ENBRIDGE GAS INC.

Answer to Interrogatory from
Consumers Council of Canada (CCC)

Interrogatory

Issue 1

Reference:

Question(s):

Please describe, in detail, the process EGD undertook to develop its DSM Framework and DSM Plan. Please provide a timeline. Please provide all materials provided to EGI's Board of Directors regarding the proposed DSM Framework and DSM Plan.

Response:

Enbridge Gas, and previously Enbridge Gas Distribution Inc. and Union Gas Limited, has been in the business of delivering Demand Side Management activities in Ontario since 1993. Exhibit B, Tab 1, Schedule 1, page 1 and 2 details the history of the key proceedings that led to the development of the Proposed DSM Framework and DSM Plan in this Application. The Proposed DSM Framework and DSM Plan were developed using the direction received from the OEB in its Letter on December 1, 2020. Exhibit B, Tab 1, Schedule 1, page 3-7 outlines how Enbridge Gas took the OEB direction into consideration and page 7-13 outlines how the framework, plan term, and budget were developed. Details of the DSM Plan were developed using knowledge from the many years Enbridge Gas has delivered energy conservation programs, from input through stakeholdering, and market research.

Enbridge Gas did not provide any material to its Board of Directors.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Consumers Council of Canada (CCC)

Interrogatory

Issue 1

Reference:

Exhibit B, Tab 1, Schedule 1, page 4

Question(s):

In its December 1, 2020, DSM Letter the OEB set out primary and secondary objectives related to ratepayer funded natural gas DSM. One of the secondary objectives is to "help lower overall average annual natural gas usage." Please indicate, specifically, how the DSM Plan will help to lower overall average annual natural gas usage over the term of the plan. Please provide a forecast of the expected overall natural gas usage reduction for the plan term (2022-2027).

Response:

Enbridge Gas notes that the DSM Plan was amended on September 29th, 2021 to account for the OEB rolling over of the 2021 DSM Plan into 2022, such that the amended DSM Plan term is 2023 to 2027.

Enbridge Gas has proposed a portfolio of DSM programs, with the vast majority of program budgets dedicated to what is traditionally called resource acquisition programs, with sector scorecards that have performance metrics measured in terms of gas reduction (cubic meters). All of the programs on the annual scorecards in the Residential, Low Income, Commercial, Industrial and Large Volume sectors have performance metrics measured in reduced gas consumption as indicated throughout the pre-filed evidence. These programs, with the proposed metrics and associated targets will clearly reduce gas consumption over what would occur without the DSM portfolio in place.

For a forecast of average use per customer please see the response to Exhibit I.10.EGI.ED.24. As shown in the table average use per customer declines over the 2023-2027 DSM Plan term.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Consumers Council of Canada (CCC)

Interrogatory

Issue 1

Reference:

Exhibit B, Tab 1, Schedule 1, page 6

Question(s):

The DSM Letter states that the level of natural gas savings achieved through DSM programs for each dollar spent has been decreasing. Please set out the level of natural gas savings achieved through DSM for the years 2011-2021. What is the expected level of natural gas savings for each dollar spent for the proposed plan?

Response:

Please see the table below for the level of natural gas savings achieved (or forecasted for the 2021 program year) and the cost effectiveness from 2011-2021.

Historical Savings	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021** [3] [4]
Net Annual Natural Gas Savings (m3/year)	216,457,163	197,574,241	227,703,145	175,365,259	174,048,749	106,493,294	114,026,896	108,402,476	115,690,827	96,238,682	104,440,935
Total Net Cumulative Natural Gas Savings (m3)	*Not Applicable* [2]	3,405,327,570	3,647,742,710	2,609,302,068	2,576,930,931	1,796,549,300	1,963,910,556	1,931,993,936	2,075,861,664	1,632,224,492	1,760,815,237
Total DSM Spending (millions)[1]	$55,214,518	$61,928,729	$60,678,772	$66,225,062	$68,172,617	$106,313,936	$126,944,549	$135,277,387	$138,447,745	$119,036,736	$135,012,398
m3/$ spent - Annual	**3.92**	**3.19**	**3.75**	**2.65**	**2.55**	**1.00**	**0.90**	**0.80**	**0.84**	**0.81**	**0.77**
m3/$ spent - Cumulative	*Not Applicable* [2]	**54.99**	**60.12**	**39.40**	**37.80**	**16.90**	**15.47**	**14.28**	**14.99**	**13.71**	**13.04**

[1] Includes all portfolio costs
[2] Cumulative savings started being tracked in 2012
[3] 2021 forecast of results are as detailed in interrogatory response to I.6.EGI.STAFF.13 a, Attachment 1
[4] 2021 gas savings are not forecasted in terms of net annual natural gas savings. For illustrative purposes, use 2020 as a proxy to estimate net annual natural gas savings.

The expected level of natural gas savings for each dollar spent for the proposed plan is presented in the below table. Please note for the 2025-2027 program years, the Building Beyond Code and Low Carbon Transition budgets have been included and will be reassessed at the mid-point assessment. The Company notes that all figures presented are in nominal dollars for cost effectiveness calculations.

2023-2027 DSM Plan Savings	**2023**	**2024** [2]	**2025** [2]	**2026** [2]	**2027** [2]
Net Annual Natural Gas Savings (m3/year)	106,677,914	108,884,161	111,184,344	113,153,031	115,416,091
Total Net Cumulative Natural Gas Savings (m3)	1,749,703,196	1,785,254,075	1,822,184,157	1,856,077,840	1,893,199,397
Total DSM Spending (millions)[1]	$142,260,000	$148,822,200	$155,701,494	$162,913,517	$170,474,680
m3/$ spent - Annual	**0.75**	**0.73**	**0.71**	**0.69**	**0.68**
m3/$ spent - Cumulative	**12.30**	**12.00**	**11.70**	**11.39**	**11.11**

[1] Includes all portfolio costs

[2] 2024-2027 targets are calculated by applying the Target Adjustment Mechanism (TAM) as illustrated in the Proposed Framework and assuming 100% of the previous year's budget is spent and 100% of the previous year's target is achieved.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Canadian Manufacturers &Exporters (CME)

Interrogatory

Issue 1

Reference:

Exhibit E, Tab 1, Schedule 1, page 2 of 5

Question(s):

At page 2 of 5, EGI quotes from the Board's DSM letter, which stated that one of the reasons DSM savings efficiency is decreasing may be the result of EGI striving to meet a number of different priorities.

(a) Please describe EGI's different priorities, and how they are consistent with the objectives of rate payer funded DSM.

(b) To the extent not already in the evidence, please describe how EGI's plan addresses the issue of competing priorities in order to achieve more natural gas saving efficiency for the cost.

