridge notes that at the time of this filing, regulations outlining applicable administrative monetary penalties were not yet available.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

- [REDACTED]
- [REDACTED]
- [REDACTED]
94. Funds paid by Enbridge for purchasing credits at auctions would be payable to the government of Ontario but would be held in trust with Deutsche Bank, which has been chosen by WCI as the custodian of both the Ontario and WCI Cap and Trade funds. Another counterparty credit risk which could occur is a default by Deutsche Bank. Should this occur, there is a risk that the funds held in trust could be subject to creditor risk.
95. The Regulation allows capped participants to obtain eight percent of their annual compliance obligation through the purchase of offsets. For a complete discussion on offsets, refer to Exhibit C, Tab 2, Schedule 1. As of the date of this filing, Ontario's offset regulation is not yet available, and the associated offset protocols are still under development. Due to the timing of the offset regulations and protocols, it is likely that there will be few offset credits available in 2017.
96. Offsets as compliance tools may possess risk due to the rules written into regulation. In California, offsets are designed in a way that there is invalidation risk, whereas in Québec this is not the case. This difference of approach to offset regulation makes it difficult to speculate on what the Ontario government may do, and if there will be an invalidation risk.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

Financial Transaction Risks – Analysis of Risk

[REDACTED]

[REDACTED]

[REDACTED]

Financial Transaction Risks – Mitigation Measures

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

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

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

Risk of Data Dissemination to Market Participants – Risk Identification

102. In order to avoid “tipping,”<sup>12</sup> Cap and Trade participants are prohibited under the Act from disclosing information, including future or past participation in auctions and bidding strategies.
103. Enbridge recognizes that it is one of the largest participants in the Ontario Cap and Trade market, 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.
104. While Enbridge is taking every effort to ensure that it follows the confidentiality requirements of the Act and Regulation, the Company notes that a certain amount of information on the Cap and Trade program is made available by California and Québec after each auction. Under section 64 of the Regulation, the MOECC will also release similar information after Ontario Cap and Trade auctions.
105. Information posted after a WCI auction includes:
- Total number of allowances available and sold at the auction;

---

<sup>12</sup> The act of providing material non-public information about a publicly-traded company to a person who is not authorized to have the information. Source:  
<http://www.investopedia.com/terms/t/tipping.asp#ixzz4PNYtoGAT>

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn



- Auction price statistics – auction reserve, settlement, maximum, minimum, mean and median;
- Total number of qualified bids divided by the total allowances available;
- Proportion of allowances purchased by compliance entities;
- Herfindahl-Hirschman Index (“HHI”) – a measure of the concentration of allowances purchased by winning bidders relative to the total sale of allowances in the auction; and,
- List of bidders who qualified to participate in the auction.

[REDACTED]

[REDACTED]

108. Additionally, information such as Enbridge’s throughput and information posted through submissions to the Board are publicly available. [REDACTED]

[REDACTED]

---

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

109. Enbridge recognizes that information available in the public realm makes Enbridge's compliance obligation, and procurement strategy, more apparent to other Cap and Trade participants than non-rate regulated participants. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Therefore, the closed markets as structured by the applicable rules, create the risk that Enbridge's compliance obligation may come with a drag on cost effectiveness that would not occur in a truly free and efficient market.

#### Risk of Data Dissemination to Market Participants – Analysis of Risk

110. While Enbridge considers this a key risk, it is difficult to determine what impact disclosure of data could have on the market.

111. Enbridge notes that every \$0.01 increase in the average cost per allowance paid results in an annual total increased cost of \$211,360.

#### Risk of Data Dissemination to Market Participants – Mitigation Measures

112. To mitigate against the risk of improper disclosures of market sensitive information – a critical factor in Enbridge not being subject to a suboptimal market position – the Company has established internal controls to protect our carbon procurement obligation position, the market and our stakeholders. A restricted group of employees will be privileged 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,

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

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.

113. Through an email communication to all employees on September 21, 2016, Enbridge has also informed all employees of the confidentiality requirements with respect to Cap and Trade. This is to ensure that even those employees who are not aware of restricted information, will still understand the confidentiality requirements surrounding Cap and Trade.

[REDACTED]

[REDACTED]

[REDACTED]

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

117. Significantly, the holding limit is a fixed formula that is not related to the size of an entity's obligation. It was developed in California where, in sharp contrast to Ontario's regime, the natural gas utilities received a significant portion of free allowances and were not the point of regulation for natural gas power producers. These policy design elements reduced exposure, of natural gas utilities regulated by the California Public Utilities Commission ("CPUC"), to the market. Even then, the CPUC elected to receive and treat in confidence the utilities' entire Compliance Plans, with the exception of the Communications and Outreach portions of their Plans, as well as related CPUC Decisions.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

TABLE DELETED

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Overall Risk Management Philosophy

121. Enbridge has completed a review of all the risks discussed in this exhibit based on the likelihood of occurrence and the ability of Enbridge's Compliance Plan to mitigate the risk should it occur. This analysis is based on our understanding of a number of inputs received throughout the year.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

123. As outlined in Exhibit C, Tab 1, Schedule 1, Enbridge will implement a 'Plan-Do-Check-Act' cycle for the implementation of its Compliance Plan, namely its procurement strategy. This cycle will assist the Company in identifying new risks and ensuring that new and existing risks are recognized and effectively mitigated.

124. Exhibit C, Tab 1, Schedule 1 identified tasks and responsibilities of the CPGG. This group will be responsible for reviewing natural gas sales volumes, carbon

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

market performance, and implementing adjustments to its carbon allowance procurement strategy. To ensure that the strategy meets the Board's guiding principles, it will be reviewed prior to and after auction participation. Enbridge will have the flexibility, under the Regulation, to adjust its procurement plans. Any adjustments will be subject to the rigorous internal governance processes that will be documented for full transparency to the Board in the Company's annual monitoring report.

125. [REDACTED]  
[REDACTED]  
[REDACTED] Furthermore, performance metrics will be defined and shared internally within Enbridge, which will ensure that emission allowance procurement activities are closely monitored. These performance metrics should minimize the risk of either an over- or under-procurement scenario. Additional information on governance is available at Exhibit C, Tab 1, Schedule 1.

Witnesses: M. Kirk  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
A. Welburn

### LONGER TERM INVESTMENTS

1. Although Enbridge's Compliance Plan is for 2017 only, the Company recognizes that there is a longer-term context within which it exists. Seeking to project out beyond the one-year Compliance Plan into the five to 10-year timeframe is an important aspect of developing the Company's market understanding and a critical step in its preparation for subsequent Compliance Plan submissions. The information detailed below includes examples of the type of long-term compliance and investment options that Enbridge may consider in subsequent years. The Company acknowledges that this information is being presented for contextual purposes, and notes that Enbridge is not looking for approval from the Board with respect to these options at this time.
2. Enbridge will divide its longer-term investments into two segments: customer-related investments and Company facility-related investments.
3. Inherently, any longer-term investment that Enbridge undertakes will aim to either reduce the absolute natural gas throughput or natural gas usage intensity. Enbridge adds numerous natural gas customers to its distribution network annually. Natural gas intensity is a metric that will enable Enbridge to identify usage per customer as opposed to total throughput. Said another way, Enbridge's total throughput may increase annually due to new customer additions. Customer-related abatement investments would therefore, aim to reduce customer natural gas intensity (or natural gas usage per customer).
4. A full discussion of risks, with a focus on shorter-term risks, is included in Exhibit C, Tab 4, Schedule 1.

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



5. Enbridge recognizes the need and its role in reducing Greenhouse Gas ("GHG") emissions. The company is interested in delivering long-term strategies and energy solutions that foster the development of a low-carbon economy. These areas of interest include:

- a. Publicly tracking and reporting on efforts to reduce direct and indirect GHG emissions;
- b. Delivering residential, commercial and industrial Demand Side Management ("DSM") programs, fuel switching options, low-carbon technology support and renewable energy integration for our natural gas customers to help them use energy more wisely, reducing their energy, carbon-related costs and individual carbon footprint;
- c. Investigating, in the context of the ongoing Integrated Resource Planning ("IRP") study, the broad-based DSM impacts and planning forecasts on infrastructure investment, the potential direct impact of DSM on subdivision planning, and the potential direct impact through targeted DSM to defer reinforcement projects;
- d. Building a portfolio of investments in renewable energy projects;
- e. Investing in the development and construction of decarbonization technologies, such as Power-to-Gas; and
- f. Working with governments, businesses, environmental organizations and communities on new solutions to address climate challenges.

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

6. Long-term compliance options may include:

Compliance Option	Description	OEB MACC
Renewable Natural Gas	The injection of pipeline grade biogas – created as a bi-product of agricultural activity, wastewater treatment sites, and refuse disposal sites – into the natural gas pipeline for use by all customers.	N/A
Demand Side Management (DSM) and Low-carbon technologies	The delivery of energy efficiency programming after the completion of the Board approved 2016 – 2020 DSM Plan. This may include initiatives in all market sectors representing energy efficiency retrofits for homes and businesses, control systems and behavioural programming, high efficiency/low carbon technology upgrades, and industrial process efficiency programs. Incorporating the effects of DSM, and potential other factors that may result in a reduction in natural gas throughput, and on future infrastructure planning efforts.	N/A
Fuel Switching	Fuel switching non-customers currently on propane and heating oil to either natural gas or electricity-based options; or switching current customers onto net negative emission solutions that may include geothermal, air source heat pumps, other renewables such as solar and wind, and district energy.	N/A
Fugitive/Venting Emission Reductions	Enbridge is reviewing opportunities to reduce fugitive and venting emissions, which may include asset replacement or upgrade projects, improved asset or work management practices and implementation of new technologies.	N/A
Other	Enbridge is constantly looking for and is open to ideas on other long-term emission reduction opportunities.	N/A

7. Enbridge has begun the process of considering long-term strategies to reduce facility-related and customer-related GHG emissions, as laid out in Exhibit C, Tab 3, Schedule 4, Exhibit C, Tab 3, Schedule 5, and Exhibit C, Tab 6, Schedule 1. It is the Company's expectation that any plans for longer-term investments will be

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

presented to the Board for consideration as part of future rate applications or project-specific leave to construct applications.

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

### NEW BUSINESS ACTIVITIES

1. In response to the *Climate Change Mitigation and Low-carbon Economy Act, 2016* (“Climate Change Act”) and the Province’s Climate Change Action Plan (“CCAP”), Enbridge has begun the process of evaluating longer-term Greenhouse Gas (“GHG”) emission reduction strategies, some of which would entail the investment in capital assets and infrastructure. This infrastructure is likely to be long lived and as such it would be appropriate to recover the cost of these assets and their related operating and maintenance costs over a number of years. This has been contemplated by the Board in its Framework, where the Board indicates that it expects natural gas distribution utilities to make longer-term investments related to GHG mitigation. The Board also states that where the life of these investments or activities is to extend beyond three years or longer, or at least as long as a single Compliance Period, the Board will consider such investments or activities as part of a utility’s long-term strategy for compliance.
2. As noted, Enbridge has begun to investigate potential longer-term GHG emission mitigation strategies. Some are likely to entail the investment in plant and equipment designed to either reduce fugitive emissions stemming from the operation of the Company’s natural gas distribution system. Others are intended to result in reduced GHG emissions due to reduced consumption of natural gas by its customers. Although the Company has a number of potential GHG mitigation initiatives currently under consideration, Enbridge is not in a position to present specific proposals related to these initiatives to the Board at this time.
3. The Company expects that over the course of the next year, specific plans for GHG mitigation programs and projects will evolve to the point where they can be presented to the Board with intended implementation in the next compliance

periods. Such plans will set out elements of the Company's longer-term GHG mitigation strategy and include forecasts of planned capital and operating expenditures related to such programs or projects. It is the Company's expectation that these plans and related investments will be presented to the Board for consideration as part of a future rate application or project specific leave to construct application.

4. As contemplated in the Framework, certain of the proposals to reduce emissions brought before the Board for consideration by the Company may constitute new business activities. Enbridge has not included any new business activities in this Compliance Plan. The Company expects that some of the carbon abatement initiatives it proposes in the future may constitute new business activities that may not necessarily fit within the scope of the Company's current regulatory construct. If such activities are proposed in a later compliance plan, the Company will seek the required authorization from the Board and/or the provincial government before commencing with such activities.

## MONITORING AND REPORTING

1. In its Framework, the Board sets out a requirement for annual reporting by the Utilities on the results of their Cap and Trade activities to support the Ontario Energy Board's (the "Board") assessment of future plans for cost-effectiveness and to identify whether the Utilities are improving their planning and delivering greater value to customers. As noted at page xi of Appendix A: Filing Guidelines for Natural Gas Utility Cap and Trade Compliance Plans, annual reports are required to include:
  - Auction transactions (including quantity, bidding price, settlement price and total cost)
  - Summaries of offsets and secondary market transactions
  - Any other cap and trade activities that the applicant participated in
  - Costs per tonne (\$/tCO<sub>2</sub>e) of each compliance instrument or activity
  - A comparison of costs of investing in GHG abatement activities versus procuring emissions units over the short-term and long-term
2. To address these metrics Enbridge proposes three report templates as a starting point, as illustrated later in this schedule for the annual monitoring report. The annual report will include a spreadsheet to capture all compliance instrument transactions throughout the year, a summary of the various compliance instruments noting their respective costs per tonne, and a review of the Compliance Plan forecasts versus actuals with a section to capture variance explanations. Supporting qualitative and quantitative documentation will also be submitted with the annual report which will allow the Board to better understand the execution and performance of the Compliance Plan.
3. In addition to these three report templates, Enbridge has proposed an additional performance metric in Exhibit C, Tab 3, Schedule 1 that it is prepared to provide in

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

its annual report. Enbridge will also disclose in the annual report its fulfillment of the governance that has been outlined in Exhibit C, Tab 1, Schedule 1. This will provide transparency about the Company's processes that promote plan optimization and prudence in decision making all of which is intended to protect the interests of consumers.

4. As set out in the Framework, Enbridge will file its 2017 annual monitoring report by August 1, 2018, to align with the Company's next Cap and Trade Compliance Plan. Furthermore, Enbridge will highlight legislated requirements for confidentiality when filing annual reports with the Ontario Energy Board.
5. As Enbridge becomes more familiar with Cap and Trade, it will work with the Utilities and the Board-established working group to consider and refine the metrics and facilitate monitoring and reporting activities.

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

## Proposed Reporting Templates

### 6. Compliance Instrument Transaction Ledger

The Compliance Instrument Transaction Ledger outlines the pertinent details to instrument transactions during the year including transaction date, compliance instrument type, quantity, bid price, settlement price per tCO<sub>2</sub>e, total cost of the transaction, a cumulative total of the GHG emission units in Enbridge's possession, and the running weighted average cost of compliance ("WACC")<sup>1</sup>. The Compliance Instrument Transaction Ledger template will expand to cover each month of the year. At the end of the year, it will provide a full record of the transactions undertaken.

<b>1. Compliance Instrument Transaction Ledger</b>								
<b>Month</b>	<b>Transaction Date</b>	<b>Compliance Instrument</b>	<b>Quantity (tCO<sub>2</sub>e)</b>	<b>Bidding Unit Price (\$/tCO<sub>2</sub>e)</b>	<b>Settlement Unit Price (\$/tCO<sub>2</sub>e)</b>	<b>Total Cost (\$)</b>	<b>Cumulative Inventory Balance (tCO<sub>2</sub>e)</b>	<b>Cumulative WACC (\$/tCO<sub>2</sub>e)</b>
Jan-17								
Jan-17								
Jan-17								
Jan-17								
Jan-17								
Feb-17								
Feb-17								
Feb-17								
Feb-17								
Feb-17								

*\*January and February shown for illustrative reasons, additional months to be added in submitted annual report*

<sup>1</sup> WACC is the weighted average cost of compliance (instruments).

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



## 7. Compliance Instrument Summary

The Compliance Instrument Summary provides an aggregated view of each compliance instrument. It outlines for each compliance instrument, the total quantity purchased during the year, the percentage that it makes up of the portfolio, the total cost and the cost per tonne.

2. Compliance Instrument Summary				
	Total Quantity Purchased	Percentage of Portfolio	Total Cost	Cost per Tonne (\$/tCO <sub>2</sub> e)
Auction Allowances				
Allowance Bi-laterals				
Allowance Futures				
Allowance Forwards				
Offsets				
Offset Futures				
Allowance Derivatives				
Totals				

## 8. Compliance Plan – Forecast versus Actual Summary

The Compliance Plan – Forecast versus Actual Summary is formatted based on the outline provided in the Framework. In the Company's annual report, both the "Plan" and the "Actual" columns will be populated for a consistent assessment of forecast versus actuals on a number of metrics. Enbridge also expects that in addition to quantitative data, qualitative information shall be provided where necessary to provide context on activities undertaken.

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

**3. Compliance Plan - Forecast versus Actual**

	<b><u>Plan</u></b>	<b><u>Actual</u></b>
Allowances (Auction Confidential and Market Sensitive)		
# of allowances procured		
Price of allowances		
Timing of procurement		
Total cost		
Cost per tonne of GHG		
Offset credits (Market Sensitive)		
# of offset credits procured		
Price of allowances		
Timing of procurement		
Total cost		
Cost per tonne of GHG		
Abatement activities - customer-related		
Type of program		
Total cost		
<i>GIF volume</i>		
<i>GIF price</i>		
GHG reduction		
Cost per tonne of GHG reduction		
Abatement activities - facility-related		
Type of program		
Total cost		
GHG reduction		
Cost per tonne of GHG reduction		

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

### CUSTOMER OUTREACH AND INFORMATION

1. Enbridge is committed to communicating with customers about changes that are expected to impact them and their bills. As a result, the Company proactively began communicating with customers about Cap and Trade in 2016.
2. In the Framework on page 35, the Ontario Energy Board (“Board”) 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.” Enbridge agrees.
3. The Framework specifically recognizes the “Utilities’ direct and ongoing relationship with their customers.” Given this, the Utilities have been entrusted with the determination about how best to communicate with their customers about Cap and Trade. Enbridge has duly noted the Board’s outreach objectives in developing its customer information plan. These objectives include:
  - 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.

### Cap and Trade Customer Outreach and Information 2016

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford

4. Enbridge began communicating about Cap and Trade with customers in 2016. Messages in 2016 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 will impact natural gas bills starting 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
  - e. The Board will review and approve Cap and Trade rates before we pass it through to customers
  - f. Business customers need to understand what Cap and Trade means to them and have been directed to: [Ontario.ca/capandtrade](http://Ontario.ca/capandtrade)
5. As additional details about Cap and Trade are known, the Company will update its messages.
6. The channels used to deliver messages in 2016 include bill inserts, the call centre, the bill and bill envelope and the Enbridge website. See attached August 2016 customer newsletter (Exhibit E, Tab 1, Schedule 1, Appendix B), November 2016 bill insert (Exhibit E, Tab 1, Schedule 1, Appendix C), the December 2016/January 2017 bill envelope message (Exhibit E, Tab 1, Schedule 1, Appendix D), and sample bill mock ups (Exhibit E, Tab 1, Schedule 1, Appenidix E).

