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**EB-2017-0224**

**EB-2017-0255**

**EB-2017-0275**

**Enbridge Gas Distribution Inc.  
Union Gas Limited  
EPCOR Natural Gas Limited Partnership**

Applications for approval of the cost consequences of 2018 cap and trade compliance plans

**VECC COMPENDIUM**

**Enbridge Gas Distribution Inc.**

**April 26, 2018**

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

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

EXISTING CUSTOMER ABATEMENT PROGRAMS

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

Demand Side Management ("DSM")

74. DSM is a very important means by which Enbridge will continue to assist the Government in meeting emissions reductions targets. The Company continues to offer a broad range of DSM programs through its 2015-2020 Multi-Year DSM Plan. For clarity, the volumetric impacts attributable to OEB approved DSM activity for 2018 are reflected in the volumetric forecasts upon which the Company's Cap and Trade compliance obligation planning is based.

75. An analysis of the MACC study results as compared to the Company's DSM plans shown in Table 3 below indicates that Enbridge's current DSM Plan delivers results for ratepayers that are well in excess of what the MACC study would otherwise indicate is cost-effective under a Mid-Range LTCPF scenario. At present, Enbridge does not have sufficient insight into the underlying analysis of the MACC study to fully understand what is driving the clear differences between the MACC study results, the Conservation Potential Study results and the Utilities' DSM Plans. At a minimum this analysis serves as a reminder that in designing and deploying DSM to date, Enbridge has been aggressive in its pursuit to reduce volumes and emissions through the most cost-effective opportunities available.

Witnesses: A. Chagani  
M. Lister  
S. McGill  
F. Oliver-Glasford  
R. Sigurdson

Table 3: MACC Potential vs. DSM Plan<sup>5</sup>

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

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

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

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

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

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

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

Witnesses: A. Chagani  
 M. Lister  
 S. McGill  
 F. Oliver-Glasford  
 R. Sigurdson

and Trade Compliance Plans<sup>9</sup> and believes that managing any overlap via the EM&V process will be overly complex and difficult. Enbridge notes that because the Company's Cap and Trade obligation is specific to emissions associated with natural gas volumes, practically speaking the "targeted programs" referenced in the Cap and Trade Framework would take the same approach as existing DSM programs. Whether titled "DSM" or "abatement", the activities in question would use a combination of consumer education, technical expertise, and financial incentives to help customers reduce their natural gas consumption.

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

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<sup>9</sup> EB-2016-0300 Exhibit C, Tab 3, Schedule 4, page 2.

Witnesses: A. Chagani  
M. Lister  
S. McGill  
F. Oliver-Glasford  
R. Sigurdson

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

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

Green Investment Fund Residential Energy Efficiency

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

Witnesses: A. Chagani  
M. Lister  
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R. Sigurdson

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

82. As captured in the volume forecast found in Exhibit B, Tab 2, Schedule 1, the incremental volume reduction coming from GIF in 2018 is anticipated to be 5,559  $10^3\text{m}^3$  which equates to 10,420 tCO<sub>2</sub>e.

Witnesses: A. Chagani  
M. Lister  
S. McGill  
F. Oliver-Glasford  
R. Sigurdson

STAFF INTERROGATORY #24

INTERROGATORY

Ref: Exhibit C / Tab 5 / Schedule 1 / p. 15  
Exhibit C / Tab 5 / Schedule 2 / p. 1, #4

Preamble:

Enbridge Gas states that it considered the guidance and information provided in the OEB MACC study to assess whether it should be expanding DSM programs, and Enbridge Gas “concluded that additional DSM programs would not be cost-effective; in some cases the marginal costs of new programs may be higher than the cost of compliance instruments.”

Enbridge Gas also states that it remains in the best position to deliver reliable energy efficiency programs in the Province. Further, Enbridge Gas indicates that since the Government announced its Climate Change Action Plan (“CCAP”), it has been responsive to evolving Government objectives and has made several proposals to advance energy efficiency in the province.