Response:

a - b)

The areas of focus and therefore priorities encompassed in Enbridge Gas's proposal are intended to reflect the priorities of the OEB, Enbridge Gas's customers and interested parties. The DSM Plan focuses on an ultimate goal of meeting various customers' needs and providing programs across a broad spectrum in the context of the OEB's objectives for ratepayer funded DSM programming; primarily "assisting customers in making their homes and businesses more efficient in order to help better manage their energy bills."[1]

The proposed DSM Plan is also intended, from a cost benefit point of view, to be responsive to the mandate of the OEB as observed by the government in its letter to the OEB on November 27, 2020 regarding DSM: "While we would be supportive of increasing cost-effective ratepayer funding of natural gas conservation in Ontario, it is

[1] EB-2019-0003, OEB Letter Post-2020 Natural Gas Demand Side Management Framework (December 1, 2020), p. 2.

recognized that the OEB must balance ratepayer interests regarding bill impacts with the level of natural gas savings pursued."[2]

Ultimately, the DSM Plan has been designed for the benefit of Ontario's natural gas customers, to assist with efforts to reduce natural gas use and contribute toward the government's objectives of reduced greenhouse gas emissions.

More specifically, the Company is expected to deliver programs across its diverse customer groups, including low income, residential and small volume business customers for which program delivery is often not as cost effective and therefore drives lower gas savings for the cost than efforts to support energy efficiency with larger commercial or industrial customers. Generally speaking, cost-effectiveness can be expected to be more significant with larger commercial or industrial programming.

However, in order to ensure a balanced approach, simultaneously and fairly prioritizing opportunities to participate in DSM for all customers, the Company has proposed a hybrid set of performance governance components, as summarized on page 2 of Exhibit D, Tab 1, Schedule 2. This includes separate scorecards with gas savings metrics at a sector level (and in the case of the Commercial sector by defining separate metrics for small and large volume customers), with fixed weightings for the sectors. In so doing, the Company is incented to maintain a focus on the achievement of gas savings across each customer group including being responsive to expected areas of focus highlighted by the OEB in their December 1, 2021 DSM letter (for example, extending programming to hard to reach customers, small volume, low income and on-reserve communities). A separate net benefits metric is included for maintaining a focus on driving net benefits across the entire portfolio in a balanced manner. Additional details, including a 'back cast' of the 2015-2020 results using the proposed performance structure is included in Exhibit I.8.EGI.STAFF.18.

[2] MC-994-2020-1084, Ministry of Energy, Northern Development and Mines, Office of the Associate Minister of Energy Letter to the Ontario Energy Board (November 27, 2020), p. 2.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 1

Reference:

The OEB's post-2021 DSM guidance letter

Preamble:

The OEB's guidance letter includes the following:

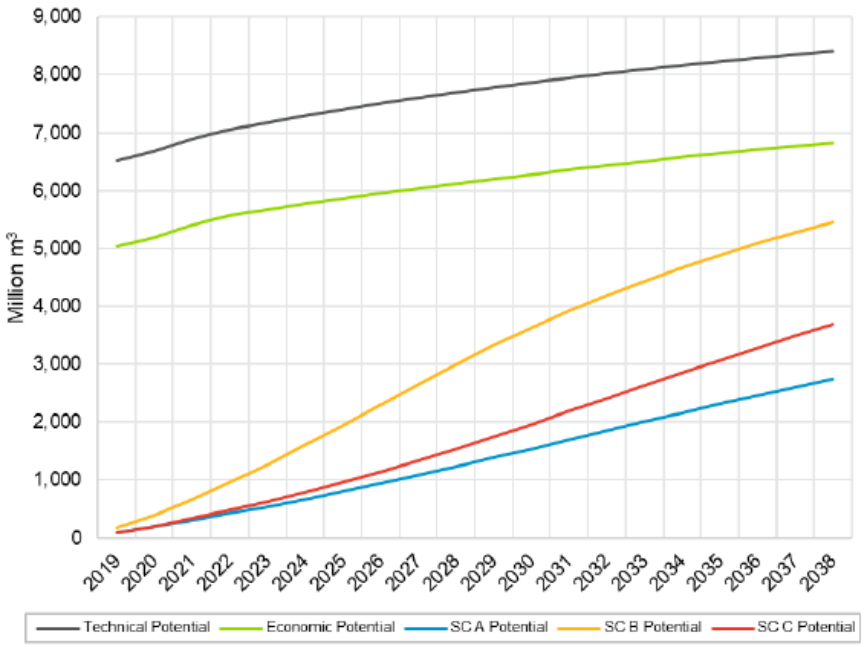
> "Enbridge Gas's DSM plan application should be informed by … the 2019 Achievable Potential Study …" (p. 2).
>
> "The OEB completed an updated Achievable Potential Study in October 2019. The study was integrated with the IESO with the objective of identifying and quantifying energy savings (electricity and natural gas), greenhouse gas emissions reductions and associated costs from demand side resources for the period from 2019 to 2038. While not determinative, the OEB expects that the findings from the study will be used to inform future natural gas DSM plans." (p. 4-5)

Note that this question is also related to other issues, such as the appropriateness of the gas savings levels and budgets proposed by Enbridge.

Question(s):

(a) Please add a line to the following figure from page vii of the 2019 Achievable Potential Study to approximately represent the gas savings according to Enbridge's DSM plans. Where available, please use audited results. For other years, please use forecast results based on the DSM plans (at 100% target levels). For years beyond 2027, please continue the line at the same slope as for the years 2023-2027. Please make and state any assumptions and caveats as necessary.

Figure ES-4. Natural Gas Potential



Source: Navigant analysis

(b) Please add rows to the following figure from page vii of the 2019 Achievable Potential Study to approximately represent the gas savings according to Enbridge's DSM plans. Where available, please use audited results. For other years, please use forecast results based on the DSM plans (at 100% target levels). For years beyond 2027, please continue the line at the same slope as for the years 2023-2027. Please make and state any assumptions and caveats as necessary.

Table ES-3. Key Natural Gas Potential Summary Statistics – Three Indicative Years