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford

7. Enbridge provided information about Cap and Trade broken out by business and residential customers on its website.
8. Enbridge reached out to large volume businesses since cap and trade may affect these customers differently than mass market or business customers not eligible to participate in Cap and Trade directly.
9. In 2016, Enbridge shared information about Cap and Trade with large volume customers with volumes of more than 4 million cubic metres (m<sup>3</sup>) of natural gas in an effort to ensure that customers that potentially emit more than 10,000 tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) were aware that they may have to or may be able to voluntarily acquire their own customer-related allowances under Cap and Trade. The utility used a lower volume in an effort to capture large volume customers who may have other emissions the Company is not aware of since the Company recognizes that it does not have knowledge of total customer emissions from all sources.
10. The Company has asked these large volume customers to advise Enbridge if they are mandatory or voluntary participants in Cap and Trade.
11. Participation in Cap and Trade, as either a mandatory or a voluntary participant, will be confirmed with a declaration letter to make clear in which accounts the customer will hold 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. To raise awareness with business customers who may be mandatory participants or able to apply to be cap and trade participants, the Company provided updates by email and shared copies of the Ministry of the Environment and Climate Change

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford

(“MOECC”) Cap and Trade fact sheet with customers when it became available. The fact sheet included Cap and Trade deadlines and contact information for Ontario businesses with questions about GHG reporting requirements, the Compliance Instrument Tracking System Service (“CITSS”) system for Cap and Trade participants and the Cap and Trade program.

13. Enbridge also included Cap and Trade as a topic in its annual in person large volume customer meetings in June 2016. The Company invited the Ministry of the Environment and Climate Change’s Manager of the Cap and Trade Section, Air Policy Instruments and Program Design Branch, Climate Change and Environmental Policy Division to speak to customers at the event and participate in a question and answer period. The presentation is included in Exhibit E, Tab 1, Schedule 1, Appendix H. Enbridge presentations were also delivered to business customers to highlight the potential customer and facility-related rate impacts and the role of energy efficiency in reducing both Cap and Trade costs that they would otherwise pay as well as GHGs. The Enbridge presentations are included in Exhibit E, Tab 1, Schedule 1, Appendix F and Exhibit E, Tab 1, Schedule 1, Appendix G. Following these presentations, customers were also able to ask questions of presenters. The presentations were posted on the industrial customer portal for customers who did not attend in person. Customers were directed to [Ontario.ca/capandtrade](http://Ontario.ca/capandtrade) for specific Cap and Trade related questions including questions about GHG reporting.

#### **Cap and Trade Customer Outreach and Information 2017**

14. Enbridge will continue its efforts to proactively communicate about the Cap and Trade program. Attached in Exhibit E, Tab 1, Schedule 1, Appendix A is the 2017

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford

communication plan. This plan will be updated as additional information about Cap and Trade is known, including as the regulatory process evolves and as the Company receives customer feedback.

15. The Company will continue to leverage existing communication channels including the Company's website via a dedicated landing page ([enbridgegas.com/capandtrade](http://enbridgegas.com/capandtrade)), through the call centre and via bill inserts.
16. As proposed by the Board, Enbridge will include a new message on the bill to advise customers that applicable Cap and Trade costs will be included in the Delivery line on the bill. Starting in December 2016 a temporary message will be included on page 1 of the bill under the "Messages from Enbridge" section of customer bills. A Cap and Trade message will then shift to a permanent location as part of bill presentment anticipated in April 2017. Exhibit E, Tab 1, Schedule 1, Appendix E consists of draft layouts that illustrate the tentative location and progression of on bill messages. The message will highlight that applicable Cap and Trade charges are part of the 'Delivery to You' line on customer bills and direct customers to the website for information.
17. As directed by the Board in its July 28, 2016 early determination and subsequently released Framework, Enbridge will include both the customer-related and facility-related Cap and Trade rates in the tariff sheets available on the Company's website.
18. Research will be used where necessary to help ensure that Company communications about Cap and Trade are clear and resonate with customers.

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford

**Large volume customer communications and outreach**

19. The Board has noted that it is important to provide large volume customers with the information they need to better understand energy costs so that they can make appropriate choices about their energy use.
20. Enbridge will also ensure that tailored communications for large volume customers continue and are further developed and implemented to update them as necessary about rate changes and any other pertinent information. Communication will occur via direct communication through the Customer's Enbridge Account Executive, the website, email as well as large volume customer annual meetings. A webinar is planned to educate large volume customer about their bill and Cap and Trade charge. Future webinars may be held based on customer feedback. Business Account Executives will also be available to discuss specific billing questions with individual customers.
21. 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. Utilities are also expected to notify industrial and other large natural gas customers, along with gas-fired electricity generators, of the charges and any revisions to them.

To do this, Enbridge will leverage and expand existing communication processes for its Large Natural Gas Customers to include Cap and Trade information and updates. This communication will be led by Account Executives and will include regular email updates about rate changes listed in tariff sheets and other relevant information, one-on-one meetings and making annual requests for forecasted

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford



volumes in the subsequent calendar year. (Prior to Cap and Trade, forecasted volumes were requested from all large volume customers with the exception of unbundled power generators.)

22. These same channels will be used to reach direct purchase agent broker markets which manage some of Enbridge's large volume customers.
23. 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").
24. Activities undertaken in 2016 will continue in 2017 and these efforts will be refined as Enbridge becomes more familiar with Cap and Trade and receives feedback from Large Volume Customers, direct purchase agent broker markets and large volume customer Associations.

Witnesses: R. DiMaria  
D. McIlwraith  
C. Meyer  
F. Oliver-Glasford

## **Enbridge Gas Distribution**

### **2017 Cap and Trade Customer Outreach and Communication Plan**

#### **Context**

Enbridge takes communication with its customers seriously and 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 begins on January 1, 2017. Enbridge Gas Distribution has a compliance obligation set out in both the law and regulation.

As a result of Cap and Trade, there will be costs related to the GHG emissions from natural gas used in Ontario homes and businesses. In its February 2016 Budget, the Ontario government estimated the cost of Cap and Trade will be about 3.3 cents per cubic metre (m<sup>3</sup>). The rate charged to customers will be determined through a regulatory process, and be reviewed and approved by the Ontario Energy Board (OEB) before it is passed through to customers.

Most customers will experience this as a new cost in the Delivery charge of their natural gas bills. There will be Cap and Trade costs related the natural gas that Enbridge facilities use in the business to deliver natural gas to customers and the natural gas that a customer uses.

Some business customers with large emissions will be required, or will be able, to acquire their own customer-related allowances. The Company would not charge these customers for the customer-related Cap and Trade costs as a result.

Cap and Trade is new in Ontario and as a result the Company will refine this plan as it and its customers become more familiar with the program, as 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.

### **Target Audiences**

Cap and Trade program customer communications in 2017 will be focused on audiences including:

- Internal (primarily customer-facing staff)
  - Call centre/Large Volume Customer Account Executives
- Mass market customers
  - Residential customers
  - Low-income residential customers
  - Small business customers
- Business customers
  - Gas-fired power generators
  - Mandatory Cap and Trade participants
  - Customers who choose to opt-in as voluntary Cap and Trade participants
  - Potential Cap and Trade participants
- Customer Intervenors and Associations
- Media

### **Communication Themes**

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

1. How Cap and Trade will affect customer bills
  - The Company will communicate to customers about
    - How Cap and Trade fits into the government's climate change actions, how it will impact customer bills and that the government has indicated that the funds collected through Cap and Trade will go to programs to reduce GHG emissions.
    - The role of the Company including an explanation of facility-related costs
    - The Ontario Energy Board role in reviewing and approving Cap and Trade costs before they are passed through to customers and the annual true up process.
    - 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 highlight the role of energy efficiency in helping to reduce the GHG costs customers would otherwise pay.

**Communications Strategy**

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

- Call centre and employee scripts and messages
- Website
  - [Enbridgegas.com/capandtrade](http://Enbridgegas.com/capandtrade) (residential and business pages) with embedded government video about Cap and Trade and link to [Ontario.ca/capandtrade](http://Ontario.ca/capandtrade)
  - Interactive bill (add Cap and Trade reference to “Delivery to You” description)
- Tariff Sheets
- Bill insert(s)
- On bill messages
- On bill envelope message
- Media communications
- Presentations
- Engagement with social agencies delivering programs to low income customers and representatives such as the Low-Income Energy Network (LIEN) and Vulnerable Energy Consumers Coalition (VECC)
- Links to the Government’s Cap and Trade website ([Ontario.ca/capandtrade](http://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 including the annual Large Volume Customer Meeting, Account Executive interactions such as one-on-one meetings, regular 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 in 2017 and throughout the Cap and Trade compliance period which extends to the end of 2020. The 2017 schedule below will be updated in part based on customer feedback. For example, a bill insert is budgeted however timing will be determined based on customer feedback so that its content can target any areas requiring clarification or additional information.

Month	Communication tactics include:
December 2016	<ul style="list-style-type: none"> <li>Account Executives email rate update to large volume customers including gas fired generators</li> <li>Tentative large volume customer webinar</li> <li>On bill message</li> <li>On bill envelope message</li> <li>Update website as required</li> <li>Update call centre scripts as required</li> <li>Cap and Trade rates in tariff sheets on website (when approved)</li> <li>Tentative large volume customer webinar</li> </ul>
January 2017	<ul style="list-style-type: none"> <li>On bill message</li> <li>On bill envelope message</li> <li>Updated website including cap and trade reference in interactive bill</li> <li>Update call centre scripts as required</li> <li>Update in existing email to large volume customers including gas fired generators if required</li> </ul>
February 2017	<ul style="list-style-type: none"> <li>Update in existing email to large volume customers including gas fired generators if required</li> <li>On bill message</li> </ul>
March 2017	<ul style="list-style-type: none"> <li>On bill message</li> <li>Update in existing email to large volume customers including gas fired generators if required</li> </ul>
April	<ul style="list-style-type: none"> <li>Bill presentment updated to include ongoing cap and trade message on bill</li> <li>Update in existing email to large volume customers including gas fired generators if required</li> </ul>
May	<ul style="list-style-type: none"> <li>Fall large volume customer meeting (Date TBC)</li> <li>Update in existing email to large volume customers including gas fired generators if required</li> </ul>
June	<ul style="list-style-type: none"> <li>Update in existing email to large volume customers including gas fired generators if required</li> </ul>
July	<ul style="list-style-type: none"> <li>Update in existing email to large volume customers including gas fired generators if required</li> </ul>

Month	Communication tactics include:
August	<ul style="list-style-type: none"><li>• Budget billing program communications to help customers create rate predictability</li><li>• Update in existing email to large volume customers including gas fired generators if required</li></ul>
September	<ul style="list-style-type: none"><li>• Update in existing email to large volume customers including gas fired generators if required</li></ul>
October	<ul style="list-style-type: none"><li>• Update in existing email to large volume customers including gas fired generators if required</li></ul>
November	<ul style="list-style-type: none"><li>• Update in existing email to large volume customers including gas fired generators if required</li></ul>
December	<ul style="list-style-type: none"><li>• Update in existing email to large volume customers including gas fired generators if required</li></ul>



## Connecting With Our Customers

August 2016



### Is Your Heating System Ready for Winter?

With summer's warm weather, you're probably not thinking about heating your home. However, your family's safety and comfort depends on the condition of your heating system.

Having your furnace and other natural gas appliances inspected by a certified technician will help identify any repairs or adjustments to be made before the cold weather arrives.

A well-maintained furnace is less likely to create dangerous carbon monoxide (CO) inside your home or to break down on the coldest days of the year. It will also run more efficiently, helping you use less natural gas and save money.

We don't inspect or service natural gas appliances, but we do have tips to help you find a technician at [enbridgegas.com/findcontractor](http://enbridgegas.com/findcontractor).



### Did you know?

- CO is a leading cause of accidental poisonings in Ontario every year.
- CO alarms are the law in Ontario.

Learn more at [enbridgegas.com/cosafety](http://enbridgegas.com/cosafety).

### Follow Us



Follow [@enbridgegasnews](https://twitter.com/enbridgegasnews) to stay up to date with company news, events, natural gas safety tips and energy saving programs.



We recently launched our Instagram account. Search for '[enbridgegas](https://www.instagram.com/enbridgegas)' on the app or website to follow us.

## Budget Billing Plan – Manage Winter Heating Costs

**BBP**

Typically, about 60 per cent of natural gas use occurs between December and March, and our Budget Billing Plan (BBP) can help you avoid higher bills in those months. BBP doesn't reduce your yearly gas charges, but spreads them out more evenly over 10 installments from September to June.

In July, you're billed a final BBP installment, which reflects the difference between the installments you were billed through your plan and your charges for gas used. In August, you're billed for the gas you use. Not already on BBP? Now is the best time to register to maximize the benefits of the plan.

### September 2016 Budget Billing Plan (BBP) Installments

If you are already on BBP, the new plan starts automatically in September. We review and revise monthly BBP installment amounts for the new plan.

The new monthly installment will be calculated to reflect normal winter gas usage and anticipated natural gas rates. You may see that your BBP amount has increased compared to the end of 2015-2016 plan. This is mainly a result of a warmer than normal winter in 2015-2016.

To learn more, or to register, visit [enbridgegas.com/BBP](http://enbridgegas.com/BBP).

## Cap and Trade in Ontario

### What is cap and trade?

Starting in 2017, the Province of Ontario will begin a cap and trade program for greenhouse gas (GHG) emissions which is intended to help fight climate change by reducing the emissions allowed across Ontario.

The government has indicated that it will then use the money generated from the sale of GHG allowances to pay for environmental initiatives that reduce GHGs, such as energy efficiency retrofits which help reduce energy use.

### How will cap and trade affect you?

As a natural gas distributor, Enbridge Gas Distribution will be required by the government to buy GHG allowances to cover the total GHG emissions for the natural gas consumed by all of our residential and most of our business customers.

The cost of these purchases will be passed back to customers. The government has estimated that

the cost of cap and trade on natural gas bills will be about 3.3 cents per cubic metre—that's about \$79 per year for a typical Enbridge residential customer\*. The rate will be adjusted periodically to reflect changes in the cost of GHG allowances that we have to purchase. The cost to you will depend on the actual price of allowances and how much natural gas you use. The Ontario Energy Board will review and approve cap and trade costs.

Some businesses with large GHG emissions may need, or will be able, to purchase their own emissions allowances. So, it's important for business customers to understand what it means to them.

Visit [enbridgegas.com/energyefficiency](http://enbridgegas.com/energyefficiency) for energy saving tips and how, together, we can help you lower your carbon footprint and save money.

For more information about cap and trade, watch for updates with your bill and visit [enbridgegas.com/capandtrade](http://enbridgegas.com/capandtrade) or [ontario.ca/capandtrade](http://ontario.ca/capandtrade).

\*Calculations are based on estimated allowance costs only, do not include administration costs and assume that a typical residential customer uses about 2,400 cubic metres of natural gas a year for home and water heating.



**Visit Us**  
[enbridgegas.com](http://enbridgegas.com)

Register for myEnbridge to manage your account online.



**Follow Us On Twitter**  
[@enbridgegasnews](https://twitter.com/enbridgegasnews)



**In An Emergency**  
**1-866-763-5427**

Call us 24/7 to report the smell of gas or any other natural gas emergencies.



**Call Us**  
**1-877-362-7434**



# Learn how cap and trade will affect your bill and what you can do to manage it.



In January, Ontario begins a cap and trade program as part of changes intended to lower levels of greenhouse gas (GHG) emissions across the province. As part of the program, there will be costs related to the GHG emissions from natural gas used in homes and businesses.



The government has indicated that the funds collected through cap and trade will go to programs – like energy conservation – to reduce GHG emissions.



We have information and programs that may help you reduce energy use and your overall energy and GHG emission costs. Learn more at **[enbridgegas.com/capandtrade](http://enbridgegas.com/capandtrade)** and watch your bill for updates.

**For our customers, cap and trade means you will pay for GHG emissions related to your use of natural gas.** As your natural gas distributor, the government requires us to acquire GHG allowances to cover the emissions for the natural gas consumed by our residential and business customers. The cost of these allowances will be determined in part by the market and passed through to customers based on the amount of natural gas they use. Some businesses with large emissions may need, or will be able, to acquire their own emission allowances.

**The government estimates that cap and trade will cost about 3.3 cents per cubic metre (m<sup>3</sup>)\*. The cost to you will be determined by multiplying the cap and trade rate by the number of m<sup>3</sup> you use. The amount of natural gas you use is shown on your bill.** The Ontario Energy Board will review and approve cap and trade rates before we pass it through to you. The charges to recover emission costs will be included in the Delivery to You charge on your bill. If the charges we collect are higher or lower than the actual costs, your bill will be adjusted accordingly. Approved cap and trade rates will be available on our website.

**Did you know? Natural gas is the cleanest burning conventional fuel. It is also affordable, costing about 65% less than electricity and oil for home and water heating.\*\***

\*Estimated cap and trade cost only. A typical residential customer uses 2,400 m<sup>3</sup> of natural gas for home and water heating per year.

\*\*On average over five years based on Enbridge Gas residential rates October 1, 2016, Toronto May 1, 2016 electricity rates and Statistics Canada oil prices as of August 2016. Calculated for the equivalent energy consumed by a typical residential customer. Includes all service, delivery and energy charges. Excludes HST.