Questions:

- a) Please explain how Enbridge Gas determined that additional DSM programs would not be cost-effective, and in some cases, the marginal costs of new programs may be higher than the cost of compliance instruments. Please provide all supporting documentation including data, assumptions and analysis.
- b) Does Enbridge Gas plan to undertake any customer abatement without provincial funding? Please explain.

RESPONSE

- a) Enbridge took the analysis as provided by the ICF MACC study and compared the anticipated results filed for DSM with what the MACC study indicated was cost effective. At a high level the results show that all energy efficiency customer abatement deemed cost effective in the MACC is being undertaken by Enbridge’s existing DSM offerings. This analysis is shown in Exhibit C, Tab 5, Schedule 2 Page 25-26, with the assumptions provided. Further details are included in the attached document, Attachment 1.

Witnesses: D. Johnson  
A. Langstaff  
S. McGill  
J. Murphy  
F. Oliver-Glasford

In addition, Enbridge also performed a separate analysis using the ICF Natural Gas Potential Study. In this analysis Enbridge compared the marginal cost in \$/tonne of moving from the Constrained (budgets at the Company's current level of DSM spending) to Semi-Constrained (budgets were gradually doubled) and Unconstrained (assumes no budget constraints or policy restrictions) scenarios as defined in the Natural Gas Conservation Potential Study. This analysis showed that the marginal cost of increasing to the Semi-Constrained scenario was \$60/tonne, which exceeded the LTCPF through 2028. Further details are included in the attached document, Attachment 2.

- b) Given the number of interrogatories received on the topic of incremental customer abatement, and more specifically incremental energy efficiency, Enbridge believes it is appropriate to articulate its concerns and to outline current realities which impact how and whether the Company could proceed with abatement programs.

It is important to first recognize that there are billions of dollars entering the market for low carbon abatement initiatives. This dramatically changes the landscape in which the Utilities are developing and implementing their Compliance Plans. It is also important to note that the gas utilities are already actively collaborating with GreenOn and other entities in the design and roll out of new and significantly expanded programs that are being funded by GreenOn at least in part. In other words, there already is a substantial expansion of abatement, including incremental energy efficiency activities.

Enbridge acknowledges that the MACC is useful in helping to identify potential abatement activities, however the Company notes that a MACC is relevant for a given point in time, and is based on externalities such as technology and the availability of external funding at that point in time. The MACC developed by ICF for the Board did not contemplate the dramatic change in low carbon investment in Ontario through the Government's GreenOn program, which materially impacts the marginal cost effectiveness of abatement programs. The MACC therefore cannot be relied on at this time in the context of non-transparent and significant funding entering the market.

The availability of GreenON funding can play a material role in the cost effectiveness of an abatement activity. For example, if the Government directs funding to an activity that is not currently cost effective from a ratepayer DSM or MACC perspective, such programs may, with the Government's subsidy,

Witnesses: D. Johnson  
A. Langstaff  
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become cost effective. As an example, RNG which is shown as not being cost effective on the MACC at a range of \$77 to \$1,990 per tCO<sub>2</sub>e, has now become cost effective with the addition of Government funding. Conversely, existing DSM programming may become ineffective or less relevant where Government subsidies are funneled to similar programs not driven by the Utility. As an example, Enbridge's DSM Adaptive Thermostat Program has been impacted by GreenOn's program of the same nature, which provides a greater incentive to participants. The potential of Enbridge's program, and its related costs, are materially changed by the presence of Government funding, regardless of what the MACC or Conservation Potential Study might suggest. To have proposed in either 2017 or in 2018 a material increase in this program is a clear example of the risk and problem of proceeding without knowledge of the Government's intentions. If Enbridge was able to gain transparency with GreenOn funding, the MACC may be modified to reflect the new information.

Once the amount of Government funding is known, the Utilities are in a better position to determine how best these funds can be leveraged and considered in the design and implementation of incremental abatement programs, which complement the Governments initiatives instead of competing with them. Until such time, Enbridge believes that development of any incremental DSM or abatement activities is not a prudent course of action as true cost effectiveness cannot be determined.