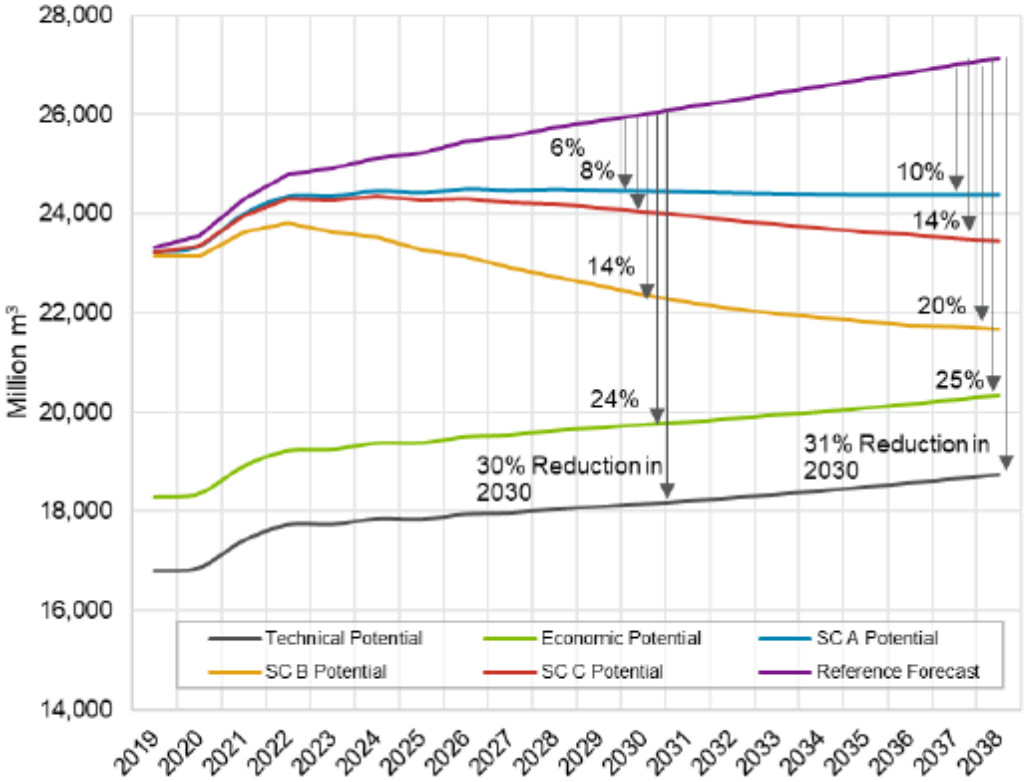
Year	Potential Type	Natural Gas Potential (Million m3)	GHG Emissions Reduction (KT CO2e)	Program Admin Cost in Given Year ($ Million)	Average Incentive LUEC ($/lifetime m3)	TRC-Plus[4] Ratio	PAC Ratio[5]
2023	Max Achievable (Sc B)	1,266	2,474	$548	$0.082	3.3	2.1
2030	Max Achievable (Sc B)	3,634	7,106	$749	$0.104	3.2	2.3
2038	Max Achievable (Sc B)	5,458	10,672	$665	$0.131	2.9	2.3
2023	Semi Constrained (Sc C)	623	1,217	$175	$0.054	3.3	2.4
2030	Semi Constrained (SC C)	1,969	3,849	$309	$0.063	3.5	2.8
2038	Semi Constrained (Sc C)	3,687	7,209	$363	$0.074	3.4	3.2
2023	Constrained (Sc A)	542	1,060	$79	$0.031	3.7	3.8
2030	Constrained (Sc A)	1,542	3,014	$79	$0.024	4.0	4.7
2038	Constrained (Sc A)	2,740	5,357	$79	$0.021	4.0	7.2

(c) Please add a line to the following figure from page ix of the 2019 Achievable Potential Study to approximately represent the reference case minus the gas

savings according to Enbridge's DSM plans. Where available, please use audited results. For other years, please use forecast results based on the DSM plans (at 100% target levels). For years beyond 2027, please continue the line at the same slope as for the years 2023-2027. Please make and state any assumptions and caveats as necessary.

Please also add another line to the following figure to show the actual gas consumption figures for the years with available data and for other years showing Enbridge's estimate for gas consumption in Ontario were there to be no DSM (i.e. akin to an updated reference case).

Figure ES-6. Natural Gas Potential – Compared with Reference Forecast



(d) Navigant made the following recommendation at page xxi of the 2019 Achievable Potential Study: "The four most important of Navigant's recommendations for improving future studies are provided below. … Ensure the costs of natural gas expansion are properly accounted for within the natural gas avoided costs. It is unclear to what degree the natural gas avoided costs currently account for the costs associated with natural gas infrastructure expansion, specifically the costs of

installing pipelines (and associated equipment) to connect new developments to the natural gas distribution network."

Please describe in detail to what degree the natural gas avoided costs currently account for the costs associated with natural gas infrastructure expansion, specifically the costs of installing pipelines (and associated equipment) to connect new developments to the natural gas distribution network.

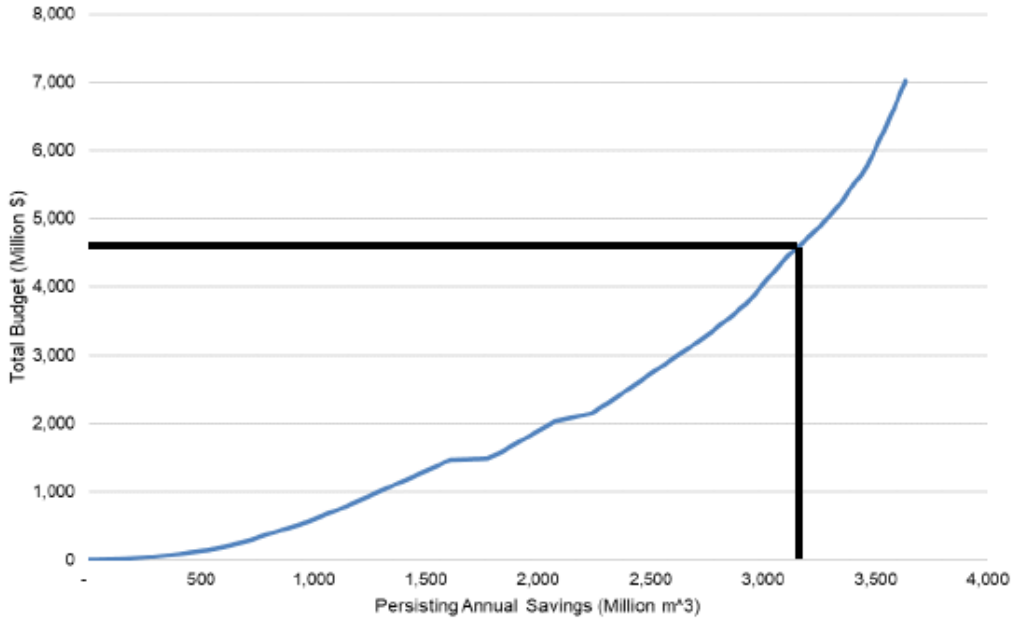
(e) Please provide a table indicating the avoided costs associated with natural gas infrastructure expansion, specifically the costs of installing pipelines (and associated equipment) to connect new developments to the natural gas distribution network ($/m^3).

(f) Has Enbridge fulfilled the following recommendation at page 186 of the 2019 Achievable Potential Study? If not, why not, does it intend to do so, and when does it intend to do so?

> • **Ensure the costs of natural gas expansion are properly accounted for within the natural gas avoided costs.** It is unclear to what degree the natural gas avoided costs account for the costs associated with natural gas infrastructure expansion. For example, when considering fuel switching for new construction, it seems likely that the existing avoided costs would understate the benefit of not having to install pipelines and access points to a new housing development. If it can be demonstrated that the existing avoided costs do not account for these costs, or do not account for them specifically in the case of new construction, the OEB should consider developing (or engaging others to develop) another set of avoided costs that does. These could then be used for future fuel switching studies where there is an expectation of meaningful growth residential and commercial building stock.