Before you start digging

**STOP**

Before clearing a blocked sewer

Call Ontario One Call 1-800-400-2255

30264-E-0020

ENBRIDGE®

Enbridge Gas Distribution  
PO BOX 4570

Markham, Ontario  
L3R 6G9

CANADA POSTES CANADA  
Postage paid Lettermail  
Port payé Poste-lettres  
7009271  
Scarborough

Learn how Ontario's cap and trade will affect your bill and what you can do to manage it. [enbridgegas.com/capandtrade](http://enbridgegas.com/capandtrade)

1 1/8 x 3 7/8  
left: 7/8" from bottom: 1 1/16

Visit [enbridgegas.com](http://enbridgegas.com)

NO INK

4 1/4"

4 1/4"

10 1/2"

10 1/2"

10 1/2"

**QTY= 4 000 000**

COLOR SEPARATION FOR VISUAL ONLY AND NOT FOR FINAL RESULT (SEE PMS BREAKDOWN)											
<p><b>1. CHECK:</b></p> <p>Spelling, Copy Position, Window(s) (Size(s) &amp; Position(s)), PMS # S &amp; Color Breaks.</p> <p><input type="checkbox"/> OK - AS IS</p> <p><input type="checkbox"/> OK - WITH CORRECTIONS (indicated on Proof)</p> <p><input type="checkbox"/> CORRECT AND SUBMIT NEW PROOF</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="padding: 5px;">COLOUR(S)</th> <th style="padding: 5px;"></th> <th style="padding: 5px;"></th> <th style="padding: 5px;"></th> <th style="padding: 5px;"></th> </tr> <tr> <td style="padding: 5px;">DIE LINE</td> <td style="padding: 5px;">PMS 1235</td> <td style="padding: 5px;">PMS 425</td> <td style="padding: 5px;">PMS 185</td> <td style="padding: 5px;"></td> </tr> </table> <p>PMS # _____</p>	COLOUR(S)					DIE LINE	PMS 1235	PMS 425	PMS 185	
COLOUR(S)											
DIE LINE	PMS 1235	PMS 425	PMS 185								
<p>Inside tint: (artline)    YES <input checked="" type="checkbox"/> PMS 430    NO <input type="checkbox"/></p> <p>Double side seams    OUTSIDE <input type="checkbox"/>    INSIDE <input checked="" type="checkbox"/></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Paper _____ WHITE WOVE _____ Weight _____ 24</td> </tr> <tr> <td style="padding: 5px;">Certified FSC Paper    YES <input type="checkbox"/>    50% <input type="checkbox"/>    100% <input type="checkbox"/></td> </tr> <tr> <td style="padding: 5px;">Packaging / Number of Units</td> </tr> <tr> <td style="padding: 5px;"><input checked="" type="checkbox"/> Box    <input type="checkbox"/> 50    <input type="checkbox"/> 100    <input type="checkbox"/> 250</td> </tr> <tr> <td style="padding: 5px;"><input type="checkbox"/> Shrink Wrap    <input type="checkbox"/> 500 Other _____ BULK/FLAT _____</td> </tr> </table>	Paper _____ WHITE WOVE _____ Weight _____ 24	Certified FSC Paper    YES <input type="checkbox"/> 50% <input type="checkbox"/> 100% <input type="checkbox"/>	Packaging / Number of Units	<input checked="" type="checkbox"/> Box <input type="checkbox"/> 50 <input type="checkbox"/> 100 <input type="checkbox"/> 250	<input type="checkbox"/> Shrink Wrap <input type="checkbox"/> 500 Other _____ BULK/FLAT _____					
Paper _____ WHITE WOVE _____ Weight _____ 24											
Certified FSC Paper    YES <input type="checkbox"/> 50% <input type="checkbox"/> 100% <input type="checkbox"/>											
Packaging / Number of Units											
<input checked="" type="checkbox"/> Box <input type="checkbox"/> 50 <input type="checkbox"/> 100 <input type="checkbox"/> 250											
<input type="checkbox"/> Shrink Wrap <input type="checkbox"/> 500 Other _____ BULK/FLAT _____											
<p><b>2. PLEASE SIGN AND DATE THIS PROOF</b></p> <p>We cannot produce your order without your signed approval.</p> <p>Signature: _____ Date : ____/____/____</p>											
<p># DOCKET: _____ DATE: 31-10-2016</p> <p>Form: 30264-E-0020</p>											
<p>Proof # <input checked="" type="checkbox"/><input checked="" type="checkbox"/><input checked="" type="checkbox"/> PREPARED BY: OLIVIER</p> <p style="margin-left: 100px;">1    2    3</p>											



000001 000000003

JANE DOE  
500 CONSUMERS RD.  
NORTH YORK ON M2J 1P8

Bill Date

Account Number

00 00 00 00000 0

Billing Period

Service Address

500 CONSUMERS RD.  
NORTH YORK ON M2J 1P8



## Summary of All Charges (Taxes Included)

Balance from previous bill

Payment Received

Balance forward & past due if paid, thank you

BBP Installment

Amount due now

Late payment effective date\*



[enbridgegas.com](http://enbridgegas.com)



Contact Us

Enbridge Gas Distribution Inc.

**EMERGENCY, SUCH AS THE SMELL OF  
GAS: 1-866-763-5427**

For all other Enbridge Inquiries:

Call: 1-877-362-7434

Email: [customercare@enbridge.com](mailto:customercare@enbridge.com)

Fax: 1-888-711-1211

Mail: PO Box 650, Scarborough  
ON, M1K 5E3



## Messages From Enbridge

Under Ontario's cap and trade program, there are now costs to you for greenhouse gas (GHG) emissions related to your natural gas use and delivery of gas to you. 'Delivery to You' includes applicable cap and trade charges. Visit [enbridgegas.com/capandtrade](http://enbridgegas.com/capandtrade).

All payments made to Enbridge are accepted under the express condition that the Company may demand payment of account deficiencies irrespective of any conditions attached to the payment by the customer.

### IMPORTANT NOTICE

**GAS RATES HAVE CHANGED**

Please see the enclosed notice for further details.

Make Payments to: PO Box 644  
Scarborough ON M1K 5H1

# Sample Rate 1 Future Bill Presentment of Cap and Trade (illustration only)

Filed: 2016-11-15, EB-2016-0300, Exhibit E, Tab 1, Schedule 1, Appendix E, Page 2 of 2



Bill Date

Billing Period

Page 2 of 4



## Charges For Natural Gas

Customer Charge  
Delivery to You  
Site Restoration Clearance  
Transportation to Enbridge  
Gas Supply Charge  
Cost Adjustment

### Charges for Natural Gas



## Budget Billing Plan (BBP)

BBP Installment +HST  
HST (Registration 105205140 RT0001)

### Total BBP Installment

#### BBP Overview

Charges for natural gas as of last bill  
Charges for natural gas this bill  
Total natural gas charges to date  
BBP installments billed to date

BBP balance



## Meter Reading Information

Meter Number  
Estimated Reading  
Previous Reading

Gas used this period (m<sup>3</sup>)  
PEF Value  
Adjusted m<sup>3</sup>

Your Bill is based on either actual metered consumption or estimated consumption.

'Delivery to You' includes applicable cap and trade charges. [enbridgegas.com/capandtrade](http://enbridgegas.com/capandtrade)



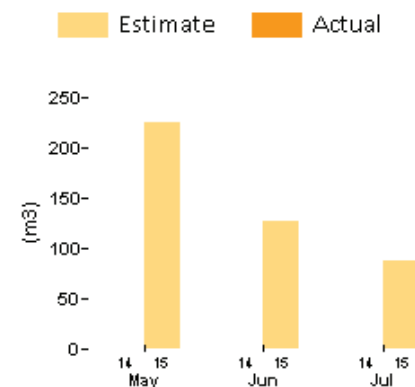
## Natural Gas Supply Information

Natural gas supplied by Enbridge  
Your gas supply rate  
Gas cost adjustment

Total effective gas supply rate



## Comparing Your Gas Consumption



# Cap and trade for business customers

A natural gas distribution perspective

June 2016

Chris Meyer, Manager, Communications and  
Stakeholder Relations, Carbon Strategy  
Enbridge Gas Distribution



# Outline

- Cap and trade overview
- Types of participants
- Potential costs
- Key dates & resources
- Lower-carbon future

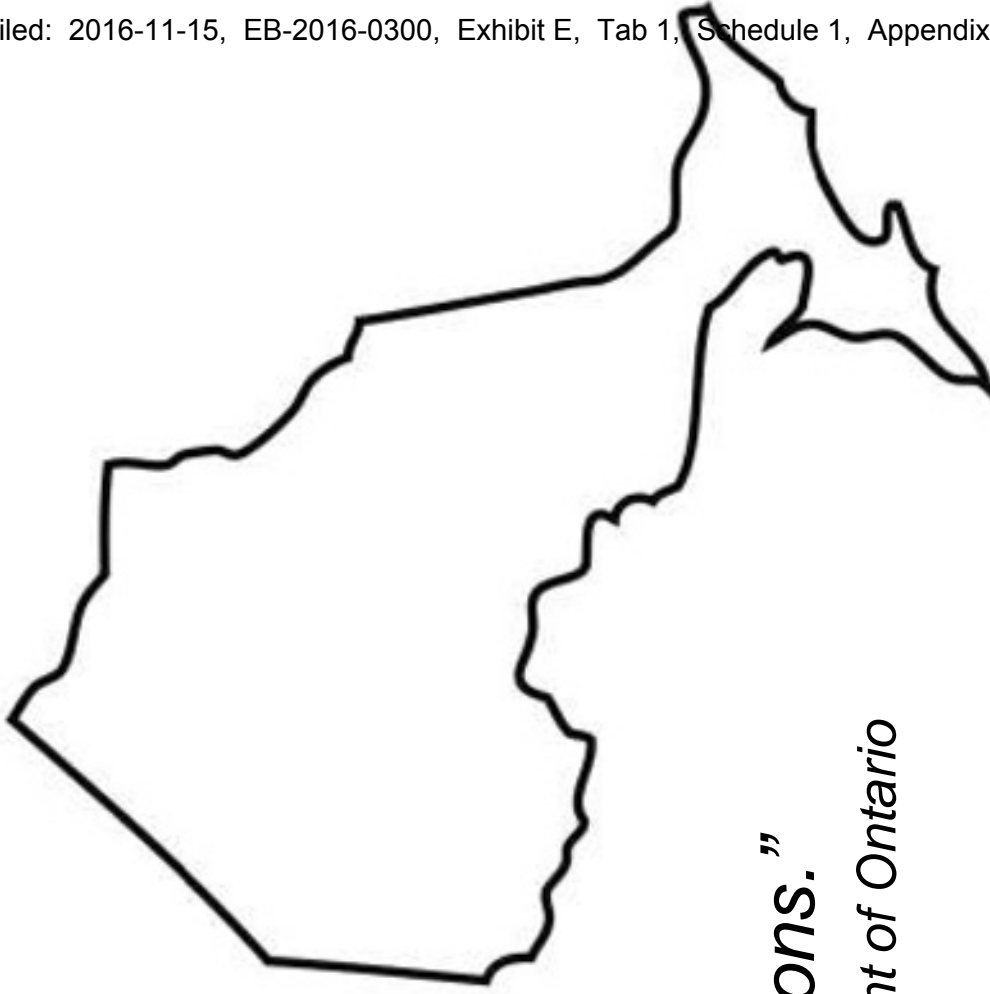
*The material contained in this presentation is being provided as general information only and is not intended as specific market or legal advice. Information in this presentation is based on currently available information and is subject to change. Participants are encouraged to seek specific advice and guidance from their own advisors.*



# Background

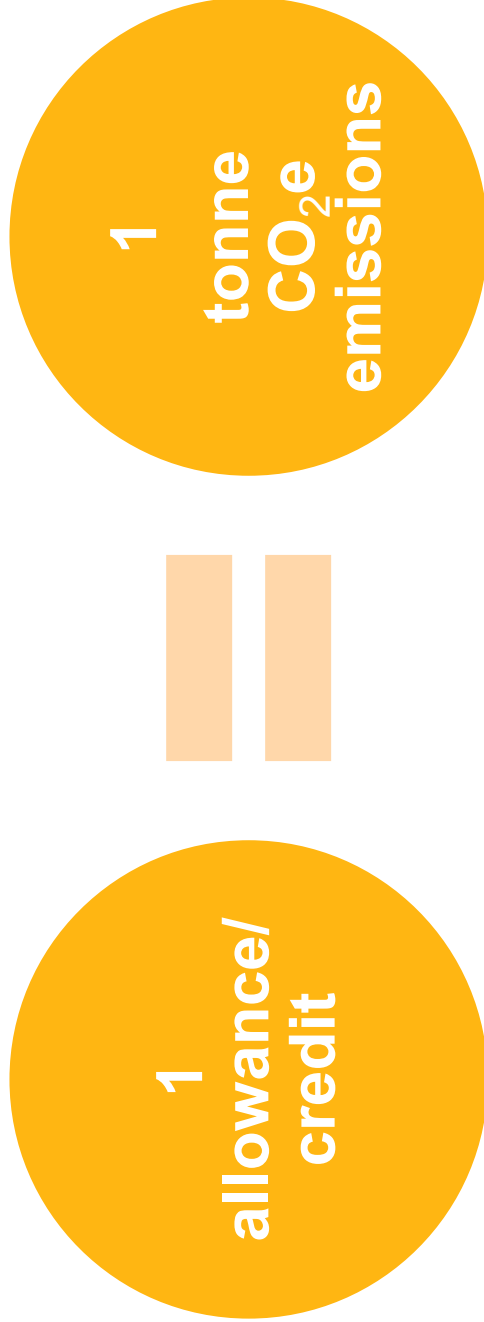
*“Ontario’s  
cap and trade program  
is designed to help  
fight climate change,  
and reward businesses  
that reduce their  
greenhouse gas emissions.”*

*Government of Ontario*



# Fundamentals

- “Capped participants” must acquire permits, called allowances or credits, to match their greenhouse gas (GHG) emissions



# “Cap” and “trade”

- The total number of allowances created by the government goes down ~4.5% each year **(the “cap”)**

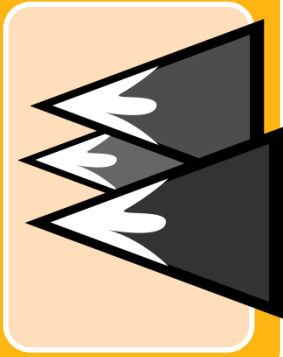
2020	2030	2050
15% below 1990	37% below 1990	80% below 1990

- All allowances are created by the government and entities can sell allowances to other entities **(the “trade”)**

# Participants in cap and trade

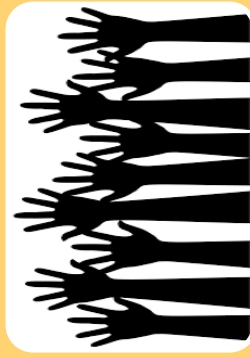
## Mandatory “capped” participants

- Fuel distributors (Oil, Propane, Diesel) and NG distributors
- Electricity Importers
- Large Final Emitters (>25K tonnes CO<sub>2</sub>e per year)



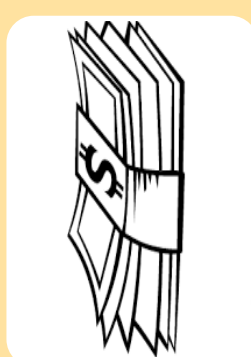
## Voluntary “opt-in” participants

- Emitters between 10 – 25K tonnes CO<sub>2</sub>e per year may decide to opt-in as a participant
- If not, NG utility responsible for acquiring NG related allowances



## Market participants

- Any entity that wants to play in the carbon market (i.e. banks, etc.)



# Free allowances/ early reduction credits

## Free Allowances

- Only for eligible cap and trade participants who apply
- Details posted on government's EBR Registry 

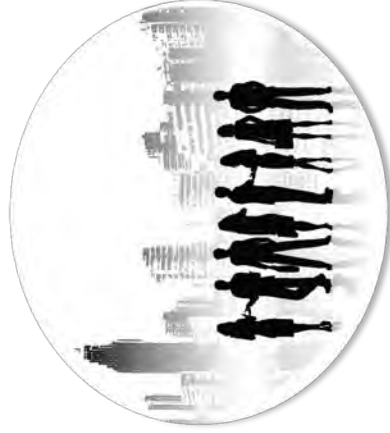
## Early Reduction Credits (ERCs)

- Details expected this year
- Under draft regulation natural gas utilities not eligible


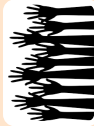
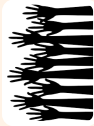

**METHODOLOGY FOR THE  
DISTRIBUTION OF ONTARIO  
EMISSION ALLOWANCES FREE  
OF CHARGE**  
May 16, 2016

# Non cap and trade participants

- Enbridge responsible for acquiring NG-related allowances for customers <25,000 tCO<sub>2</sub>e/year
  - Costs on natural gas bill (volumetric basis)
- Exceptions:**
- Customers between 10,000 and 25,000 tCO<sub>2</sub>e/year who “opt-in” as voluntary participants
    - Natural gas fired generators cannot opt-in

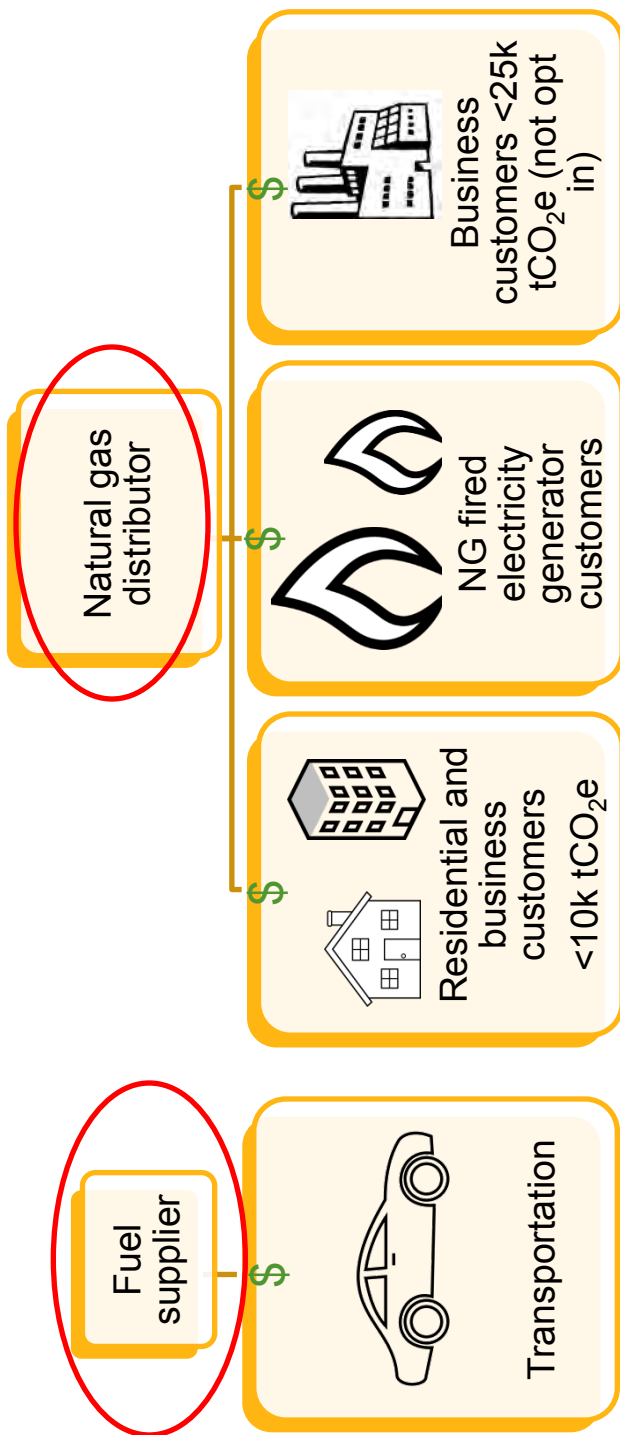


# Potential cost scenarios

Customer type	Annual volume ("typical customer")	Potential annual cap and trade charge (on NG bill)	Potential annual cap and trade cost (customer manages)
A) Residential	 2,400 m <sup>3</sup>	\$79	
B) Light Industrial	22,606 m <sup>3</sup>	\$746	
C) Medium Industrial (not voluntary participant)	 9,976,120 m <sup>3</sup>	\$329,212	
D) Medium Industrial (voluntary participant)	 9,976,120 m <sup>3</sup>		<b>FREE ALLOWANCES?</b> <del>\$329,212</del>
E) Large Industrial	 69,832,850 m <sup>3</sup>		<b>FREE ALLOWANCES</b> <del>\$2,304,484</del>