Enbridge believes that, in addition to first understanding the Government's intentions and priorities, some indication is required from the Board as to whether additional ratepayer funding should be directed at DSM. Clear rules are required around the treatment of results, determination of targets, and appropriateness of budgets.

In the interim, Enbridge is always looking for ways to improve DSM programs within the existing framework to drive improved results though changes to incentive levels, more effective marketing, etc. Outside of the DSM framework, Enbridge is in discussion with GreenON to look at additional funds for new or enhanced programs. This includes proposing new programs that may not be cost effective in the DSM framework, and bidding on RFPs issued by the government to deliver incremental energy efficiency programs.

Witnesses: D. Johnson  
A. Langstaff  
S. McGill  
J. Murphy  
F. Oliver-Glasford

MACC Potential vs. DSM Plan

Customer Segment	Province-Wide Gross Savings in MACC Study (Mid-Range LTCPF)	Net Savings	% of Potential in EGD Franchise	Net Potential in EGD Franchise as per MACC	DSM Plan as originally filed in EB-2015-0049
Residential	97,000,000	82,450,000	62%	51,119,000	56,224,675
Commercial	99,000,000	83,160,000	58%	48,232,800	169,335,715
Industrial	96,000,000	48,000,000	44%	21,120,000	
<b>Total</b>	<b>292,000,000</b>	<b>213,610,000</b>	-	<b>120,471,800</b>	<b>225,560,390</b>

Ref: EB-2017-0224 Exhibit C Tab 5 Sch 2 p26

From 2015-2020 Plan	2018	2019	2020	
Large C/I	40,943,260	41,047,949	41,206,955	
Small C/I	10,402,236	10,610,277	10,822,487	
LI Multi-Res	4,646,475	4,766,646	4,889,430	
<b>Total</b>	<b>55,991,971</b>	<b>56,424,872</b>	<b>56,918,872</b>	<b>169,335,715</b>
HEC	11,249,383	11,798,048	12,281,470	
Adaptive	4,765,500	4,989,858	5,135,099	
LI Part 9	2,021,333	2,001,709	1,982,275	
<b>Total</b>	<b>18,036,216</b>	<b>18,789,615</b>	<b>19,398,844</b>	<b>56,224,675</b>

Note: exludes O-Power as this program was not approved and Small Commercial New Construction as this program was not pursued

**NTG Rates**

HEC	85%	85%	Residential
Industrial	50%	50%	Industrial
Commerical	88%	84%	Commercial
Multi-Residential	80%		

EB-2014-0354, Exhibit B, Tab 1 Schedule 2, Page 9

**Total DSM program - All of Ontario**  
**Achievable Potential - 2020**

<b><u>Description</u></b>	<b><u>Constrained</u></b>	<b><u>Semi-constrained</u></b>	<b><u>Unconstrained</u></b>
Annual Savings (million m3/yr)	1,187	1,338	1,869
Measure Lifecycle Savings CCM (million m3)	14,115	18,909	28,582
Program Spending to milestone year (million \$)	\$666	\$893	\$3,298

Source: Natural Gas Conservation Potential Study - July 7, 2016; Exhibit ES 4, page v

**Industrial Large Volume program - All of Ontario**  
**Achievable Potential - 2020**

<b><u>Description</u></b>	<b><u>Constrained</u></b>	<b><u>Semi-constrained</u></b>	<b><u>Unconstrained</u></b>
Annual Savings - m3/yr	183	241	350
Measure Lifecycle Savings CCM (million m3)	1,174	3,999	5,726
Program Spending to milestone year (million \$)	\$26	\$33	\$442

Source: Natural Gas Conservation Potential Study - July 7, 2016; Exhibit ES 17, page xv

**Province-Wide Gas DSM  
 Achievable Potential by 2020 (excl. Large Vol)**

<u>Description</u>	<u>Constrained</u>	<u>Semi-Constrained</u>	<u>Unconstrained</u>
Annual Savings (million m3/yr)	1,004	1,097	1,519
Measure Lifecycle Savings CCM (million m3)	12,941	14,910	22,856
Program Spending 2015-2020 (million \$)	640	860	2,856
GHG Savings (million tonnes)	24	28	43
\$/tonne	\$26	\$31	\$67
Marginal Cost (\$/tonne)	-	\$60	\$134