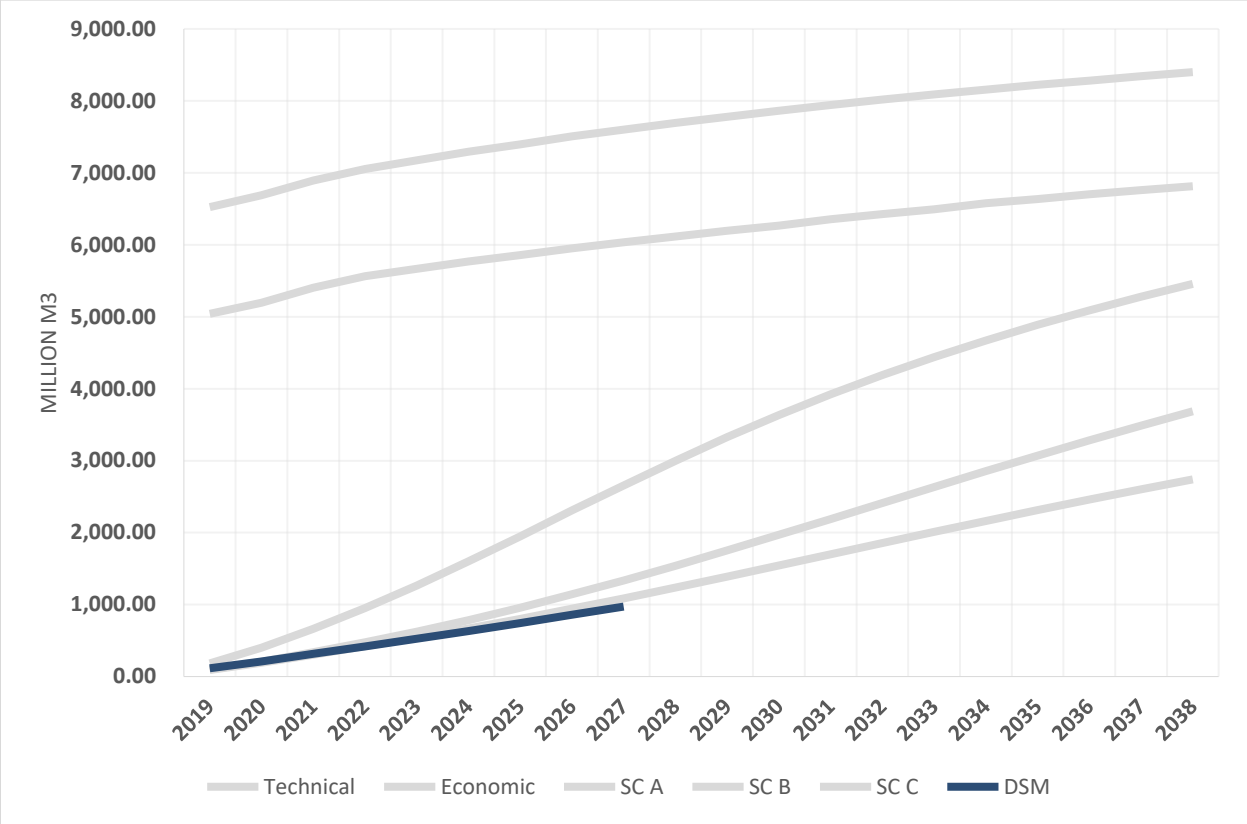
(g) Please confirm that the black line added to the following figure on page F-24 of the 2019 Achievable Potential Study approximately represents the persisting annual savings and budget level that would correspond with Ontario's Environment Plan (link). If Enbridge does not know or believes this is false, please check with the authors of the report and the Board Staff involved in the commissioning of the report.

Figure F-34. Natural Gas Energy Cost Curve, Scenario B in 2030



Response

a)



Caveats:

- 2019 values actual post audit net annual m3
- 2020 values actual pre audit net annual m3
- 2021 values represent a forecasted CCM value provided to the OEB in a July 2021 updated, divided by the 2020 average measure life to get to net annual m3
- 2022 values represent application of the TAM at 100% achievement of forecast 2021 results divided by 2020 average measure life to get to net annual m3
- Enbridge Gas will not show beyond 2027 because this is beyond the proposed DSM Plan term.
- Enbridge Gas notes that the APS uses a fixed assumption for net to gross values that is substantially different from the DSM Plan values utilized which would have a material effect on the comparison of the DSM Plan values to any APS scenario

b) To determine the annual savings and total costs, Enbridge Gas utilized the excel spreadsheet, "Appendix 2-Forecast-Potential-by-Measure-2019". [1] This can be downloaded from the "Natural Gas Conservation Potential Studies" section on the OEB website. Enbridge Gas corrected the original table label for a mislabeled column from "Program Admin costs" to "Total costs in Given Year" to match the Appendix 2 data file from the APS. Enbridge Gas also calculated the estimated measure life from the 2020, 2030 and 2038 years in the APS using the provided Levelized Unit Energy Costs ("LUEC") value to provide better context when comparing the APS table provided.

APS Table ES-3 (recreation)

Year	Potential Type	Natural Gas Potential (Million M3)[1]	GHG Emissions Reduction (KT CO2e)[2]	Total Costs in Given Year ($ Million[3]	Average Incentive LUEC $/lifetime m3)	TRC Plus Ratio	PAC Ratio	Assumed Measure Life[4]
2023	Max Achievable (SCB)	1,266	2,474	$ 548	0.08	3.30	2.10	21
2030	Max Achievable (SCB)	3,634	7,106	$ 749	0.10	3.20	2.30	23
2038	Max Achievable (SCB)	5,458	10,672	$ 665	0.13	2.90	2.30	28
2023	Semi Constrained (SCC)	623	1,217	$ 175	0.05	3.30	2.40	22
2030	Semi Constrained (SCC)	1,969	3,849	$ 309	0.06	3.50	2.80	23
2038	Semi Constrained (SCC)	3,687	7,209	$ 363	0.07	3.40	3.20	25
2023	Constrained (SCA)	542	1,060	$ 79	0.03	3.70	3.80	21
2030	Constrained (SCA)	1,542	3,014	$ 79	0.02	4.00	4.70	22
2038	Constrained (SCA)	2,740	5,357	$ 79	0.02	4.00	7.20	27

[1] Natural Gas Potential is cumulative annual savings - so the savings referenced in 2023 = the annual savings from 2019, 2020, 2021, 2022 & 2023 combined

[2] Conversion factor used in the DSM Plan application to derive GHG reductions from natural gas savings was 1.874 kT CO2e/Million M3 while the APS utilized a value of 1.95 kT CO2e/Million M3

[3] Changed Program Admin Costs to Total Costs. Additionally, Enbridge Gas values represent were modified to be as comparable as possible to those of the APS. In order to accomplish this, Enbridge Gas started with the gross budgets, and backed out the overhead costs, then multiplied that value by the average NTG for a given year. Since NTG was not a consideration of the APS it is difficult to determine how realistic or useful this comparison is.

[4] Measure life was calculated through determining the in-year annual savings per Scenario leveraging the excel spreadsheet mentioned above and leveraging the LUEC calculation as outlined in the 2019 APS Report p.110, "The consumer LUEC is calculated as the incremental cost divided by the lifetime savings."