- Based on \$0.033/m<sup>3</sup> of natural gas estimated by government
- Dollar amounts shown do not include free allowances, early reduction credits, energy conservation, admin costs etc.
- Assumes cap and trade costs charged to non-capped customers by Enbridge would be based on actual metered natural gas consumption
- Costs may change over time

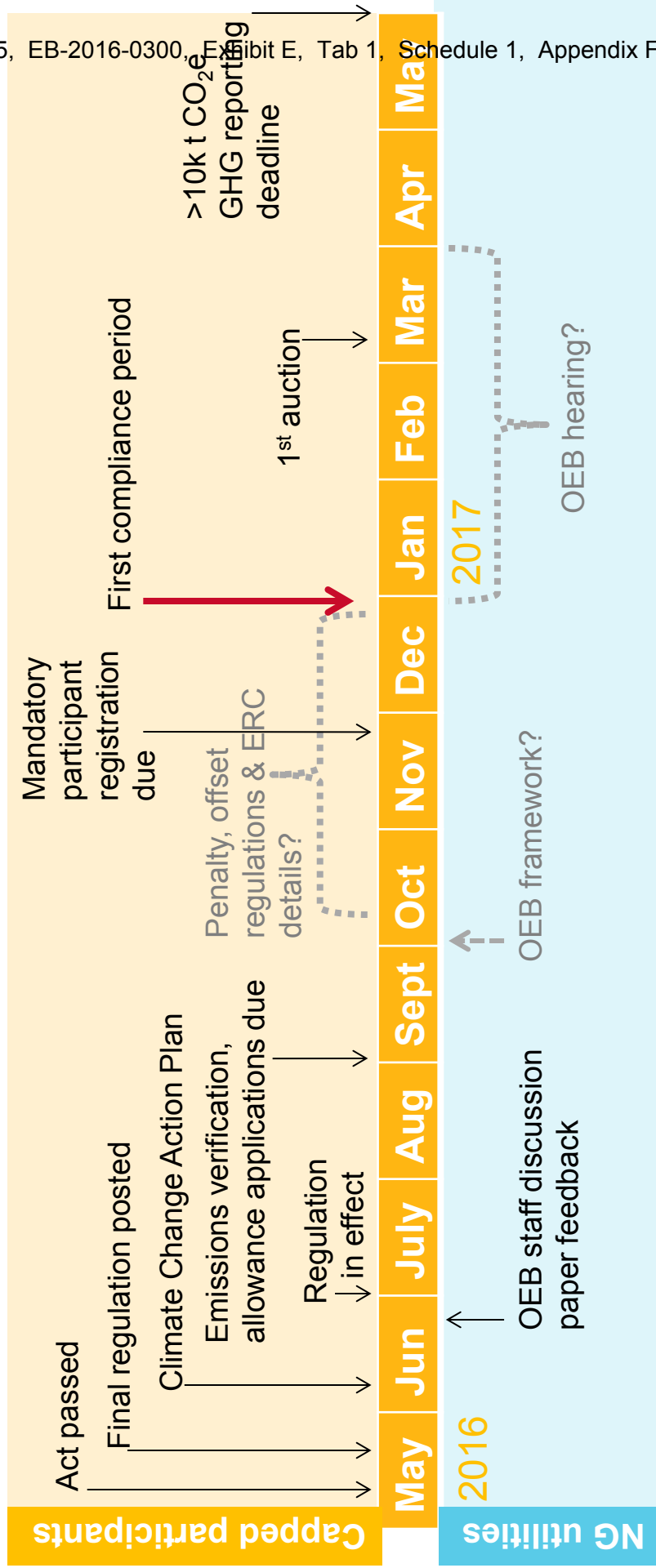
# Point of regulation/ compliance obligation





# Select timelines

- Capped participants need to be aware of key dates in 2016



- NG utilities have additional regulatory requirements

# Enbridge Gas levers for a lower carbon economy

- Enbridge is positioned to provide our customers solutions and maintain a sustainable business
- Enbridge has several key levers for demonstrating and implementing carbon reduction
- These levers assist our customers transition to a lower carbon economy

**Energy  
Efficiency  
and  
Conservation**

**Greening the  
Natural Gas  
Grid**

**Natural Gas  
Vehicles**

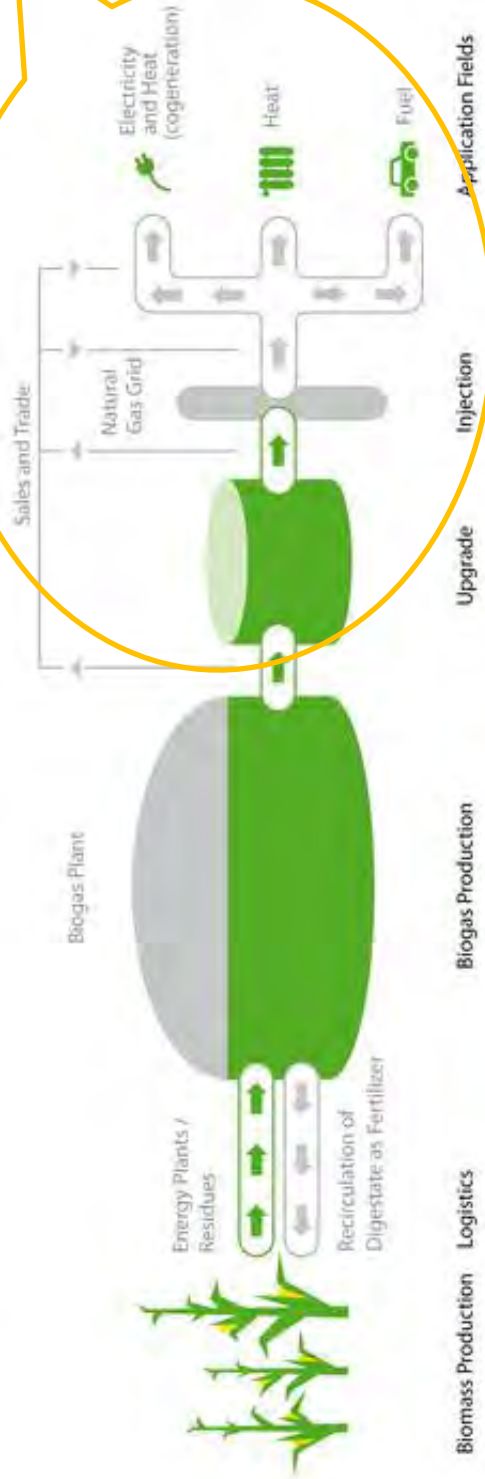
**Innovation  
and  
Technology  
Development**



# Greening the NG grid

- Renewable natural gas (RNG) can be part of a diversified supply to meet Ontario's renewable energy needs
- Can be created from different sources (i.e. landfill, municipal organic waste, agricultural waste, wastewater treatment facilities)

Role for natural gas utilities in upgrading, injection and distribution of Ontario's biogas supplies as RNG

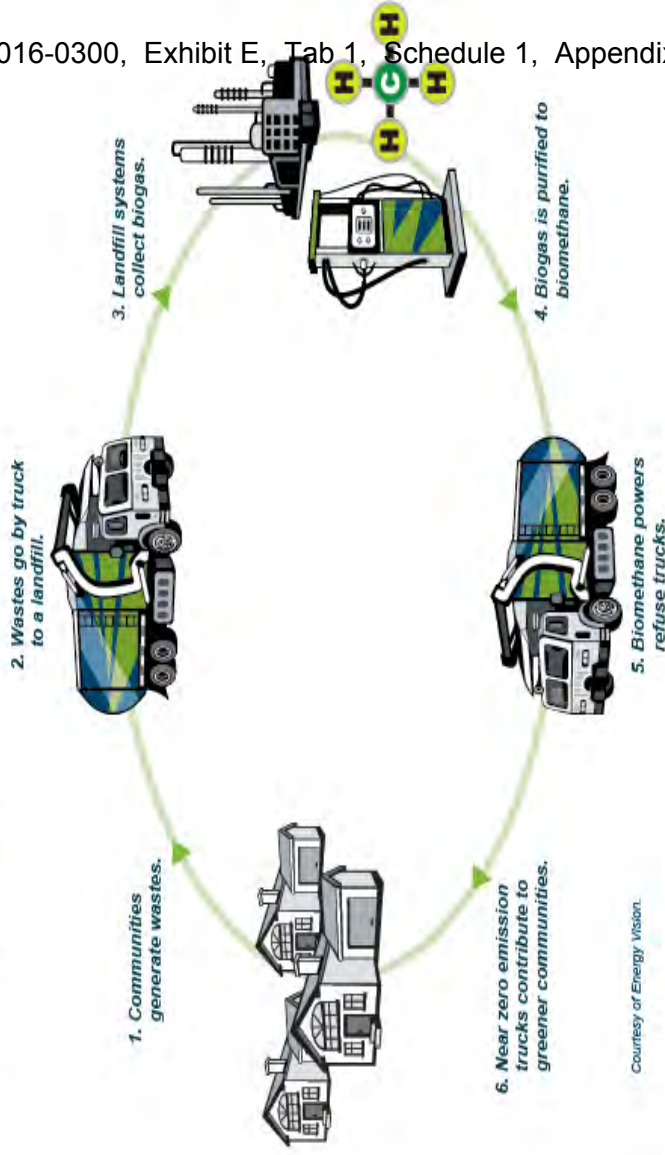


# Greening the NG grid (con't)

- Benefits of incorporating RNG in Ontario's pipeline network:

- Uses existing infrastructure
- Less expensive than renewable electricity
- Not intermittent / does not need to be backed up
- Can easily be stored

## RENEWABLE NATURAL GAS CYCLE



# NG for transportation

- Transportation = ~34% of Ontario's total emissions
- Natural gas has up to 25% lower GHG emissions and is up to 40% less expensive than diesel or gasoline
- Untapped GHG emissions reduction potential in manufacturing and freight as well as rail and marine
- If 10% of transportation fuel replaced by NG, Ontario could reduce GHG emissions b/w 1.5 and 4.2 Mt CO<sub>2</sub>e/yr
  - Results depend on levels of renewable gas blending (up to 40%)



# Cap and trade resources

- **Government:**
  - [Ontario.ca/capandtrade](http://Ontario.ca/capandtrade)
- **Specific industry associations**
- **Enbridge Gas:**
  - [Enbridgegas.com/capandtrade](http://Enbridgegas.com/capandtrade)
  - [Enbridgegas.com/businesses/energy-management](http://Enbridgegas.com/businesses/energy-management)



June 2016

# Regulatory Update

June 2016

Anton Kacienik  
Rate Research & Design  
Regulatory Affairs



## Agenda

---

- 2016 Final Rates (July 2016)
- July 2016 Quarterly Rate Adjustment (QRAM) (July 2016)
- Disposition of 2015 Deferral & Variance Account Balances (October and November 2016)
- Implementation of Cap & Trade Charges (January 2017)



## 2016 Rates

- Annual Rate Case determines distribution rate and service changes
  - 2007 Cost of Service (COS)
  - Incentive Regulation (IR) from 2008-2012
  - 2013 Cost of Service (COS)
  - 2014 – 2018 Custom IR
  
- 2016 impact mostly a function of the GTA project and an increased DSM budget

Year	Average Impacts
2007	~3.0%
2008-12	~0.5%
2013	~0%
2014	~ (1.0)%
2015	~ 1.0%
2016	~ 5.0%

## 2016 Rates

---

2016 Interim Rates: Implemented January 1, 2016  
Revenue deficiency of \$79.3 M

DSM Decision: Will be implemented July 1, 2016  
Additional deficiency of \$21.3 M

2016 Final Rates:  
Total Deficiency of \$100.9

## 2016 Rates

Rate Class	Col. 1	Col. 2	Col. 3
	Interim	Final	Total
	<u>T-Service Rate Impact</u>	<u>T-Service Rate Impact</u>	<u>T-Service Rate Impact</u>
1	4.3%	0.8%	5.1%
6	4.1%	1.3%	5.4%
9	1.1%	0.0%	1.1%
100	1.7%	0.0%	1.7%
110	1.9%	1.0%	2.9%
115	1.1%	1.6%	2.6%
135	2.3%	3.5%	5.8%
145	1.9%	3.4%	5.3%
170	1.4%	1.2%	2.6%
200	2.9%	0.1%	3.0%
	<u>Delivery Rate Impact</u>	<u>Delivery Rate Impact</u>	<u>Delivery Rate Impact</u>
125	9.9%	0.5%	10.4%
300	3.0%	0.0%	3.0%

## **Final Rate Implementation (in conjunction with July 2016 QRAM)**

### **Rider E: Revenue Adjustment Rider**

- ✓ Applicable to volumes from July to September 2016

Recovers \$14.2 M of the \$21.3 M. This amount represents the revenue for the January to June 2016 period.

For LV customers Rider E unit rates approx. 0.25 c/m<sup>3</sup>.

## July 2016 Quarterly Rate Adjustment (QRAM)



- Quarterly review of upstream cost changes and adjustment of rates to reflect market changes
- Increase in gas supply charges from April 1, 2016 QRAM to July 1, 2016 QRAM
  - Increase from approx. 9.2 ¢/m<sup>3</sup> to 9.6 ¢/m<sup>3</sup>
- Increase in Transportation and Load Balancing charges
- Decrease to Rider C (Gas Cost Adjustment Rider) for most customers

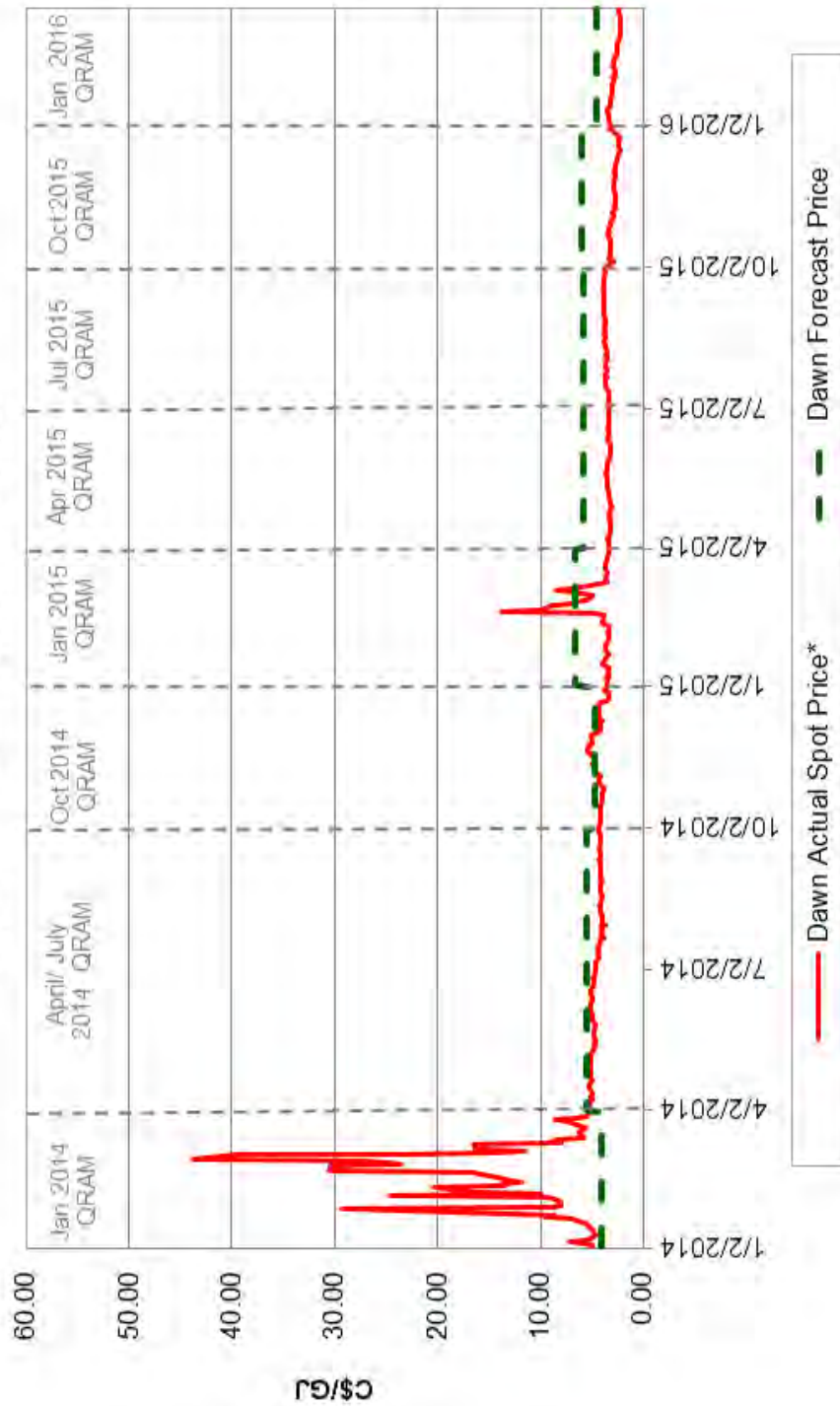
## July 2016 Quarterly Rate Adjustment (QRAM)

July 1, 2016 QRAM Typical Bill Impact (%)		
	Sales Customers	T-Service Customers
Rate 1	3.1%	2.5%
Rate 6	4.2%	3.8%
Rate 100	4.1%	3.4%
Rate 110	5.1%	5.2%
Rate 115	5.6%	6.5%
Rate 135	6.6%	9.0%
Rate 145	6.1%	7.3%
Rate 170	6.0%	7.8%

# Natural Gas Spot Price – Dawn Hub

2014 through 2016

## Natural Gas Prices - Dawn



Note: \*Daily Dawn spot price at midpoint, from Gas Daily  
Daily exchange rate (U.S. Dollar Noon) conversion from the Bank of Canada

# Natural Gas Spot Price – AEEO Hub

2014 through 2016

## Natural Gas Prices - AEEO



Note: \*Daily AEEO spot price at midpoint from Gas Daily



## Rider C: Gas Cost Adjustment

The component of Rider C that was in place for 24 months to recover the cost from winter 2014 will expire on June 30<sup>th</sup>

The result is a large decrease in Rider C unit rates.