Table 1: Abatement Initiatives Summary

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

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

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

- Witnesses: A. Chagani  
 M. Lister  
 S. McGill  
 F. Oliver-Glasford  
 R. Sigurdson

<b>Breakdown of proposed \$2M 2018 LCIF Budget - Customer-Related Abatement Initiatives</b>				
<b>Stage</b>	<b>Initiative</b>	<b>Targeted / Applicable Sectors</b>	<b>Description of work under consideration</b>	<b>2018 Estimate</b>
<b>Stage 1: Conceptualize</b>	Smart Metering	Residential/ Small Commercial	Pilots to demonstrate the integration of hybrid heating (dual-fuel) appliance control that leverages new meter functionality to minimize carbon emissions	\$ 100,000
	RNG - Gasification	Residential/ Commercial/ Industrial	Research Projects to investigate biomass conversion to RNG through gasification	\$ 200,000
	Carbon Capture	Residential/ Commercial/ Industrial	Pilots in Ontario demonstrating potential for 2 carbon capture technologies. Market scan of existing technologies/limitations, development/leveraging of strategic partnerships as well as financial support for vendors to develop new technologies that can achieve up to 100% carbon capture.	\$ 250,000
<b>Stage 2: Formulate</b>	Hydrogen (Power to Gas)	Residential/ Commercial/ Industrial	Technical due diligence and planning, specific to Enbridge's gas distribution system, to establish the initial guidance and capabilities for blending hydrogen into the natural gas pipeline network as means of diversifying how Ontario can meet provincial and federal renewable content requirements. This work is required as a prerequisite before proceeding with an actual field trial of hydrogen blending in a segment of Enbridge's pipeline network.	\$ 500,000
	Net-Zero Homes/ Micro-Generation	Residential/ Small Commercial	Implementation of Net Zero Energy Emissions pilot project for residential homes to build on the earlier 2017 technology integration assessments and planning. The pilot will be implemented in partnership with electric LDC(s) and Municipalities. The objective is testing, optimization and monitoring of variations in the hybrid heating solutions, as well as distributed power generation platforms like solar PV and mCHP. The objective is to fully assess the GHG reduction potential, costs and potential for cost reductions. This results of the multi-home pilot would help inform energy planners and the HVAC industry on the development priorities to accelerate measures that advance higher-value GHG abatement.	\$ 449,000
	Expanded NGV Program	Commercial	Demonstration projects with small fleets. Focus on developing the large transport truck market within Ontario.	\$ 300,000
	Natural Gas Air-Source Heat Pumps	Residential/ Commercial	Conduct field tests to quantify actual savings and provide performance data vs. energy efficient furnaces as well as electric heat pumps. Aim to develop competitively priced natural gas heat pumps specifically for the residential market.	\$ 150,000
<b>Total Estimated 2018 Cost</b>				<b>\$ 1,949,000</b>

Witnesses: S. McGill  
 F. Oliver-Glasford  
 R. Sigurdson

LIEN INTERROGATORY #6

INTERROGATORY

Has Enbridge considered, and will Enbridge consider, rate mitigation measures (through GHG abatement measures, financial assistance, or other measures), specific to low-income customers to minimize the impact of cap and trade on low-income customers? Please specify which measures Enbridge has considered and will consider

RESPONSE

Enbridge has existing programs in place such as the Low Income Energy Assistance Program ("LEAP") that provides financial relief as well as the Home Winterproofing Program ("HWP") that provides free upgrades to improve energy efficiency and thus lower energy bills.

In addition, Enbridge has partnered with Union Gas in a bid for a low-income energy efficiency RFP put forth by GreenON.