[1] EB-2015-0117, Natural Gas Conservation Potential Studies, 2019 APS Data Appendix 1 – Forecast Potential and Consumption (updated December 18, 2019). Natural Gas Conservation Potential Studies | Ontario Energy Board (oeb.ca)

DSM Table ES-3 comparison

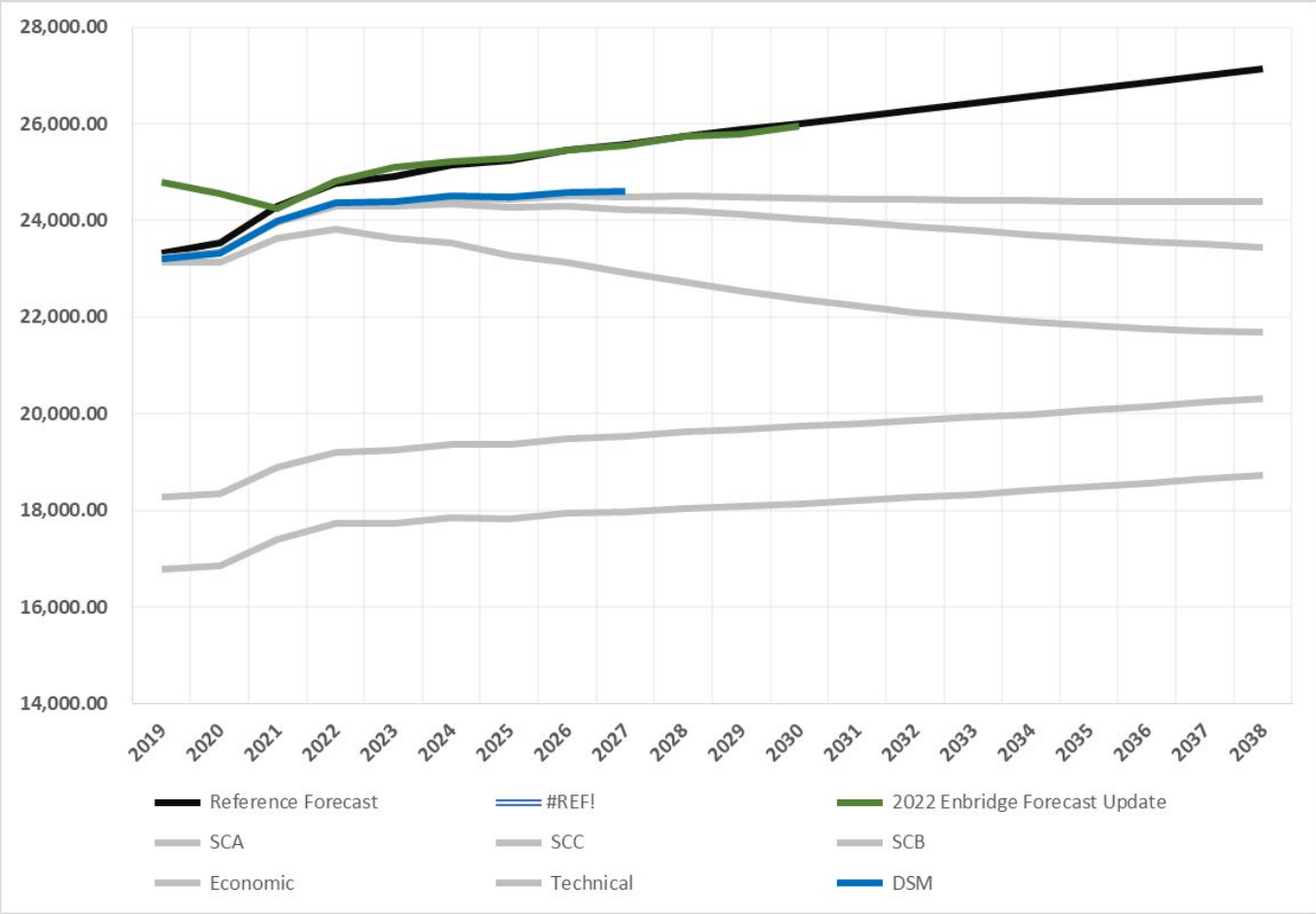
Year	Natural Gas Potential (Million M3)[1]	GHG Emissions Reduction (KT CO2e)[2]	Total Costs in Given Year ($ Million)[3]	Average Incentive LUEC $/lifetime m3)	TRC Plus Ratio	PAC Ratio	Assumed Measure Life
2019[4]	116	217	$ 60.66	0.03	2.57	3.58	18
2020[5]	212	397	$ 42.98	0.03	2.09	3.14	17
2021[6]	316	591	$ 69.85	0.04	2.34	3.16	17
2022[7]	417	782	$ 71.88	0.04	2.34	3.14	17
2023	524	982	$ 79.48	0.05	3.29	3.16	15
2024	633	1,186	$ 82.68	0.05	3.26	3.19	15
2025	744	1,395	$ 86.05	0.05	3.37	3.44	15
2026	857	1,607	$ 89.59	0.05	3.37	3.44	15
2027[8]	973	1,823	$ 93.26	0.05	3.37	3.44	15

[1]Natural Gas Potential is cumulative annual savings - so the savings referenced in 2023 = the annual savings from 2019, 2020, 2021, 2022 & 2023 combined.
[2]Conversion factor used in the DSM Plan application to derive GHG reductions from natural gas savings was 1.874 kT CO2e/Million M3 while the APS utilized a value of 1.95 kT CO2e/Million M3
[3]Enbridge values represent were modified to be as comparable as possible to those of the APS. In order to accomplish this, Enbridge started with the gross budgets, and subtracted the overhead costs, then multiplied that value by the average NTG for a given year. Since NTG was not a consideration of the APS it is difficult to determine how realistic or useful this comparison is.
[4]2019 values actual post audit net annual m3
[5]2020 values actual pre audit net annual m3
[6]2021 values represent a forecasted CCM value provided to the OEB in a July 2021 updated, divided by the 2020 average measure life to get to net annual m3
[7]2022 values represent an application of the proposed TAM on 100% achievement of forecast 2021 results divided by 2020 average measure life to calculate assumed net annual m3
[8]Enbridge Gas will not show beyond 2027 because this is beyond the proposed DSM Plan term.

c) The Reference Forecast was the developed as part of the 2019 APS study. Enbridge Gas notes that there were a number of adjustments made by the authors of the report which the company believes includes the removal of power generation volumes from the Company's total volume forecast and to apply another adjustment factor to align the forecast with the base year due to the different level of granularity in the actual data and the forecast.

The following figure includes an additional line (green) to show the Company's actual volumes for 2019-2020 and the most updated forecast for the period of 2021-2031 with 'no DSM'. All volumes are normalized to 2022 Budget degree days, and to be consistent with the Reference case power generation volumes are excluded. Please note that this line is provided for illustration purpose only and not appropriate to make comparisons with the Reference case line.