		<u>RIDER C</u>											
		July 2016 QRAM		April 2016 QRAM						Variance			
Rate		Sales (\$/m <sup>3</sup> )	WTS (\$/m <sup>3</sup> )	OTS (\$/m <sup>3</sup> )	Sales (\$/m <sup>3</sup> )	WTS (\$/m <sup>3</sup> )	OTS (\$/m <sup>3</sup> )	Sales (\$/m <sup>3</sup> )	WTS (\$/m <sup>3</sup> )	OTS (\$/m <sup>3</sup> )			
1		0.3	0.3	0.3	3.9	1.7	1.7	(3.6)	(1.4)	(1.4)			
								-92%	-82%	-84%			
6		0.3	0.3	0.3	3.8	1.6	1.5	(3.5)	(1.3)	(1.3)			
								-92%	-82%	-83%			
9		(0.9)	0.0	0.0	1.1	0.0	0.0	(2.0)	(0.0)	(0.0)			
								-176%	-40%	-88%			
100		0.3	0.3	0.3	3.8	1.6	1.5	(3.5)	(1.3)	(1.3)			
								-92%	-82%	-83%			
110		(0.6)	0.1	0.1	1.7	0.3	0.3	(2.3)	(0.2)	(0.2)			
								-133%	-75%	-81%			
115		(0.9)	0.0	0.0	1.2	0.1	0.1	(2.1)	(0.1)	(0.1)			
								-171%	-65%	-81%			
135		(0.9)	0.0	0.0	1.1	0.0	0.0	(2.0)	0.0	0.0			
								-180%	15%	0%			
145		(0.1)	0.2	0.1	2.7	0.8	0.8	(2.8)	(0.7)	(0.7)			
								-104%	-81%	-84%			
170		(0.2)	0.1	0.1	2.3	0.5	0.4	(2.5)	(0.4)	(0.4)			
								-109%	-81%	-85%			
200		0.3	0.3	0.2	3.5	1.2	1.2	(3.2)	(1.0)	(1.0)			
								-91%	-79%	-81%			

## Deferral & Variance Accounts Disposition

### 2015 Deferral & Variance Account Clearing

- Includes accounts such as Earnings Sharing, Transactional Services (TS), DSM, unaccounted for gas, etc.
  - ✓ The Application to dispose of 2015 Deferral and Variance Account balances has been filed with the Ontario Energy Board (OEB)
- EGD is proposing to clear the balances in two equal installments (Oct. and Nov. 2016)
- Billing adjustments can be debits or credits depending on customer class and type of service used by customers (Sales, Western-T, or Ontario-T)
- For most LV customers billing adjustments will be within the \$2,000 to (\$18,000) range...two equal installments

## Cap & Trade

### Cap & Trade Charges

Cap & Trade charges will recover the costs of:

- **Customer-related emission obligations:**
  - Emissions related to the customers' natural gas usage
- **Facility-related emission obligations:**
  - Emissions related to the distribution of natural gas such as emissions from fugitive and leaked gas and emissions from the utility's facilities and operations
- **Administrative:**
  - The cost of compliance obligations, such as monitoring, reporting and verification of emissions, purchasing/trading functions, changes to the billing or IT systems

## Cap & Trade

### Cap & Trade Charges

Customer	Costs for Customer-related Obligations	Costs for Facility-related Obligations	Administrative Costs
Residential	✓	✓	✓
Commercial	✓	✓	✓
Industrial	✓	✓	✓
Large Final Emitter		✓	✓
<b>Approx. Charges</b>	<b>~3.0 c/m<sup>3</sup></b>	<b>~0.03 c/m<sup>3</sup></b>	<b>? c/m<sup>3</sup></b>

## Questions?



Anton Kacicnik  
(416) 495-6087  
[anton.kacicnik@enbridge.com](mailto:anton.kacicnik@enbridge.com)

# **Greenhouse Gas Cap and Trade Program: Transition to Implementation**

**Ministry of the Environment and Climate Change  
June, 2016**

# 1. Legislative and Regulatory Framework

Note: This presentation has been produced for information purposes. It is necessary to consult the regulation for comprehensive references.



# Context and Status

- Between May 2015 and April 2016, MOECC met extensively with stakeholders on cap and trade to gather information to inform key program design decisions.
- MOECC received 794 sets of comments from stakeholders over the course of these consultations.
  - 158 comments were submitted regarding the latest cap and trade regulatory proposal which was posted for comment to the Environmental Registry for 47 days.
- On May 18<sup>th</sup>, 2016 the *Climate Change Mitigation and Low-carbon Economy Act, 2016* received Royal Assent.
  - This legislation provides the authority to implement a cap and trade program
- On May 19<sup>th</sup>, 2016 two regulations that form the backbone of the cap and trade program became law – the Cap and Trade Program Regulation (O.Reg. 144/16) and the Quantification, Reporting and Verification of Greenhouse Gas Emissions Regulation (O.Reg. 143/16),
  - The Cap and Trade Program Regulation is effective July 1, 2016
  - The Quantification, Reporting and Verification of Greenhouse Gas Emissions Regulation takes effect January 1, 2017





# Cap and Trade and Reporting Regulations

- The final Cap and Trade Program Regulation (O.Reg 144/16) outlines a number of program elements, including:
  - Caps
  - Compliance periods and requirements
  - Auction and sale rules
  - Strategic reserve of allowances
  - Market rules
  - Allocations
- The new quantification, reporting and verification regulation (O.Reg 143/16):
  - Under the new Act
  - Facilitates the opt-in provisions for facilities with annual emissions between 10,000 and 25,000 tonnes;
  - Refinements to support implementation of the Cap and Trade Regulation (e.g., collection of additional product, process and energy use information to support the calculations for free allowance allocations)



# Key Changes from Draft Regulation

The final regulation:

- provides free allowances for both the steam and electricity produced on-site or purchased directly from a generation facility
- Adjusts the cap adjustment factor for combustion emissions based on biomass fuel use
- Several additional facilities being allocated under the history based method instead of the energy use method.



# Mandatory Participants

- A person who meets one of the following descriptions is required to register no later than November 30, 2016 as a mandatory participant:
  1. A person who was required to prepare and verify an emissions report under reporting regulation as it read on January 1, 2015 (2015 EPA Regulation)
    - electricity generators covered upstream are excluded
  2. A person who was required to report under the reporting regulation as it read on January 1, 2016 (2016 EPA Regulation) but excluded from the requirement to have the report verified
    - fuel suppliers/distributors, electricity importers, magnesium producers, electricity transmission
  3. Electricity generators that receive natural gas directly from an international or inter-provincial natural gas transmission pipeline



## Voluntary Participants - Exceptions

- A person who meets the following criteria may apply in 2016 to register as a voluntary participant (i.e., opt in):
  1. Industrial facilities with emissions between 10,000 and 25,000 tonnes per year (see slide 6)
  2. The person is not required to register as a mandatory participant in respect of the specified GHG activities engaged in at the facility
  3. An emissions report and positive or qualified positive verification statement has been submitted to the Director in accordance with the January 1, 2016 version of O.Reg. 452/09.
- Electricity generators whose emissions are covered upstream at the natural gas distributor are not eligible to opt-in into the program



# Eligibility for Free Allowances

- Mandatory participants or eligible voluntary participants may apply for allowances in respect of the specified GHG activities engaged in at the facility
- Eligible specified GHG activities include activities listed in Schedule 2 of the new reporting regulation with the exception of the following:
  - electricity transmission (Item 18 of Schedule 2)
  - natural gas transmission and distribution (Item 19 of Schedule 2)
- Other exclusions
  - Electricity generators that are covered directly because they receive natural gas from an interprovincial or international pipeline
  - Mandatory participants who permanently ceased engaging in all specified GHG activities at the facility in the year prior to the vintage year of allowances
    - e.g., facilities that ceased specified GHG activities in 2016 are not eligible for 2017 allowances
    - If specified GHG activities ceased after the application was made, the application must be withdrawn by giving written notice to the Minister no later than December 31 in the year the application was made



# Allocation Methods

## Output Benchmarks, Energy Use and Historical

The number of allowances a facility may receive each year will be determined according to Methods A through E set out in *Methodology for the Distribution of Ontario Emission Allowances Free of Charge*. More than **one method** may be applied to calculate the number of Ontario emission allowances for a facility.

1. Method A: Product Output Benchmark Method
  - Tables 1 a, 1b or 1 c in the Methodology indicate the products on which eligible facilities' allocations will be based
2. Method B: Energy Use-Based Method
  - Exclusions are outlined in Section 2.2.2 of the Methodology ( e.g., coal used in a coke oven to produce coke; coal, coke and other carbon material charged into the blast furnace as a reductant)
3. Method C: History-Based Method
  - Facilities described in Table 3 of the Methodology will have allocations based on absolute amounts (i.e., not based on either production, energy use or emissions)
  - Facilities described in either Table 2a or 2b of the Methodology will be eligible to receive allowances according to their output and a facility-specific emissions intensity

# Allocation Methods

## Direct Emissions and Indirect Steam

4. Method D: Direct Method
  - Method D applies in respect of the following facilities:
    - A facility that is set out in Table 4a or 4b or 4c of the Methodology; or
    - A facility that is not set out in Table 4a or 4b or 4c and that meets one of the following criteria:
      - The facility is an institution; or
      - The facility incinerates municipal or hazardous waste, as those wastes are defined in O. Reg. 347 made under the *Environmental Protection Act*.
5. Method E: Indirect Steam (Useful Thermal Energy) Method
  - Method used to calculate allocations to facilities that take useful thermal energy generated at another facility
  - Exception: Method E does not apply to a facility that receives and uses useful thermal energy from another facility that is eligible to receive Ontario emission allowances under another method for that same useful thermal energy.





# Distribution of Allowances

- Assistance factor will be 1 for each year in the first compliance period.
- The cap adjustment factor and the assistance factor will be applied to the base number of allowances under each Method.

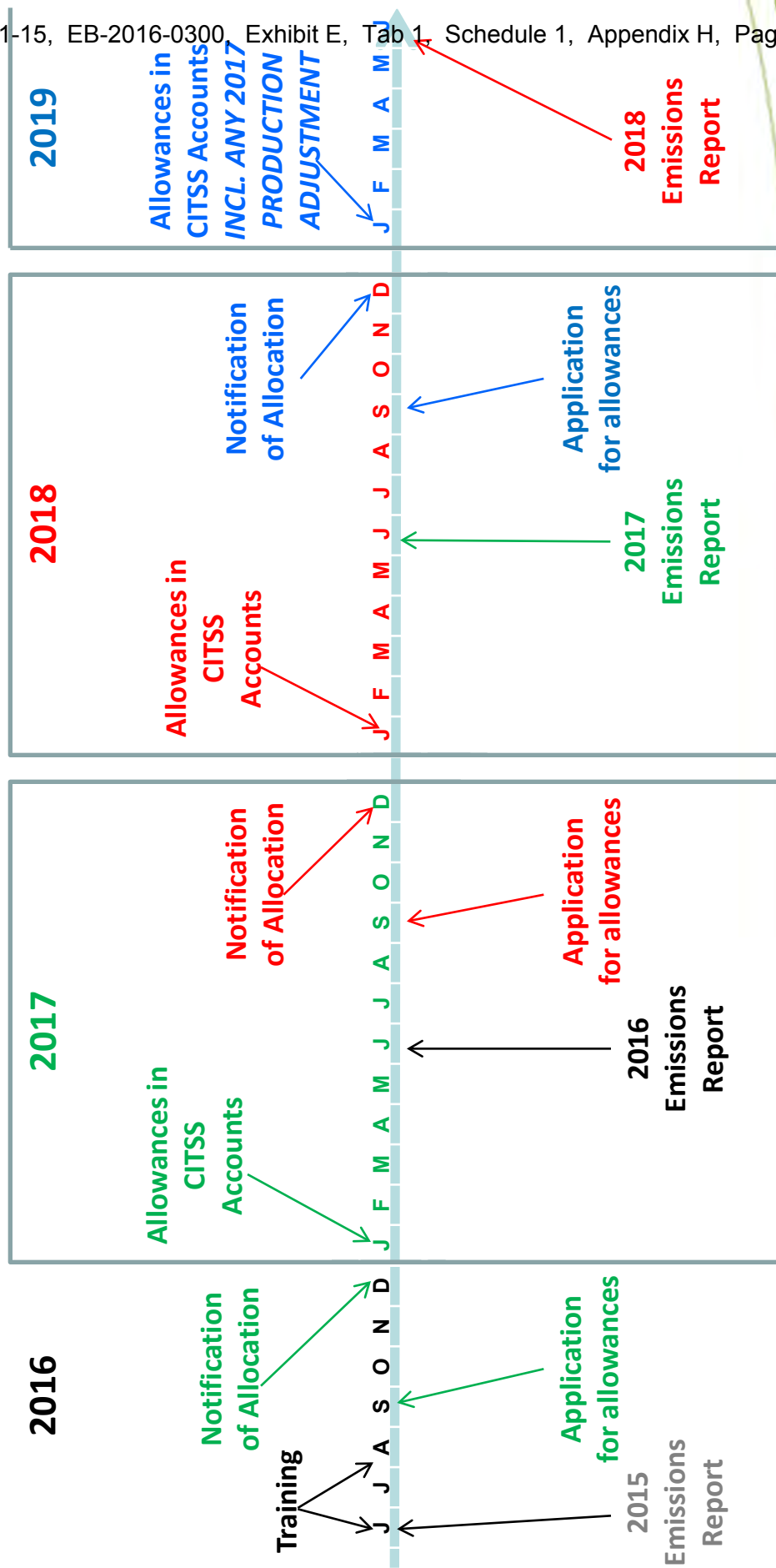
Capped Emitter	Cap and Adjustment Factor for fixed process emissions	Cap and Adjustment Factor for combustion emissions
Institutions or facilities that incinerates municipal or hazardous waste and that generates electricity	n/a	1
Other facilities eligible for free allocation	1	4.57% decline annually adjusted for biomass fuel use

- Allowances distributed free of charge will include a production adjustment ( $B_{adj_t}$ ) starting with applications in 2018 for 2019 allowances
  - The production adjustment will account for changes between actual production, energy or process parameters and the estimates used in prior applications





# Allocation Timelines



## 2. Implementation



# Background

## Cap-and-Trade Systems and Western Climate Initiative, Inc.

- Ontario will deliver its cap-and-trade program through infrastructure established by Western Climate Initiative, Inc. (WCI, Inc.)
- WCI, Inc.** is a not-for-profit corporation established in 2011 to provide infrastructure and services to support the implementation of state and provincial cap-and-trade programs.
- California and Quebec deliver their cap-and-trade program using WCI, Inc. infrastructure and services.

## WCI, Inc. Core infrastructure and services:

- A compliance instrument tracking system service (CITSS).
  - **CITSS** tracks the ownership, sale, transfer and retirement of allowances and offset credits, and allowa for the creation and retirement of compliance instruments)
- An **Auction** platform
- Auction related financial services (escrow/ settlement), known as the **Financial Services Administrator**
- Third party **Market Monitor** services (monitors compliance related to auctions and trading/ holdings of allowances)
- Help desk** (for technical, system-related questions, e.g., password resets)



# Key Dates

## Emissions Reporting (Annually)

- Report by June 1
- Verification Statement by September 1

## Allowance Distribution Outreach Activity

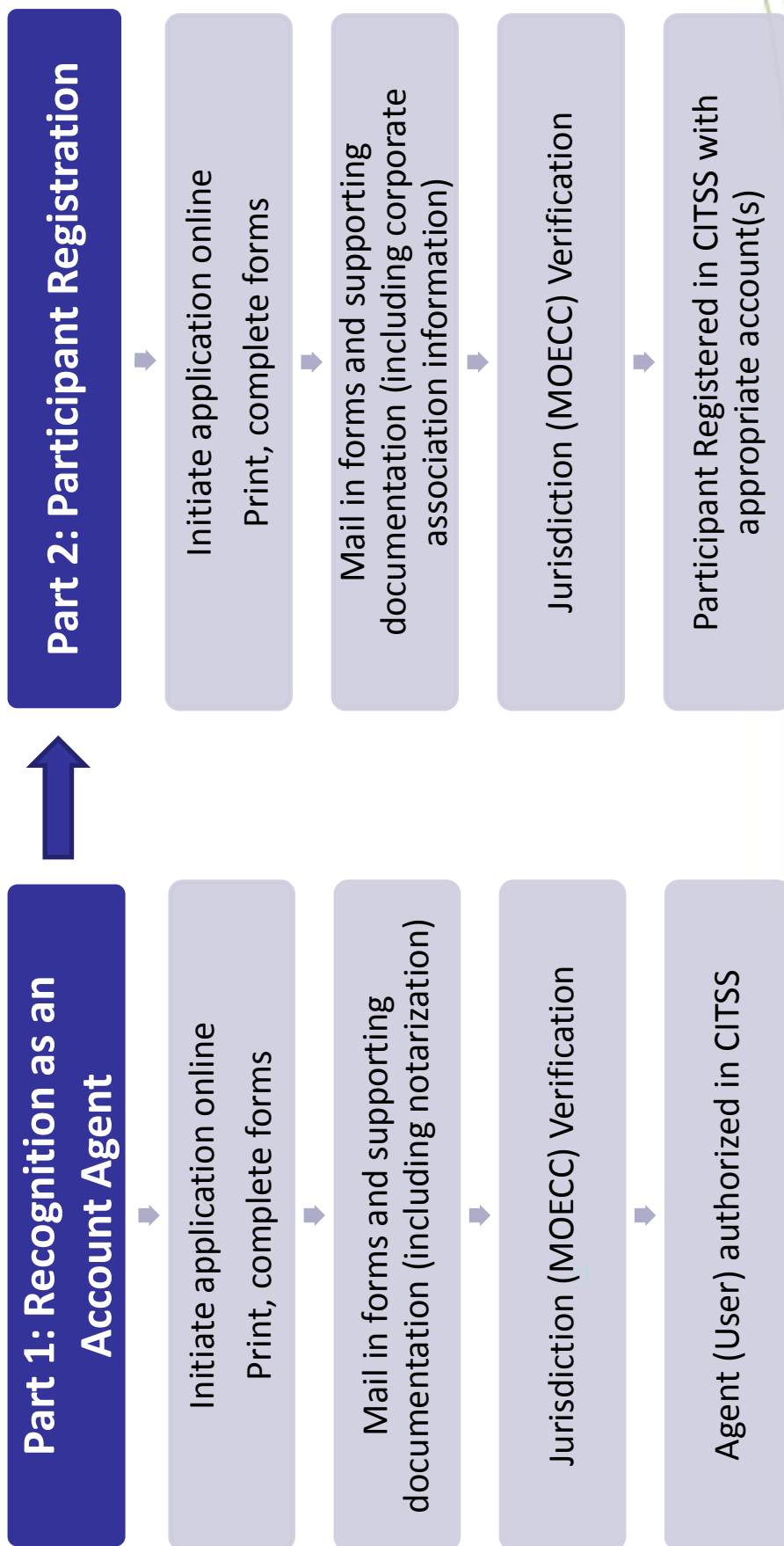
- Webinars, by invitation, planned for:
  - Free Allowance methodology—week of June 13
  - Free Allowance application—mid July/ early August

## Allowance Market Activities

1. CITSS Training - Mid-July to early August. Three separate training sessions.
2. CITSS Registration (*see overview on next slide*) - Early August to November 30<sup>th</sup> regulatory deadline.
  - Part 1: Recognition as an Account Agent
  - Part 2: Participant Registration
3. Auction Notice - January 2017
4. Auction - March 2017



# Overview of CITSS Registration



# Part 1: Recognition of Account Agent (RAA)

## **Purpose:**

- To verify and confirm an applicant's identity through the collection and validation of personal information prior to granting them access to the CITSS

## **Requirements:**

- Individuals who will be account agents (users) on a participant's (entity's) account must apply and be approved under the RAA process. Process includes *Know Your Customer* checks.
- Two account agents are required to initiate a Participant Registration.