Witness: D. Johnson

<b>Administrative Cost Item</b>	<b>2017 Forecast</b>	<b>2017 Actual</b>	<b>2018 Forecast</b>
Staffing Resources (Salaries and Wages)*	\$1,120,000	\$694,590	\$1,500,000
Consulting	\$561,000	\$156,772	\$400,000
Bad debt related to cap and trade	\$900,000	\$600,007	\$960,000
IT Billing System Updates	\$76,100	\$97,600	\$191,000
Customer Education and Outreach	\$115,000	\$12,881	\$0
External Legal Counsel	\$125,000	\$363,648	\$400,000
OEB Costs		\$317,968	\$100,000
C+T GHG reporting and verification costs	\$20,000	\$9,500	\$40,000
Other (travel expenses, market research and communications)		\$20,736	\$60,000
<b>SUB-TOTAL</b>	<b>\$2,917,100</b>	<b>\$2,273,702</b>	<b>\$3,651,000</b>
Low Carbon Initiative Fund	n/a	0	\$2,000,000
<b>TOTAL</b>		<b>\$2,273,702</b>	<b>\$5,651,000</b>

- b) In 2018, Enbridge intends to use existing communication methods as ensure that customers remain informed on the aspects of Cap and Trade, at no additional cost.

Enbridge has been leveraging existing customer communication methods (i.e., no or low incremental cost communication methods) since the inception of the program. A summary has been provided below.

In January 2017, the Company used an on-bill envelope message to direct customers to Enbridge's Cap and Trade website to obtain additional information about the Cap and Trade program. A sample of this on-bill envelop message was filed at EB-2016-0300, Exhibit E, Tab 1, Schedule 1, Appendix D. For detailed information on Enbridge's Cap and Trade website, please refer to Board Staff interrogatory 29 a) filed at Exhibit I.3.EGDI.STAFF.29. Enbridge did not incur any incremental costs for the inclusion of this on-bill envelope message.

Witnesses: T. Bruckmueller  
 A. Langstaff  
 D. McIlwraith  
 F. Oliver-Glasford

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

Table 2: Cap and Trade Roles/Accountabilities in 2018

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

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

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

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

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

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

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

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

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

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

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TR 2, p.92

To advise the number of FTEs approved for 2017 and then how many were actually filled.

RESPONSE

In EB-2016-0300, Exhibit C, Tab 3, Schedule 6, Enbridge forecasted that the Company would require seven full time equivalents ("FTEs") for 2017. Five FTEs were filled.

[REDACTED]

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

[REDACTED]

13. The total amount that will be collected from customers during 2018 based on the proposed carbon proxy price of \$18.99 is \$381,657,052. [REDACTED] Actual differences between the amounts collected from customers and the costs of meeting Enbridge's compliance obligations will be recorded in the applicable deferral and variance accounts for later disposition.

[REDACTED]

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

**TABLE 1: 2018 CUSTOMER-RELATED VOLUMES BY RATE CLASS**  
 (10<sup>3</sup>m<sup>3</sup>)

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

Notes:

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

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

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

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

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

CCC INTERROGATORY #14

INTERROGATORY

Re: Ex. B/T2/S1/p. 3

Please describe EGD's involvement with the Green Investment Fund. How much money is EGD receiving and over what time period? How did EGD determine the 2018 volume reductions associated with the program?

RESPONSE

On November 26, 2015, the Government of Ontario announced a commitment to establish a Green Investment Fund (GIF) that will be targeted at reducing greenhouse gas emissions while strengthening the economy.

On February 4, 2016, the Government of Ontario announced a total of \$100M GIF allocation, in partnership with Enbridge and Union Gas, to help approximately 37,000 homeowners conduct audits to identify energy-saving opportunities and then complete retrofits. The dollars from the GIF are allocated to Enbridge to deliver a program similar to its existing Home Energy Conservation (HEC) program called the "Whole Home Retrofit" (WHR) program to 20,000 program participants over a three year period, from 2016 to 2019. The GIF will provide \$58 million in funding to Enbridge for the WHR program over the term of the agreement.

Enbridge calculates the volume reductions for the GIF/HEC program using the same adjustments associated with the DSM/HEC savings for consistency in forecasting, which equal 691 m<sup>3</sup> per participant. The Company multiplies the volume per participant by the forecasted participants for 2018 and applies the partially effective methodology as used for LRAM forecasting.

Witness: J. Tideman