DSM approximately reflects the reference case minus the gas savings according to Enbridge Gas' DSM plans and previous results.



Caveats – DSM Values

- 2019 values actual post audit net annual m3
- 2020 values actual pre audit net annual m3
- 2021 values represent a forecasted CCM value provided to the OEB in a July 2021 updated, divided by the 2020 average measure life to get to net annual m3
- 2022 values represent application of the TAM at 100% achievement of forecast 2021 results divided by 2020 average measure life to get to net annual m3
- Enbridge Gas will not show beyond 2027 because this is beyond the proposed DSM Plan term.
- Enbridge Gas notes that the APS uses a fixed assumption for net to gross values that is substantially different from the DSM Plan values utilized which would have a materially effect on the comparison of the DSM Plan values to any APS scenario

d) Enbridge Gas's avoided downstream infrastructure costs do not include costs associated with natural gas infrastructure expansion, specifically the costs of installing pipelines (and associated equipment) to connect new developments to the natural gas distribution network.

As described at Exhibit E, Tab 5, Schedule 1, pages 6 to 7, Enbridge Gas engaged Guidehouse Inc. to conduct a jurisdictional scan to investigate industry practices for DSM avoided costs. With respect to avoided infrastructure costs, the scan found that "infrastructure costs are not considered in avoided DSM costs in most comparator jurisdictions".[2] Furthermore, throughout Guidehouse Inc.'s report there were no findings related specifically to the costs of installing pipelines (and associated equipment) to connect new developments to the natural gas distribution network.

e) Please refer to part d above.

f) Navigant Consulting, Ltd. was engaged by the IESO and the OEB to prepare the 2019 Achievable Potential Study for electricity and natural gas across Ontario. The recommended improvements listed on pages 185 to188 of Navigant's report were "recommendations made to the IESO and OEB"[3] for consideration for future studies, as such Enbridge Gas has not responded to recommendations made by Navigant, directed to the IESO and OEB.

g) Not Confirmed. Enbridge Gas does not agree that the black line (square) added to the figure on page F-24 of the 2019 Achievable Potential Study and reproduced above approximately represents the persisting annual natural gas savings and budget level that would correspond with Ontario's Environment Plan. As represented in the chart entitled "Planned Emission Reductions in 2030 by Sector", on page 24 of the Made-in-Ontario Environment Plan which provides a breakdown of the CO2 emission reductions in 2030 by sector from environment plan actions and extended policies, the chart indicates that approximately 3.2 MT CO2e or 18% of the total 18 MT CO2e are forecast. This is based on the potential of a number of actions related to natural gas conservation, with rate-payer funded natural gas DSM being one component. The figure referenced above shows Persisting Annual Savings (in million m^3) on the x axis. Therefore, when converted to m^3 of natural gas, the 3.2 MT of CO2e outlined in the Environment Plan would equal approximately 1.7 billion m^3 natural gas, not the approximate 3.2 billion m^3 of persisting annual savings reflected in the black lines overlayed by ED on the referenced figure.

In terms of the budget needed to support a 3.2 MT reduction of CO2 emissions by 2030 from all natural gas conservation, the 2019 Auditor General's Reports on the Environment stated "the Ministry estimated the additional required funding for this

[2] EB-2021-0003 EGI DSM Multi-year Plan and Framework (May 3, 2021), Exhibit E, Tab 5, Schedule 1, Attachment 4, p. 6.
[3] 2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study, Navigant Consulting Ltd. (September 13, 2019), p. 185.

scenario from 2021 to 2030 would be $6.6 billion."[4] Enbridge Gas does not have the requisite data, information nor context to confirm this estimate as the Company did not author nor participate in the development of either the Environmental Plan or the Auditor General's report.

[4] Annual Report 2019 Reports on the Environment Volume 2, Office of the Auditor General of Ontario (Fall 2019), p. 151. Annual Report 2019 of the Office of the Auditor General of Ontario Reports on the Environment

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 2

Reference:

EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87

Preamble:

In the previous DSM plan decision, the OEB directed Enbridge to present an analysis of net rate impacts. The direction reads as follows:

> "The cost impact of DSM programs for a customer was discussed during the proceeding. Some parties suggested that this cost impact be shown as a net rate impact, and both the benefits and the costs of the DSM programs be included in the same calculation. The OEB suggests the gas utilities consider a net rate impact approach further. Some areas to consider include: the sample (e.g., years, participants, customers, etc.) required to reasonably consider the benefits and costs to customers, price forecasts used, demand reduction impact on price, among others. This analysis should be presented to the OEB as part of the gas utilities' next multi-year DSM plans."[1]

Question(s):

(a) Please provide a copy of the analysis that the OEB said should be presented as part of the gas utilities' next multi-year DSM plans in the above passage.

(b) Please provide the avoided cost figures used by Enbridge for avoided in-franchise distribution and transmission costs (i.e. excluding upstream savings in shipping tariffs). Please provide the complete figures with a full breakdown by year, etc. It is not clear to us, but Enbridge may refer to these as avoided natural gas downstream infrastructure costs (per Exhibit C, Tab1, Schedule 1, Page 48).

(c) Please describe what DRIPE is.

[1] EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87.

(d) Please provide Enbridge's best estimate of the price suppression effect of conservation savings in the Ontario market.

(e) Please provide any studies that Enbridge has identified regarding the quantification of DRIPE / price suppression.

(f) Please provide the marginal capital cost arising from an additional m^3 of design day demand in Enbridge's system. Please provide an average figure over the entire system. If it significantly varies from place to place, please provide location-specific figures.

Response

a) Enbridge Gas would like to correct the assertion in the question. The OEB clearly provided a suggestion for further consideration from a 2016 perspective. The suggestion would require definition of a number of variables and an appropriate analytical framework in order to consider what impact, if any, this might have on future DSM Plan development. Further, the context around the suggestion refers to the monthly bill impact, commonly referred to as the $2/month residential rate impact. Subsequently, in the DSM Letter in 2020, the OEB clearly refers to the current budget levels, the fact that they had doubled from the previous term and then states, "*The OEB anticipates modest budget increases to be proposed by Enbridge Gas*…" In the OEB's most recent direction to the Company of submission of the next DSM Plan, there is no reference to the residential rate impact, only to the current, existing budgetary levels most recently approved by the OEB (2021 and since 2022) and the expectation of modest increases from these budget levels. Additionally, in the DSM Letter, the OEB mentioned a number of expectations and considerations for the DSM Plan development, however, net rate impacts was not one them. In the context, where Enbridge Gas was given only 5 months to develop, complete and file a DSM Plan application, the decision was made not to perform this analysis and therefore an analysis cannot be provided.

b) Enbridge Gas avoided costs are broken out and quantified in the categories listed in evidence at Exhibit E, Tab 5, Schedule 1, page 5. Enbridge Gas is interpreting avoided in-franchise distribution and transmission costs (i.e. excluding upstream savings in shipping tariffs) to be the sum of the following avoided cost categories:

- Avoided natural gas downstream infrastructure costs
- Avoided unaccounted for natural gas fuel losses
- Avoided natural gas seasonal storage costs (applicable to Union Rate Zones avoided costs only)

For the figures and breakdown by year for these avoided cost components, see the 'Avoided DS Infrastructure' and 'Avoided Unaccounted for Fuel Loss' tabs within Exhibit I.5.EGI.ED.16 Attachment 1 (EGD rate zone) and Exhibit I.5.EGI.ED.16, Attachment 2 (Union rate zones).

c) DRIPE is described in evidence at Exhibit E, Tab 5, Schedule 1, Attachment 4, page 5, in the Guidehouse DSM Avoided Costs Study as follows:

"Demand reduction-induced price effects (DRIPE), also known as price effects – these are reductions in the wholesale price of the gas commodity based on structural changes in the market due to the load reduction caused by energy efficiency".

d - e)

Enbridge Gas does not have estimates or studies that quantify the price suppression effects of conservation in the Ontario market. In 2020 Enbridge Gas engaged Guidehouse Inc. to conduct a jurisdictional scan on industry best practices for avoided costs and found that 8 of 9 jurisdictions do not account for DRIPE (Exhibit E, Tab 5, Schedule 1, pages 5 to 7). The amount appears to be small as referenced in Exhibit E, Tab 5, Schedule 1, Attachment 4, page 20 for the only jurisdiction Guidehouse was able to find that utilized DRIPE.

f) Enbridge Gas believes this is out of scope to the DSM proceeding as it is asking about system design which is a topic more suited to IRP. Please refer to Exhibit I.1.EGI.PP.5 for details on how Enbridge Gas will continue to integrate IRP into its planning and analysis processes.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 1

Reference:

EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87

Preamble:

In the previous DSM plan decision, the OEB directed Enbridge to present an analysis of net rate impacts. The direction reads as follows:

> "Avoided distribution costs were examined extensively during this proceeding. Several parties provided recommendations on areas of improvements in calculating the avoided costs that result from DSM programs. Considerable time was spent reviewing and updating a summary table proposed by one of the expert witnesses. The OEB expects the utilities to provide a transparent calculation of the avoided costs and a list of the input assumptions that go into this calculation. Given the different geography, system and customers between Union and Enbridge, it is expected that the avoided cost calculation will be specific to each utility; however, the methodology, approach and presentation should be the same for both gas utilities."[1]

Question(s):

(a) Please comment on each of the conclusions made in the expert evidence by Paul Chernick filed in EB-2015-0029/0049. Please also comment on the specific net rate impact figures generated by Mr. Chernick.

(b) Where Enbridge disagrees with net rate impact figures calculated by Paul Chernick, please provide Enbridge's best estimate along with all of the underlying calculations and assumptions.

[1] EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87.

Response

a - b)

ED has made reference to a paragraph in the OEB's 2015-2020 DSM Plan Decision on the topic of avoided costs and goes on to ask Enbridge Gas to comment on conclusions made in the expert evidence of Paul Chernick on behalf of ED/GEC in EB-2015-0029/0049. It is important to remind parties:

i. Mr. Chernick has not been proposed by ED or any other party to provide expert evidence in this proceeding. Evidence he provided more than six years ago in a separate proceeding is in the Company's opinion out of scope and as such Enbridge Gas will not comment on any conclusion put forth by Mr. Chernick.

ii. The OEB provided context in its 2015-2020 DSM Plan Decision that:

> GEC and ED both indicated the OEB's $2.00/month guidance be refined, taking into consideration the analysis provided by Mr. Neme and Mr. Chernick that discussed the impact of additional avoided costs. GEC and ED submitted that by including these additional avoided costs in the calculations of cost-effectiveness and bill impacts, the result would be that both gas utilities can spend significantly greater amounts on their DSM programs without increases to customers' bills.[2]

The OEB went on to find that:

> [**t]he OEB does not accept the submissions put forth by GEC and ED with respect to revising the bill impact guidance and considering additional avoided costs** [*emphasis added*]. The OEB is satisfied that the maximum bill impact to residential customers is consistent with the cost guidance outlined in the DSM Framework.[3]

iii. In its Decision and Order on Cost Awards, the OEB provided,

> [t]he issue of avoided costs was dealt with in the DSM Framework and Guidelines. GEC made its position known at the time it provided comments on the draft October 2014 DSM Framework and Guidelines. The OEB did not follow GEC's recommendations. GEC chose to re-argue its position at the hearing. GEC chose to retain an expert to deal solely with this issue at a cost of $149,172.50. The amount of time and resources spent on the issue by GEC was out of proportion with the decision points before the OEB in this proceeding.[4]

Given the foregoing, the Company does not believe that the re-litigation of evidence and conclusions already not accepted by the OEB should be pursued yet again.

Please see response to Exhibit I.5.EGI.ED.16.

[2] EB-2015-0029 / EB-2015-0049, OEB Decision and Order (January 20, 2016), p. 58.
[3] Ibid, p. 59.
[4] EB-2015-0029 / EB-2015-0049, OEB Decision and Order on Cost Award (May 10, 2016), p. 8.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 1

Reference:

EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87

Preamble:

In the previous DSM plan decision, the OEB directed Enbridge to develop new joint and enhanced joint programs with the IESO:

> "The opportunity for collaborative work among the gas and electric utilities, along with the IESO, is expected to result in a number of new joint programs. The OEB expects enhanced joint energy conservation programs will reduce customer confusion and improve the efficiency of program delivery. The OEB expects this to be an area that the gas utilities explore and pursue aggressively over the course of this DSM term, with design details of the joint programs initially provided as part of the mid-term review."[1]

Question(s):

(a) Please list the joint IESO/Enbridge programs in the 2015-2020 plan and list the joint IESO/Enbridge programs in the 2023-2027 plan. Please include a table for each plan showing the budgets for each program. Please also include a table showing the correspondence between the old and new programs (e.g. where one program has continued with adjustments under a new name, etc.).

(b) Please specifically list how coordination with the IESO has been incrementally enhanced since the 2015-2020 plan.

[1] EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87.

Response

a) Please see tables below.