## **Outcome:**

- Recognized Account Agents receive a CITSS User ID, enabling them to perform Part 2: Participant Registration requirements.



## Part 2: Participant Registration

### **Purpose:**

- To register participants (entities). Participants are either ‘capped participant’ (mandatory or voluntary/opt-in) or ‘market participant’ in CITSS. Participants are assigned appropriate accounts.

### **Requirements:**

- All participants of the Ontario Cap and Trade program require an account in CITSS.
- Participant Registration includes the disclosure of corporate associations (inter-company ownerships). Enables monitoring of regulatory allowance holding limits.

### **Outcome:**

- All Participants receive a holding account
- ‘Capped’ participants also receive a compliance account



# Key Auction Processes & Next Steps

## Key Auction Processes

- Auction Notice - January 2017
  - Posted 60 days in advance
  - Details of auction, requirements to participate
- Auction Registration
  - Declare intent to Participate
  - Open account with Financial Services Administrator (FSA)
  - Post Bid Guarantee with FSA
- Auction - March 2017
- Post Auction
  - Settlement, reconciliation, distribution of allowances

## Next Steps – Implementation

- Watch Ontario's Cap and Trade website at <https://www.ontario.ca/page/cap-and-trade> for updates on allocation distribution activity and registration instructions for training sessions (scheduled to begin mid-July 2016) and other program updates
- For questions specific to the cap and trade program, excluding emissions reporting and technical help for the Compliance Instrument Tracking System Service (CITSS), please contact [CThelp@Ontario.ca](mailto:CThelp@Ontario.ca)





DEFERRAL AND VARIANCE ACCOUNTS

1. As part of the Company's 2017 Cap and Trade Compliance Plan, Enbridge is proposing the use of two Cap and Trade related deferral accounts: the Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA"), and the Greenhouse Gas Emissions Customer and Facility Costs Variance Account ("GGECFCVA").
2. The Board approved the Greenhouse Gas Emissions Impact Deferral Account ("GGEIDA") in Enbridge's Custom Incentive Regulation ("CIR") proceeding (EB-2012-0459). The account was approved in recognition of the potential for a government program to reduce greenhouse gas ("GHG") emissions. No costs related to any such program were included in the budgets used to set Allowed Revenues under Enbridge's CIR ratemaking model. The Board described the GGEIDA on page 70 of its Decision with Reasons in the CIR proceeding as follows:

[t]he GGEIDA would be used to record the impacts of provincial and federal regulations related to greenhouse gas emission requirements along with the impacts resulting from the sale of, or other dealings in, earned carbon dioxide offset credits.
3. Enbridge has and will continue to record administrative costs, incurred in relation to the implementation of the Cap and Trade program, in the 2016 GGEIDA, for clearance in 2017.
4. Given the development of Ontario's Cap and Trade program, Enbridge anticipates that it will incur additional administrative costs in 2017, with regards to program implementation, launch, and ongoing administration and compliance requirements. Enbridge proposes to continue to record incremental administrative costs incurred in 2017 in the 2017 GGEIDA. A forecast of these costs has been included in Exhibit C, Tab 3, Schedule 6, Table 2.

Witnesses: R. Craddock  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
R. Small

5. Enbridge will seek cost recovery for the 2016 administrative costs in 2017 at the same time as it clears other 2016 deferral and variance accounts or as part of the August 2017 Cap and Trade Compliance Plan filing. Enbridge sees merit in clearing the 2016 GGEIDA at either time and looks for direction from the Board. Administrative costs incurred in 2017 will be recorded in the 2017 GGEIDA and the Company will seek recovery of same in 2018 as part of its 2017 deferral and variance account clearance application or as part of the Company's 2019 Compliance Plan filing in August of 2018.
6. In order to ensure that the Company neither over- or under-recovers its Customer-related obligation costs and Facility-related obligation costs, Enbridge proposes the establishment of a new variance account entitled the Greenhouse Gas Emissions Customer and Facility Costs Variance Account ("GGEFCVA"). This account will allow for recovery or credit of any difference between actual Customer and Facility-related obligation costs incurred in 2017, inclusive of financing charges currently estimated at [REDACTED] for 2017, and the actual amount which is recovered through rates, being the aggregate of the revenues from the Cap and Trade Unit Rates for Customer-related and Facility-related costs. Enbridge's systems will be able to apportion the amounts collected between Customer-related obligations and Facility-related obligations. Any variance recorded in the 2017 GGEFCVA will be sought for clearance as part of the Company's 2018 True-Up filing, or at the Board's discretion.
7. Simple interest will be calculated on the opening monthly balances of the GGEIDA and GGEFCVA using the Board Approved EB-2006-0117 interest rate methodology. Any interest due or payable in relation to the 2017 GGEIDA and GGEFCVA balances will be sought for clearance at the time that the Board considers the balance in the account, or at the Board's discretion.

Witnesses: R. Craddock  
A. Langstaff  
J. Murphy  
F. Oliver-Glasford  
R. Small

## COST RECOVERY STATEMENTS

1. In this proceeding, Enbridge requests approval of the Customer-related and Facilities-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. Enbridge also requests approval of the methodology used to determine the Cap and Trade Unit Rates. 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 (“LFE”), i.e., facilities that emit more than 25,000 tonnes of carbon dioxide equivalent (“tCO<sub>2</sub>e”), “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.

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy

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 (exclusive of LFEs, voluntary participants, volumes of natural gas derived from biomass, and volumes of natural gas delivered to downstream or out of province natural gas distributors) and for the Company's own operations. These volumes are then used for two purposes – to forecast the costs to acquire the necessary emission allowances and 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 greenhouse gas 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 tCO<sub>2</sub>e, 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 forecasted cost of an emission allowance; and (iii) multiplying the GHG emissions by the price determined in ii).

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy

8. Enbridge has forecasted the cost of an emission allowance based on the auction reserve, or floor, price at the Ontario auctions in 2017. The auction reserve price is calculated based on Section 71(1) of Ontario Regulation 144/16, *The Cap and Trade Program* (the "Regulation"), which states "The minimum price of an emission allowance in an auction is the higher of the annual auction reserve prices most recently established, as of the day of the auction, for each of Quebec and California".
9. As the actual WCI auction reserve price will not be known until early 2017 when it is published by the Auction Administrator, Enbridge has estimated it by using the methodology provided in the Cap and Trade regulations for each jurisdiction, and determining which will be the higher.
10. The auction reserve price in California is determined in accordance with California Code of Regulations Title 17, §95911, subsection (c)(3) *California Cap On Greenhouse Gas Emissions and Market-Based Compliance Mechanisms*, which states "The Auction Reserve Price in U.S. dollars shall be the U.S. dollar Auction Reserve Price for the previous calendar year increased by 5 percent plus the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for All Urban Consumers."
11. The auction reserve price in Quebec is determined using the same methodology as California, as per Section 49 of the Quebec's *"Regulation respecting a cap-and-trade system for greenhouse gas emission allowances"*.

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy

12. As of the last WCI auction, which was held in August 2016, the WCI auction reserve price was \$12.73 USD or \$16.45 CAD<sup>1</sup>. This price is based on the California auction reserve price, which was the higher of California and Quebec.
13. Based on the 2016 California auction reserve price above, Enbridge has forecasted the 2017 WCI auction reserve price to be \$17.70. This price is based on a U.S. Consumer Price Index of 2.3%, and an exchange rate of 1.2959<sup>2</sup>.
14. The total Customer-related emissions for 2017 based on the Customer-related volume forecast is 20,907,621 tCO<sub>2</sub>e. The derivation of that amount is set out in the Table 1, which is included at Exhibit B, Tab 3, Schedule 1.
15. The total Facility-related emissions for 2017 based on the Facility-related volume forecast is 229,145 tCO<sub>2</sub>e. The derivation of that amount is set out in Table 3, which is included at Exhibit B, Tab 3, Schedule 1.
16. The costs to meet Customer-related and Facility-related obligations are determined by multiplying the forecast emissions for each category by the estimated price for emissions allowances.
17. 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 2017 total \$370,064,899 (20,907,621 tCO<sub>2</sub>e \* \$17.70 CAD/t CO<sub>2</sub>e).

---

<sup>1</sup> August 2016 price in CAD is based on exchange rate of 1.2922 as posted by the California Air Resources Board.

<sup>2</sup> As filed in to EB-2016-0215, Exhibit D1, Tab 2, Schedule 10.

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy

18. 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 2017 total \$4,055,870 (229,145 tCO<sub>2</sub>e \* \$17.70/t CO<sub>2</sub>e).

(ii) Cap and Trade Unit Rates

19. The derivation of the Cap and Trade Unit Rates for customer-related and facility-related obligations is based on several sets of information and is organized in the following manner:

- (a) Appendix A, Table A1, which is found at Exhibit G, Tab 1, Schedule 1 summarizes, by rate class, the 2017 forecast gas volumes for Customer-related obligations and shows the derivation of CO<sub>2</sub>e emission costs as well as the Cap and Trade Unit Rate for Customer-related obligations based on an Enbridge's estimated 2017 auction reserve price for carbon emission allowances and net CO<sub>2</sub>e emissions.
- (b) Appendix A, Table A2, which is found at Exhibit G, Tab 1, Schedule 1 summarizes, by component, the 2017 forecast gas volume for Facility-related obligations and presents the derivation of CO<sub>2</sub>e emission costs as well as the Cap and Trade Unit Rates for Facility-related obligations based on Enbridge's estimated 2017 auction reserve price for carbon emission allowances and CO<sub>2</sub>e 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.

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy

- (d) Appendix A, Table A4, which is found at Exhibit G, Tab 1, Schedule 1, is a summary of the 2017 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs.
  - (e) Appendix A, Table A5, which is found at Exhibit G, Tab 1, Schedule 1 details the breakdown of the 2017 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs.
20. 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.”
21. 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, found at Exhibit 1, Tab 1, Schedule 1.
22. 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.”
23. The Company confirms that Cap and Trade charges will be included in the Delivery charges on customers’ bills.

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy



24. For a typical residential customer consuming 2,400 m<sup>3</sup> of natural gas per year, the sum of Cap and Trade charges for customer-related and facility-related costs will equal about \$80 in 2017 based on Enbridge's estimated auction reserve price.
25. Enbridge submits that for rate making purposes, it did not include any administrative or financing costs in the derivation of its Cap and Trade unit rates, such costs will be recovered through the GGEIDA and GGEFCVA, respectively. The Board's Staff Discussion Paper on a Cap and Trade Regulatory Framework for the Natural Gas Utilities notes, "Since administrative cost will form part of the utility's on-going business, staff suggests they be allocated in the same manner as similar existing administrative costs." Enbridge will seek cost recovery of its 2015 and 2016 administrative costs associated with the Cap and Trade program during its 2017 Compliance Plan filing, in August 2018 or as directed by the Board.
26. For an estimate of the administrative costs associated with the Cap and Trade program, refer to Exhibit C, Schedule 3, Tab 6.

Witnesses: A. Langstaff  
A. Kacicnik  
J. Murphy

**TABLE A1**

**TABLE 1: 2017 CUSTOMER-RELATED VOLUMES, EMISSIONS, COST OF EMISSIONS AND UNIT RATE**

Line	Rate	Budget Forecast Volumes <sup>1</sup> (10 <sup>3</sup> m <sup>3</sup> )	LFE, Voluntary Participant and Other Exempt Gas Volumes <sup>2</sup> (10 <sup>3</sup> m <sup>3</sup> )	Net Volumes <sup>3</sup> (10 <sup>3</sup> m <sup>3</sup> )	Net CO <sub>2</sub> e Emissions <sup>4</sup> (Tonnes CO <sub>2</sub> e)	Assumed Cost of Allowances <sup>5</sup> (\$/tonne CO <sub>2</sub> e)	Cost of CO <sub>2</sub> e Emissions <sup>6</sup> (\$)	Unit Rate <sup>7</sup> (\$/m <sup>3</sup> )
1.1	1	4,911,477.9	0.0	4,911,477.9	9,207,189.1	17.70	162,967,246.7	
1.2	6	4,862,269.2	120,126.9	4,742,142.3	8,889,748.0	17.70	157,348,539.5	
1.3	9	262.8	0.0	262.8	492.7	17.70	8,719.9	
1.4	100	0.0	0.0	0.0	0.0	17.70	0.0	
1.5	110	861,434.8	403,080.8	458,354.0	859,242.8	17.70	15,208,597.3	
1.6	115	490,291.9	304,439.5	185,852.4	348,403.9	17.70	6,166,749.5	
1.7a	125	305,896.4	0.0	305,896.4	573,441.7	17.70	10,149,917.2	
1.7b	125D <sup>8</sup>	325,082.3	0.0	325,082.3	609,408.1	17.70	10,786,522.6	
1.8	135	60,899.0	0.0	60,899.0	114,162.9	17.70	2,020,683.5	
1.9	145	63,318.2	14,091.0	49,227.2	92,282.6	17.70	1,633,402.7	
1.10	170	296,313.0	183,005.6	113,307.4	212,409.1	17.70	3,759,641.3	
1.11	200	170,842.7	170,842.7	0.0	0.0	17.70	0.0	
1.12	300	35,440.4	34,992.0	448.4	840.6	17.70	14,878.3	
1	Total Customer-Related	12,383,528.6	1,230,578.5	11,152,950.1	20,907,621.4	17.70	370,064,898.6	3.3181

Notes:

- (1) Exhibit B, Tab 2, Schedule 1, Table 1, Col. 1 - Col. 2
- (2) Exhibit B, Tab 2, Schedule 1, Table 1, Col. 4 and Col. 5. Rate 300 is landfill gas volume.
- (3) Col. 1 - Col. 2
- (4) Exhibit B, Tab 3, Schedule 1, Table 1, Col. 5
- (5) Internal forecast of carbon allowance pricing based on past auction data and Cap and Trade Regulation
- (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 CO<sub>2</sub>e Emissions / Net Volumes  
= \$ 370,064,898.6 / 11,152,950.1 10<sup>3</sup>m<sup>3</sup>  
= 3.3181 \$/m<sup>3</sup>

**TABLE A2**

**TABLE 2: 2017 FACILITY-RELATED VOLUMES, EMISSIONS, COST OF EMISSIONS AND UNIT RATES**

Line	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
	Volumes <sup>1</sup> (10 <sup>3</sup> m <sup>3</sup> )	CO <sub>2</sub> e Emissions <sup>2</sup> (Tonnes CO <sub>2</sub> e)	Assumed Cost of Allowances <sup>3</sup> (\$/tonne CO <sub>2</sub> e)	Cost of CO <sub>2</sub> e Emissions <sup>4</sup> (\$)	Unit Rate (\$/m <sup>3</sup> )
2.1 Company Use					
2.1.1 Fleet	1,500.0	2,811.9	17.70	49,771.3	
2.1.2 Buildings	1,505.9	2,823.0	17.70	49,967.6	
2.1.3 Boilers	3,930.2	7,307.8	17.70	129,348.0	
2.1 Company Use	6,936.2	12,942.8	17.70	229,086.9	0.0018 <sup>5</sup>
2.2 Unaccounted For Gas (UAF)	98,279.0	184,236.5	17.70	3,260,985.5	0.0271 <sup>6</sup>
2.3 Compressor Fuel	17,191.8	31,966.0	17.70	565,797.5	0.0048 <sup>7</sup>
2 Total Facility-Related	122,407.0	229,145.2	17.70	4,055,870.0	0.0337

Notes:

- (1) Exhibit B, Tab 2, Schedule 1, Table 2
- (2) Exhibit B, Tab 3, Schedule 1, Table 3, Col. 5
- (3) Internal forecast of carbon allowance pricing based on past auction data and Cap and Trade Regulation
- (4) Col. 2 x Col. 3
- (5) Cost of CO<sub>2</sub>e emissions / Total customer-related volume = [Col. 4 / (Exhibit A1, Table 1, Line 1, Col. 1 x 1000)] x 100
- (6) Cost of CO<sub>2</sub>e 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 CO<sub>2</sub>e 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 10<sup>3</sup> m<sup>3</sup>) x 1000)] x 100

**Facility-Related Unit Rate Calculations**

Company Use = Cost of CO<sub>2</sub>e Emissions for Company Use / Total Customer-Related Volume  
= \$ 229,086.9 / 12,383,528.6 10<sup>3</sup>m<sup>3</sup>  
= 0.0018 \$/m<sup>3</sup>

Unaccounted For Gas Volumes = Cost of CO<sub>2</sub>e Emissions for Unaccounted For Gas / (Total Customer-Related Volume Excluding Rate 125D and Landfill Gas)  
= \$ 3,260,985.5 / (12,383,528.6 - 325,082.3 - 34,992.0) 10<sup>3</sup>m<sup>3</sup>  
= 0.0271 \$/m<sup>3</sup>

Compressor Fuel Volumes = Cost of CO<sub>2</sub>e Emissions for Compressor Fuel / (Total Customer-Related Volume Excluding Unbundled Customers + Rate 325 Volume)  
= \$ 565,797.5 / (12,383,528.6 - 305,896.4 - 325,082.3 - 35,440.4 + 190,328.0) 10<sup>3</sup>m<sup>3</sup>  
= 0.0048 \$/m<sup>3</sup>

Facility-Related Charge = 0.0018 + 0.0271 + 0.0048 \$/m<sup>3</sup>  
= 0.0337 \$/m<sup>3</sup>

**TABLE A3**

**TABLE 3: 2017 CAP & TRADE UNIT RATE SUMMARY**

		Col. 1	
Line		Unit Rate (¢/m <sup>3</sup> )	
1	Customer-Related	3.3181	1
	Facility-Related:		
2.1	Company Use	0.0018	2
2.2	UAF	0.0271	3
2.3	Compressor Fuel	0.0048	4
2	Facility-Related	0.0337	5
3	Total	3.3518	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: 2017 CAP AND TRADE UNIT RATE SUMMARY BY RATE CLASS**

Rate Class	Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
Rate 1	3.3518	0.0337
Rate 6	3.3518	0.0337
Rate 9	3.3518	0.0337
Rate 100	3.3518	0.0337
Rate 110	3.3518	0.0337
Rate 115	3.3518	0.0337
Rate 125	3.3471	0.0290
Rate 125 Dedicated	3.3199	0.0018
Rate 135	3.3518	0.0337
Rate 145	3.3518	0.0337
Rate 170	3.3518	0.0337
Rate 200	0.0337	0.0337
Rate 300	3.3471	0.0290
Rate 300 Interruptible	3.3471	0.0290
Rate 315	0.0048	0.0048
Rate 316	0.0048	0.0048
Rate 320	0.0000	0.0000
Rate 325	0.0066	0.0066
Rate 330	0.0066	0.0066
Rate 331	0.0018	0.0018
Rate 332	0.0018	0.0018

(1) Includes Voluntary Participants and Other Exempt Gas Volumes

**TABLE A5****TABLE 5: 2017 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS**

Rate Class		Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
Rate 1	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 6	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 9	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 100	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337

**TABLE A5****TABLE 5: 2017 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS**

Rate Class		Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
Rate 110	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 115	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 125	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0290	0.0290
	Total	3.3471	0.0290
Rate 125 Dedicated	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0018	0.0018
	Total	3.3199	0.0018

**TABLE A5****TABLE 5: 2017 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS**

Rate Class		Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
Rate 135	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 145	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 170	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	3.3518	0.0337
Rate 200	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0337	0.0337
	Total	0.0337	0.0337



**TABLE A5****TABLE 5: 2017 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS**

Rate Class		Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
Rate 300	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0290	0.0290
	Total	3.3471	0.0290
Rate 300 Interruptible	Customer-Related	3.3181	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0271	0.0271
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0290	0.0290
	Total	3.3471	0.0290
Rate 315	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0000	0.0000
	UAF	0.0000	0.0000
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0048	0.0048
	Total	0.0048	0.0048
Rate 316	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0000	0.0000
	UAF	0.0000	0.0000
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0048	0.0048
	Total	0.0048	0.0048

**TABLE A5****TABLE 5: 2017 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS**

Rate Class		Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
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	0.0018	0.0018
	UAF	0.0000	0.0000
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0066	0.0066
	Total	0.0066	0.0066
Rate 330	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0000	0.0000
	Compressor Fuel	0.0048	0.0048
	Facility-Related	0.0066	0.0066
	Total	0.0066	0.0066
Rate 331	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0018	0.0018
	Total	0.0018	0.0018

**TABLE A5****TABLE 5: 2017 CAP AND TRADE UNIT RATE BREAKDOWN BY RATE CLASS**

Rate Class		Non-Large Final Emitter (¢/m <sup>3</sup> )	Large Final Emitter <sup>1</sup> (¢/m <sup>3</sup> )
Rate 332	Customer-Related	0.0000	
	Facility-Related:		
	Company Use	0.0018	0.0018
	UAF	0.0000	0.0000
	Compressor Fuel	0.0000	0.0000
	Facility-Related	0.0018	0.0018
	Total	0.0018	0.0018

(1) Includes Voluntary Participants and Other Exempt Gas Volumes

RATE NUMBER: <b>1</b>	<b>RESIDENTIAL SERVICE</b>
-----------------------	----------------------------

**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 37.69 MJ/m<sup>3</sup>.

	<u>Billing Month</u> January to December
<b>Monthly Customer Charge</b>	<b>\$20.00</b>
<b>Delivery Charge per cubic metre</b>	
For the first 30 m <sup>3</sup> per month	10.1617 ¢/m <sup>3</sup>
For the next 55 m <sup>3</sup> per month	9.6141 ¢/m <sup>3</sup>
For the next 85 m <sup>3</sup> per month	9.1852 ¢/m <sup>3</sup>
For all over 170 m <sup>3</sup> per month	8.8656 ¢/m <sup>3</sup>
<b>Transportation Charge per cubic metre</b> (If applicable)	5.6186 ¢/m <sup>3</sup>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	1.1335 ¢/m <sup>3</sup>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	9.5839 ¢/m <sup>3</sup>
<b>Cap and Trade Customer Related Charge</b>	3.3181 ¢/m <sup>3</sup>
<b>Cap and Trade Facility Related Charge</b>	0.0337 ¢/m <sup>3</sup>

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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 1
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 10



RATE NUMBER: <b>6</b>	<b>GENERAL SERVICE</b>
-----------------------	------------------------

**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 37.69 MJ/m<sup>3</sup>.

	Billing Month January to December
<b>Monthly Customer Charge</b>	<b>\$70.00</b>
<b>Delivery Charge per cubic metre</b>	
For the first 500 m <sup>3</sup> per month	9.7415 ¢/m <sup>3</sup>
For the next 1050 m <sup>3</sup> per month	7.8075 ¢/m <sup>3</sup>
For the next 4500 m <sup>3</sup> per month	6.4531 ¢/m <sup>3</sup>
For the next 7000 m <sup>3</sup> per month	5.5829 ¢/m <sup>3</sup>
For the next 15250 m <sup>3</sup> per month	5.1963 ¢/m <sup>3</sup>
For all over 28300 m <sup>3</sup> per month	5.0992 ¢/m <sup>3</sup>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.6060 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE: January 1, 2017	IMPLEMENTATION DATE: January 1, 2017	BOARD ORDER: EB-2016-0215	REPLACING RATE EFFECTIVE: July 1, 2016	Page 1 of 1 Handbook 11
------------------------------------	---	------------------------------	---	----------------------------



RATE NUMBER	<b>9</b>	<b>CONTAINER SERVICE</b>
-------------	----------	--------------------------

**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 37.69 MJ/m<sup>3</sup>.

	<u>Billing Month</u> <u>January</u> to <u>December</u> <u>\$235.95</u>
<b>Monthly Customer Charge</b>	
<b>Delivery Charge per cubic metre</b>	
For the first 20,000 m <sup>3</sup> per month	10.8157 ¢/m <sup>3</sup>
For all over 20,000 m <sup>3</sup> per month	10.1250 ¢/m <sup>3</sup>
<b>Transportation Charge per cubic metre</b> (If applicable)	5.6186 ¢/m <sup>3</sup>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	1.1335 ¢/m <sup>3</sup>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	9.5499 ¢/m <sup>3</sup>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	3.3181 ¢/m <sup>3</sup>
<b>Cap and Trade Facility Related Charge</b>	0.0337 ¢/m <sup>3</sup>

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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 1
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 12



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 37.69 MJ/m<sup>3</sup>.

	<u>Billing Month January to December</u>
<b>Monthly Customer Charge</b>	<b>\$122.01</b>
<b>Delivery Charge</b>	
Per cubic metre of Contract Demand	<b>36.0000 ¢/m<sup>3</sup></b>
Per cubic metre of gas delivered	<b>0.1603 ¢/m<sup>3</sup></b>
<b>Gas Supply Load Balancing Charge</b>	<b>1.5300 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.6060 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

**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.

EFFECTIVE DATE:

January 1, 2017

IMPLEMENTATION DATE:

January 1, 2017

BOARD ORDER:

EB-2016-0215

REPLACING RATE EFFECTIVE:

July 1, 2016

Page 1 of 2  
Handbook 13



RATE NUMBER: <b>100</b>
-------------------------

**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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 14





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 37.69 MJ/m<sup>3</sup>.

	Billing Month January to December
<b>Monthly Customer Charge</b>	<b>\$587.37</b>
<b>Delivery Charge</b>	
Per cubic metre of Contract Demand	22.9100 ¢/m <sup>3</sup>
Per cubic metre of gas delivered	
For the first 1,000,000 m <sup>3</sup> per month	0.7456 ¢/m <sup>3</sup>
For all over 1,000,000 m <sup>3</sup> per month	0.5956 ¢/m <sup>3</sup>
<b>Gas Supply Load Balancing Charge</b>	<b>0.3232 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5499 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

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:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 15



RATE NUMBER: <b>110</b>
-------------------------

**MINIMUM BILL:**

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

**6.6585 ¢/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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 16



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 37.69 MJ/m<sup>3</sup>.

	Billing Month January to December
<b>Monthly Customer Charge</b>	<b>\$622.62</b>
<b>Delivery Charge</b>	
Per cubic metre of Contract Demand	24.3600 ¢/m <sup>3</sup>
Per cubic metre of gas delivered	
For the first 1,000,000 m <sup>3</sup> per month	0.3778 ¢/m <sup>3</sup>
For all over 1,000,000 m <sup>3</sup> per month	0.2778 ¢/m <sup>3</sup>
<b>Gas Supply Load Balancing Charge</b>	<b>0.1164 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5499 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

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, 2017

IMPLEMENTATION DATE:

January 1, 2017

BOARD ORDER:

EB-2016-0215

REPLACING RATE EFFECTIVE:

July 1, 2016

Page 1 of 2  
Handbook 17

RATE NUMBER: <b>115</b>
-------------------------

**MINIMUM BILL:**

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

**6.0838 ¢/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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 18



RATE NUMBER: <b>125</b>	<b>EXTRA LARGE FIRM DISTRIBUTION SERVICE</b>
-------------------------	--

**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.

<b>Monthly Customer Charge</b>	<b>\$500.00</b>	
<b>Demand Charge</b>		
Per cubic metre of the Contract Demand or the Billing Contract Demand, as applicable, per month	<b>9.7559 ¢/m³</b>	
	<u>Non-Dedicated</u>	<u>Dedicated</u>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m³</b>	<b>3.3181 ¢/m³</b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0290 ¢/m³</b>	<b>0.0018 ¢/m³</b>
<b>Direct Purchase Administration Charge</b>	<b>\$75.00</b>	
<b>Forecast Unaccounted For Gas Percentage</b>	<b>0.7%</b>	

**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.

**2. 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.

**3. 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 19



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

**0.32 ¢/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\*.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 20



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:

$$P_e = (P_m * E_r * 100 * 0.03769 / 1.055056) * 1.5$$

$P_m$  = 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.

$E_r$  = Noon day spot 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:

$$P_u = (P_l * E_r * 100 * 0.03769 / 1.055056) * 0.5$$

$P_l$  = 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 3 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 21



RATE NUMBER: <b>125</b>
-------------------------

**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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 4 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 22





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 = 0.985 cents/m3 applied to Daily Imbalance of greater than 2% but less than 10% of the Maximum Contractual Imbalance

Tier 2 = 1.182 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 5 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 23



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 1.0652 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, 2017. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184 effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 6 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 24



RATE NUMBER: <b>135</b>	<b>SEASONAL FIRM SERVICE</b>
-------------------------	------------------------------

**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 37.69 MJ/m<sup>3</sup>.

	Billing Month	
	December to March	April to November
<b>Monthly Customer Charge</b>	<b>\$115.08</b>	<b>\$115.08</b>
<b>Delivery Charge</b>		
For the first 14,000 m <sup>3</sup> per month	7.1019 ¢/m <sup>3</sup>	2.4019 ¢/m <sup>3</sup>
For the next 28,000 m <sup>3</sup> per month	5.9019 ¢/m <sup>3</sup>	1.7019 ¢/m <sup>3</sup>
For all over 42,000 m <sup>3</sup> per month	5.5019 ¢/m <sup>3</sup>	1.5019 ¢/m <sup>3</sup>
<b>Gas Supply Load Balancing Charge</b>	<b>0.0000 ¢/m<sup>3</sup></b>	<b>0.0000 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>	<b>5.6186 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5761 ¢/m<sup>3</sup></b>	<b>9.5761 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>	<b>0.0337 ¢/m<sup>3</sup></b>

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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 25



RATE NUMBER: **135**

**SEASONAL CREDIT:**

Rate per cubic metre of Mean Daily Volume from December to March	\$	0.77 /m <sup>3</sup>
Rate per cubic metre of Modified Mean Daily Volume for December	\$	0.77 /m <sup>3</sup>

**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:

<i>December and March</i>	<b>25.4410 ¢/m<sup>3</sup></b>
<i>January and February</i>	<b>63.6025 ¢/m<sup>3</sup></b>

**MINIMUM BILL:**

Per cubic metre of Annual Volume Deficiency (See Terms and Conditions of Service):	<b>9.5582 ¢/m<sup>3</sup></b>
---	-------------------------------

**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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 26



RATE NUMBER: <b>145</b>	<b>INTERRUPTIBLE SERVICE</b>
-------------------------	------------------------------

**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 37.69 MJ/m<sup>3</sup>.

	<b>Billing Month January to December</b>
<b>Monthly Customer Charge</b>	<b>\$123.34</b>
<b>Delivery Charge</b>	
Per cubic metre of Contract Demand	<b>8.2300 ¢/m<sup>3</sup></b>
For the first 14,000 m <sup>3</sup> per month	<b>2.9607 ¢/m<sup>3</sup></b>
For the next 28,000 m <sup>3</sup> per month	<b>1.6017 ¢/m<sup>3</sup></b>
For all over 42,000 m <sup>3</sup> per month	<b>1.0427 ¢/m<sup>3</sup></b>
<b>Gas Supply Load Balancing Charge</b>	<b>0.6795 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5537 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

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 /m<sup>3</sup>**

EFFECTIVE DATE: January 1, 2017	IMPLEMENTATION DATE: January 1, 2017	BOARD ORDER: EB-2016-0215	REPLACING RATE EFFECTIVE: July 1, 2016	Page 1 of 2 Handbook 27
------------------------------------	---	------------------------------	---	----------------------------



RATE NUMBER: **145**

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):

**9.2299 ¢/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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 28



RATE NUMBER:

**170****LARGE 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 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 37.69 MJ/m<sup>3</sup>.

	<b>Billing Month</b>
	<b>January</b>
	<b>to</b>
	<b>December</b>
<b>Monthly Customer Charge</b>	<b>\$279.31</b>
<b>Delivery Charge</b>	
Per cubic metre of Contract Demand	<b>4.0900 ¢/m<sup>3</sup></b>
Per cubic metre of gas delivered	
For the first 1,000,000 m <sup>3</sup> per month	<b>0.5146 ¢/m<sup>3</sup></b>
For all over 1,000,000 m <sup>3</sup> per month	<b>0.3146 ¢/m<sup>3</sup></b>
<b>Gas Supply Load Balancing Charge</b>	<b>0.3145 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5499 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>3.3181 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

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 /m<sup>3</sup>**

EFFECTIVE DATE:

January 1, 2017

IMPLEMENTATION DATE:

January 1, 2017

BOARD ORDER:

EB-2016-0215

REPLACING RATE EFFECTIVE:

July 1, 2016

Page 1 of 2  
Handbook 29



RATE NUMBER: **170**

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):

**6.4187 ¢/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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 30



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 37.69 MJ/m<sup>3</sup>.

	<u>Billing Month</u> <u>January</u> <u>to</u> <u>December</u>
<b>Monthly Customer Charge</b>	
The monthly customer charge shall be negotiated with the applicant and shall not exceed:	<b>\$2,000.00</b>
<b>Delivery Charge</b>	
Per cubic metre of Firm Contract Demand	<b>14.7000 ¢/m<sup>3</sup></b>
Per cubic metre of gas delivered	<b>1.1382 ¢/m<sup>3</sup></b>
<b>Gas Supply Load Balancing Charge</b>	<b>1.3639 ¢/m<sup>3</sup></b>
<b>Transportation Charge per cubic metre</b> (If applicable)	<b>5.6186 ¢/m<sup>3</sup></b>
<b>Transportation Dawn Charge per cubic metre</b> (If applicable)	<b>1.1335 ¢/m<sup>3</sup></b>
<b>System Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5499 ¢/m<sup>3</sup></b>
<b>Buy/Sell Sales Gas Supply Charge per cubic metre</b> (If applicable)	<b>9.5302 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>0.0000 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0337 ¢/m<sup>3</sup></b>

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 /m<sup>3</sup>**

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 31

RATE NUMBER: <b>200</b>
-------------------------

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):

**8.0918 ¢/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, 2017 under Sales Service including Buy/Sell Arrangements and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates as the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 32



RATE NUMBER	<b>300</b>	<b>FIRM OR INTERRUPTIBLE DISTRIBUTION SERVICE</b>
-------------	------------	---

**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	<b>\$500.00</b>	
Monthly Contract Demand Charge Firm	<b>26.4239 ¢/m³</b>	
Interruptible Service:		
Minimum Delivery Charge	<b>0.3849 ¢/m³</b>	
Maximum Delivery Charge	<b>1.0425 ¢/m³</b>	
	<u>Firm</u>	<u>Interruptible</u>
Cap and Trade Customer Related Charge (If applicable)	<b>3.3181 ¢/m³</b>	<b>3.3181 ¢/m³</b>
Cap and Trade Facility Related Charge	<b>0.0290 ¢/m³</b>	<b>0.0290 ¢/m³</b>
Direct Purchase Administration Charge	<b>\$75.00</b>	
Forecast Unaccounted For Gas Percentage	<b>0.7%</b>	

**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.

**2. 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).

**3. 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 33



RATE NUMBER	<b>300</b>
-------------	------------

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\*.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 34



RATE NUMBER	<b>300</b>
-------------	------------

**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:

$$P_e = (P_m * E_r * 100 * 0.03769 / 1.055056) * 1.5$$

$P_m$  = 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.

$E_r$  = Noon day spot 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:

$$P_u = (P_l * E_r * 100 * 0.03769 / 1.055056) * 0.5$$

$P_l$  = 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 3 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 35



RATE NUMBER	<b>300</b>
-------------	------------

**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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 4 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 36



RATE NUMBER	<b>300</b>
-------------	------------

**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 0.985 cents/M3

Tier 2 = Daily Imbalance of greater than 10% but less than Maximum Contractual Imbalance shall be subject to a charge of 1.182 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 5 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 37



RATE NUMBER	<b>300</b>
-------------	------------

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 0.6974 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, 2017. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184 effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 6 of 6
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 38





RATE NUMBER

**315****GAS STORAGE SERVICE****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.

<b>Monthly Customer Charge:</b>	<b>\$150.00</b>
<b>Storage Reservation Charge:</b>	
<b>Monthly Storage Space Demand Charge</b>	<b>0.0504 ¢/m<sup>3</sup></b>
<b>Monthly Storage Deliverability Demand Charge</b>	<b>23.9352 ¢/m<sup>3</sup></b>
<b>Injection &amp; Withdrawal Unit Charge:</b>	<b>0.3266 ¢/m<sup>3</sup></b>
<b>Monthly Minimum Bill:</b> The sum of the Monthly Customer Charge plus Monthly Demand Charges.	
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>0.0000 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0048 ¢/m<sup>3</sup></b>

**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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 3
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 39



RATE NUMBER	<b>315</b>
-------------	------------

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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 3
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 40



RATE NUMBER <b>315</b>
------------------------

**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, 2017. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184 effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 3 of 3
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 41



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.

<b>Monthly Customer Charge:</b>	<b>\$150.00</b>
<b>Storage Reservation Charge:</b>	
<b>Monthly Storage Space Demand Charge</b>	<b>0.0504 ¢/m<sup>3</sup></b>
<b>Monthly Storage Deliverability Demand Charge</b>	<b>5.2531 ¢/m<sup>3</sup></b>
<b>Injection &amp; Withdrawal Unit Charge:</b>	<b>0.1015 ¢/m<sup>3</sup></b>
<b>Monthly Minimum Bill:</b> The sum of the Monthly Customer Charge plus Monthly Demand Charges.	
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>0.0000 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0048 ¢/m<sup>3</sup></b>

**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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 42



RATE NUMBER: <b>316</b>
-------------------------

**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, 2017. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184 effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 43



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> <u>January</u> <u>to</u> <u>December</u>
<b>Gas Supply Charge</b> Per cubic metre of gas sold	<b>15.7976 ¢/m<sup>3</sup></b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>0.0000 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0000 ¢/m<sup>3</sup></b>

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, 2017 under Sales Service and Transportation Service. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184, effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 1
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 44



RATE NUMBER: <b>325</b>	<b>TRANSMISSION, COMPRESSION AND POOL STORAGE SERVICE</b>
-------------------------	---

**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:

	<b>Transmission &amp; Compression \$/10<sup>3</sup>m<sup>3</sup></b>	<b>Pool Storage \$/10<sup>3</sup>m<sup>3</sup></b>
<b>Demand Charge for:</b>		
Annual Turnover Volume	<b>0.2002</b>	<b>0.1873</b>
Maximum Daily Withdrawal Volume	<b>22.0216</b>	<b>20.8192</b>
<b>Commodity Charge</b>	<b>0.8504</b>	<b>0.1417</b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)		<b>0.0000 ¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>		<b>0.0066 ¢/m<sup>3</sup></b>

**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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 45



RATE NUMBER: **325**

	<b>Excess Volume Charge \$/10<sup>3</sup>m<sup>3</sup> / Year</b>	<b>Overrun Charge \$/10<sup>3</sup>m<sup>3</sup> / Day</b>
<b>Transmission &amp; Compression</b>		
Authorized	<b>2.6426</b>	<b>0.7240</b>
Unauthorized	-	<b>290.6851</b>
<b>Pool Storage</b>		
Authorized	<b>2.4724</b>	<b>0.6845</b>
Unauthorized	-	<b>274.8134</b>

- (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, 2017. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184 effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 46





RATE NUMBER:

**330**

**TRANSMISSION AND COMPRESSION AND POOL STORAGE**

**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 <sup>3</sup> m <sup>3</sup>	Full Cycle Interruptible \$/10 <sup>3</sup> m <sup>3</sup>	Short Cycle \$/10 <sup>3</sup> m <sup>3</sup>
<b>Monthly Demand Charge per unit of Annual Turnover Volume:</b>			
Minimum	0.3875	0.3875	-
Maximum	1.9375	1.9375	-
<b>Monthly Demand Charge per unit of Contracted Daily Withdrawal:</b>			
Minimum	42.8408	34.2729	-
Maximum	214.2040	171.3632	-
<b>Commodity Charge per unit of gas delivered to / received from storage:</b>			
Minimum	0.9921	0.9921	0.3936
Maximum	4.9605	4.9605	40.1107
<b>Cap and Trade Customer Related Charge (If applicable)</b>			0.0000 ¢/m <sup>3</sup>
<b>Cap and Trade Facility Related Charge</b>			0.0066 ¢/m <sup>3</sup>

**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/m<sup>3</sup>, 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.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 47

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.

	Full Cycle		Short Cycle
	Firm \$/10 <sup>3</sup> m <sup>3</sup>	Interruptible \$/10 <sup>3</sup> m <sup>3</sup>	\$/10 <sup>3</sup> m <sup>3</sup>
<b>Authorized Overrun</b>			
<b>Annual Turnover Volume</b>			
<b>Negotiable, not to exceed:</b>	<b>40.1107</b>	<b>40.1107</b>	<b>40.1107</b>
<b>Authorized Overrun</b>			
<b>Daily Injection/Withdrawal</b>			
<b>Negotiable, not to exceed:</b>	<b>40.1107</b>	<b>40.1107</b>	<b>40.1107</b>
<b>Unauthorized Overrun</b>			
<b>Annual Turnover Volume</b>			
<b>Excess Storage Balance</b>			
<b>Excess Storage Balance</b>	<b>401.1073</b>	<b>401.1073</b>	<b>401.1073</b>
<b>December 1 - October 31</b>	<b>40.1107</b>	<b>40.1107</b>	<b>40.1107</b>
<b>Unauthorized Overrun</b>			
<b>Annual Turnover Volume</b>			
<b>Negative Storage Balance</b>			

**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, 2017. This rate schedule is effective January 1, 2017 and replaces the identically numbered rate schedule that specifies implementation date, July 1, 2016 and that indicates the Board Order, EB-2016-0184 effective July 1, 2016.

EFFECTIVE DATE:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 2 of 2
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 48



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, 2017, shall apply in respect of FT and IT Service under this Rate Schedule:

	<b>Demand Rate</b> <b>\$/10<sup>3</sup>m<sup>3</sup></b>	<b>Commodity Rate</b> <b>\$/10<sup>3</sup>m<sup>3</sup></b>	
<b>FT Service</b>	<b>5.6430</b>	<b>-</b>	
<b>IT Service</b>	<b>-</b>	<b>0.2230</b>	
<b>Cap and Trade Customer Related Charge</b> (If applicable)		<b>0.0000</b>	<b>¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>		<b>0.0018</b>	<b>¢/m<sup>3</sup></b>

**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:	IMPLEMENTATION DATE:	BOARD ORDER:	REPLACING RATE EFFECTIVE:	Page 1 of 1
January 1, 2017	January 1, 2017	EB-2016-0215	July 1, 2016	Handbook 49



RATE NUMBER <b>332</b>	<b>PARKWAY TO ALBION KING'S NORTH TRANSPORTATION SERVICE</b>
---------------------------	--

**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, 2017, shall apply for transportation service under this Rate Schedule:

<b>Monthly Contract Demand Charge</b>	<b><u>\$/GJ</u></b> <b>\$1.2075</b>	<b><u>\$/103m3</u></b> <b>45.5107</b>
<b>Authorized Overrun Charge</b>	<b><u>\$/GJ</u></b> <b>\$0.0476</b>	<b><u>\$/103m3</u></b> <b>1.7940</b>
<b>Cap and Trade Customer Related Charge</b> (If applicable)	<b>0.0000</b>	<b>¢/m<sup>3</sup></b>
<b>Cap and Trade Facility Related Charge</b>	<b>0.0018</b>	<b>¢/m<sup>3</sup></b>

The Monthly Contract Demand charge is equal to the Daily Contract Demand of \$0.0397 per GJ or \$1.4963 per 10<sup>3</sup>m<sup>3</sup>.

**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.

EFFECTIVE DATE: January 1, 2017	IMPLEMENTATION DATE: January 1, 2017	BOARD ORDER: EB-2016-0215	REPLACING RATE EFFECTIVE: July 1, 2016	Page 1 of 1 Handbook 50
------------------------------------	---	------------------------------	---	----------------------------



ALTERNATE COST RECOVERY STATEMENTS

1. As identified in Exhibit B, Tab 4, Schedule 1, Enbridge requests a deviation from the methodology identified by the Board in establishing the annual carbon price forecast. On page 19 of the Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities (the "Framework"), the Board states, "The OEB has determined that the Utilities will set their annual carbon price forecast using the average of the ICE [Intercontinental Exchange] daily settlement prices of California Carbon Allowances for each day of the forecast period for each month of the forecast year. The forecasting period should be 21 business days and should be as close as possible to the forecast year." The Board also states at Appendix A of the Filing Guidelines, that the Annual Forecast should be used to establish the price of allowances. This price is hereafter referred to as the "ICE Price".
2. As an alternative, Enbridge proposes the use of its estimate of the 2017 auction reserve, or floor price as defined in Exhibit B, Tab 4, Schedule 1. For reasons set out in Exhibit B, Tab 4, Schedule 1, Enbridge requests the use of this estimate of the auction reserve price for rate setting purposes. While this is the same price used for the purposes of the Board approving an interim tariff as proposed in Exhibit G, Tab 1, Schedule 1, what was not stated in that publicly available Exhibit is the fact that the ICE Price is lower and that it is the Company's belief that its estimated auction reserve price is more relevant for the purposes of rate making. Indeed, as the evidence supporting this Compliance Plan notes, there is a possibility that the price for allowances could be even higher.
3. The auction reserve price will be established by the Auction Administrator in early 2017. It should be noted that the Auction Administrator will not accept a bid price lower than the auction reserve. Section 75 (1) of *Ontario Regulation 144/16, The*

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

*Cap and Trade Program*, states “No bid price that is below the minimum price shall be acceptable.”

4. Notwithstanding the proposed use of the floor price, the Company has provided two sets of Cap and Trade Unit Rates. The first set of schedules assumes the ICE Price and Enbridge’s estimated auction reserve price.
5. Enbridge also requests approval of the methodology used to determine the Cap and Trade Unit Rates. 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. The derivation of the Cap and Trade Unit Rates assuming Enbridge’s estimated auction reserve price are contained in Exhibit G, Tab 1, Schedule 1, Appendix A, Tables A1 through A5. Exhibit G, Tab 1, Schedule 2, Appendix A, Table A1 through A5 contain the derivation of the Cap and Trade Unit Rates assuming the ICE Price.

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

6. 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 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 (“LFE”), i.e., facilities that emit more than 25,000 tonnes of carbon dioxide equivalent (“tCO<sub>2</sub>e”) 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 our of

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

province natural gas distributors are also excluded from Customer-related costs. Facility-related costs will be recovered from all customers depending on the services provided by Enbridge.

7. 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 (exclusive of LFEs and voluntary participants, volumes of natural gas derived from biomass, and volumes of natural gas delivered to downstream or out of province natural gas distributors) and for the Company's own operations. These volumes are then used for two purposes – to forecast the costs to acquire the necessary emission allowances and to determine the Cap and Trade Unit Rates needed to recover those costs.
8. Enbridge's volume forecast is available in Exhibit B, Tab 2, Schedule 1.
9. Enbridge's GHG emission forecast is available in Exhibit B, Tab 3, Schedule 1.

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

10. In order to estimate GHG emissions, natural gas volumes were converted to GHG emissions, in tonnes of carbon dioxide equivalent ("tCO<sub>2</sub>e"), 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*.

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

11. The forecast of costs for Enbridge to meet Customer-related and Facility-related obligations is determined by: (i) calculating the GHG emissions associated with forecast volumes as identified above (Exhibit B, Tab 3, Schedule 1) associated with forecast volumes (Exhibit B, Tab 2, Schedule 1); (ii) establishing a forecasted cost of an emission allowance, and (iii) multiplying the GHG emissions by the price determined in ii).
12. For the purpose of this exhibit, Enbridge provides the ICE Price i.e., \$16.90 CAD and Enbridge's forecasted auction floor price i.e., \$17.70 CAD. Further discussion regarding the calculations of these prices is included in Exhibit B, Tab 4, Schedule 1. The total Customer-related emissions for 2017 based on the Customer-related volume forecast is 20,907,621 tCO<sub>2</sub>e. The derivation of that amount is set out in the Table 1, which is included at Exhibit B, Tab 3, Schedule 1.
13. The total Facility-related emissions for 2017 based on the Facility-related volume forecast is 229,145 tCO<sub>2</sub>e. The derivation of that amount is set out in Table 3, which is included at Exhibit B, Tab 3, Schedule 1.
14. The costs to meet Customer-related and Facility-related obligations using the Company's estimated auction reserve price or ICE Price are determined by multiplying the forecast emissions for each category by the abovementioned estimated prices for emission allowances.
15. 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 2017 total \$370,064,899 (20,907,621 tCO<sub>2</sub>e \* \$17.70 CAD/allowance) assuming Enbridge's estimated auction reserve price. At the ICE Price, the costs of Enbridge's

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy



customer-related compliance obligation in 2017 is \$353,295,775. Refer to Appendix A, Tab A1, which is included at Exhibit G, Tab 1, Schedule 2 for the derivation of the customer-related obligation costs in 2017 associated with the ICE Price.

16. 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 2017 total \$4,055,870 (229,145 tCO<sub>2</sub>e \* \$17.70/allowance). At the ICE Price, the cost of Enbridge's facility-related compliance obligation in 2017 is \$3,872,082. Refer to Appendix A, Tab A2, which is included at Exhibit G, Tab 1, Schedule 2 for the derivation of the facility-related obligation costs in 2017 associated with the ICE Price.

(ii) Cap and Trade Unit Rates

17. The derivation of the Cap and Trade Unit Rates for customer-related and facility-related obligations is based on several sets of information and is organized in the following manner:

- (a) Appendix A, Table A1, which is found at Exhibit G, Tab 1, Schedule 1 to this evidence, summarizes, by rate class, the 2017 forecast gas volumes for Customer-related obligations and shows the derivation of CO<sub>2</sub>e emission costs as well as the Cap and Trade Unit Rate for Customer-related obligations based on the Company's estimated auction reserve price and net CO<sub>2</sub>e emissions.
- (b) Appendix A, Table A1, which is found at Exhibit G, Tab 1, Schedule 2 to this evidence, summarizes, by rate class, the 2017 forecast gas volumes

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

for Customer-related obligations and shows the derivation of CO<sub>2</sub>e emission costs as well as the Cap and Trade Unit Rate for Customer-related obligations based on the ICE Price and net CO<sub>2</sub>e emissions.

- (c) Appendix A, Table A2, which is found at Exhibit G, Tab 1, Schedule 1 to this evidence, summarizes, by component, the 2017 forecast gas volume for Facility-related obligations and presents the derivation of CO<sub>2</sub>e emission costs as well as the Cap and Trade Unit Rates for Facility-related obligations based on the Company's estimated auction reserve price and CO<sub>2</sub>e emissions.
- (d) Appendix A, Table A2, which is found at Exhibit G, Tab 1, Schedule 2 to this evidence, summarizes, by component, the 2017 forecast gas volume for Facility-related obligations and presents the derivation of CO<sub>2</sub>e emission costs as well as the Cap and Trade Unit Rates for Facility-related obligations based on the ICE Price and CO<sub>2</sub>e emissions.
- (e) Appendix A, Table A3, which is found at Exhibit G, Tab 1, Schedule 1 to this evidence, summarizes the Cap and Trade Unit Rates for Customer-related and Facility-related obligations assuming the Company's estimate auction reserve price.
- (f) Appendix A, Table A3, which is found at Exhibit G, Tab 1, Schedule 2 to this evidence, summarizes the Cap and Trade Unit Rates for Customer-related and Facility-related obligations assuming the ICE Price.

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

- (g) Appendix A, Table A4, which is found at Exhibit G, Tab 1, Schedule 1 to this evidence, is a summary of the 2017 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs assuming the Company's estimated auction reserve price.
  - (h) Appendix A, Table A4, which is found at Exhibit G, Tab 1, Schedule 2 to this evidence, is a summary of the 2017 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs assuming the ICE Price.
  - (i) Appendix A, Table A5, which is found at Exhibit G, Tab 1, Schedule 1 to this evidence, details the breakdown of the 2017 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs assuming the Company's estimated auction reserve price.
  - (j) Appendix A, Table A5, which is found at Exhibit G, Tab 1, Schedule 2 to this evidence, details the breakdown of the 2017 Cap and Trade Unit Rates by rate class for LFEs and Non-LFEs assuming the ICE Price.
18. 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."
19. 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-

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

Related Charge. Both of these charges are shown on the Rate Schedules for each rate class. Refer to Appendix B, which is at Exhibit G, Tab 1, Schedule 1.

20. 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."
21. The Company confirms that Cap and Trade charges will be included in the Delivery charges on customers' bills.
22. For a typical residential customer consuming 2,400 m<sup>3</sup> of natural gas per year, the sum of Cap and Trade charges for customer-related and facility-related costs will equal about \$80 in 2017 based on Enbridge's estimated auction floor price or \$77 in 2017 based on the ICE Price.
23. Enbridge submits that for rate making purposes, it did not include any administrative or financing costs in the derivation of its Cap and Trade Unit Rates, such costs will be recovered through the GGEIDA and GGEFCVA, respectively. The Board's Staff Discussion Paper on a Cap and Trade Regulatory Framework for the Natural Gas Utilities notes, "Since administrative cost will form part of the utility's on-going business, staff suggests they be allocated in the same manner as similar existing administrative costs." Enbridge will seek cost recovery of its 2015 and 2016 administrative costs associated with the cap and trade program during its 2017 Compliance Plan filing, in August 2018 or as directed by the Board. For an estimate of the administrative costs associated with the cap and trade program, refer to Exhibit C, Schedule 3, Tab 1.

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy

CAP AND TRADE EXHIBITS OEB METHODOLOGY

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

Witnesses: A. Kacicnik  
A. Langstaff  
J. Murphy