2015-2020:

Low Income

Year(s)	Partner	Details	Annual Program Spend
2016	Toronto Hydro	Co-Delivery of Enbridge Home Winterproofing and IESO/Toronto Hydro Home Assistance Program	$4,543,350
2017-2020	IESO	Co-delivery of Enbridge Home Winterproofing Program and IESO Home Assistance Program, now Energy Affordability Program, where overlapping communities existed for Indigenous On Reserve Residential communities	2017 $4,539,420 2018 $5,224,730 2019 $7,141,896 2020 $6,363,661
2019-2020	Peterborough Distribution Inc.	Identify and deliver the Enbridge Home Winterproofing Program (HWP) to low-income natural gas customers applying to the Affordability Fund Trust program who meet the HWP eligibility/qualifications.	2019 $7,141,896 2020 $6,363,661

Residential

Year(s)	Partner	Details	Annual Program Spend
2017-2018	IESO	Whole Home Pilot - Enbridge created and delivered a combined natural gas and electric residential pilot program offering both CDM and DSM measures to customers. Using the HER offering as a base, the IESO was able to layer on prescriptive incentives for customers installing appliances and other electric savings measures between the pre and post energy assessments.	$0
2019	Hydro Ottawa	Through 2019, Hydro Ottawa partnered with Enbridge to top up the Smart Thermostat (to $100) incentives for residents of the Kanata North Area. Participants received a Hydro Ottawa on-bill credit of up to 100% of the purchase price (minus DSM incentive) if they met Hydro Ottawa's eligibility criteria	$0
2016-2019	Toronto Hydro	Beginning in 2016, Enbridge and Toronto Hydro piloted a collaborative Adaptive Thermostat offering. Toronto Hydro split the incentive cost for Toronto Residents that participated in the Smart Thermostat offering.	$0
2018	IESO	Deal Days - Enbridge's work on the Residential Working Group included production of a report on the viability of prescriptive gas saving measures available in retailers. The study evaluated the feasibility for inclusion of new electric and gas measures into the existing IESO residential instant savings program ("Deal Days").	*$40,000

*Funded through CIF budget

Commercial & Industrial

Year(s)	Partner	Details	Annual Program Spend
2016	Powerstream	Co-marketed gas and electric offers for Demand Control Kitchen Ventilation	$6,000
2016	EnerSource	Co-funded joint gas/electric energy audits for small businesses	$20,610
2017	IESO / Enerquality	Energy Star Multi-Family Building Pilot Program – designed and piloted a third-party energy efficiency certification program for mid-high rise residential buildings.	$100,000
2017	Alectra Utilities	Joint delivery of Direct Install - Pedestrian Air Curtains Co-delivery was coordinated through one delivery agent, including customer outreach and recruitment, identifying and installing measures.	$377,027
2019 to present	IESO	Joint delivery of Direct Install – Demand Control Kitchen Ventilation (DCKV): Enbridge contracted multiple delivery agents for an installation program targeting DCKV systems and small commercial kitchens. Enbridge engaged IESO to collaborate with their Save-on-Energy Retrofit program of the same measure, which was introduced in 2019. Collaboration is through joint program delivery and marketing	2020: $410,000 2021: $ 538,500
2021 to present	IESO	Prescriptive Midstream: Enbridge contracted a delivery agent for a new Midstream offer targeting food service equipment supply chain actors in 2019. In 2021, IESO joined the offer with electric food service measures from their Save-on-Energy Retrofit program. Collaboration is joint delivery through one vendor	2021: $1,848,000
2020-2021	IESO & Climate Challenge Network	Sustainable Schools (SUS) Benchmarking Initiative – EGI & IESO partnered with Sustainable Schools to use a benchmarking targeted approach to identify and work with high saving potential schools.	$80,000
2020-2021	IESO	Joint Energy Manager Collaboration – Collaborating with IESO to co-fund existing IESO Energy Managers in the Institutional Sector and provide performance incentives for achieving gas savings targets.	$150,000
2018-2021	IESO	Joint Incentives for Energy Management Training Courses Enbridge Gas and the IESO co-funded training incentives that cover up to 75% of training costs for C&I customers.	$65,000

2023-2027

Annual Program Spend is TBD for the below offers in 2023-2027 because although we are in collaborative efforts to discuss these initiatives, they have not been finalized and therefore the budgets have not yet been determined.

Low Income

Year(s)	Partner	Details	Annual Program Spend
2022-2024	IESO	Coordinate delivery of EGI's Home Winterproofing Program with IESO's Energy Affordability Program (EAP)	TBD

Residential

Year(s)	Partner	Details	Annual Program Spend
2021 - present	IESO	(See Exhibit E, Tab 1, Schedule 2 page 19 and Exhibit E Tab 4, Schedule 4 page 4) Coordinate Smart Home (Thermostat) with IESO's EAP Tier 2 customers and provide an enhanced incentive to qualified moderate income customers	TBD

Commercial & Industrial

Year(s)	Partner	Details	Annual Program Spend
2023-	IESO	*Tentative – unconfirmed* Joint Incentives for Energy Management Training Courses Continuation of existing collaboration	TBD
2023 – *(tentative)*	IESO	*Tentative – unconfirmed* Joint Delivery of Prescriptive Midstream: Integrated Midstream offer with both gas and electric foodservice measures as well as other possible measures. In 2022, Enbridge and IESO intend to implement a joint procurement process for a delivery vendor to be in place for 2023.	TBD
2023-	IESO	*Tentative – unconfirmed* Joint Delivery of Direct Install – Demand Control Kitchen Ventilation (DCKV): Continuation of existing collaboration	TBD
2023-	IESO	*Tentative – unconfirmed* Coordination of IESO's Energy Performance Program with Enbridge's proposed Energy Performance Program	TBD
2023-	IESO	*Tentative – unconfirmed* Coordination of IESO's proposed Strategic Energy Management Program with Enbridge's proposed Industrial Program	TBD

b) IESO coordination has been enhanced since utility amalgamation and the centralization of CDM delivery. Since then, Enbridge Gas has established regular communications with its counterparts at IESO and increased the number of collaborative initiatives. It expects this to continue in the next framework. These discussions have resulted in the identification and execution of several collaboration opportunities summarized in the response to part a.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 1

Reference:

EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87

Preamble:

In the previous DSM plan decision, the OEB directed Enbridge to provide transparent calculations of avoided distribution costs:

> "Avoided distribution costs were examined extensively during this proceeding. Several parties provided recommendations on areas of improvements in calculating the avoided costs that result from DSM programs. Considerable time was spent reviewing and updating a summary table proposed by one of the expert witnesses. The OEB expects the utilities to provide a transparent calculation of the avoided costs and a list of the input assumptions that go into this calculation. Given the different geography, system and customers between Union and Enbridge, it is expected that the avoided cost calculation will be specific to each utility; however, the methodology, approach and presentation should be the same for both gas utilities." [1]

Question(s):

(a) Please provide a transparent calculation of the avoided distribution costs and a list of the input assumptions that go into this calculation.

(b) Please compare Enbridge's best estimates of avoided distribution costs with the summary table described in the above passage.

(c) Please file copies of all the updates of the summary table referred to above to ensure that they can be referenced in this proceeding in an organized way.

[1] EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87.

Response

a) Please see the response to Exhibit I.5.EGI.ED.16a Attachment 1 and 2 at the Avoided DS Infrastructure worksheet for each attachment, as well as in Attachment 3 (Navigant Avoided Distribution Costs, prepared for Enbridge Gas Distribution) and Attachment 4 (Assessment of Union Gas Avoided Local Distribution System Infrastructure Costs, prepared for Union Gas) which include the approach and figures related to Enbridge Gas's avoided distribution costs (or avoided downstream infrastructure costs).

b - c) Please see the response to Exhibit I.1.EGI.ED.3a.

While the summary table referred to is not identified in the questions asked, it is clear that it is not a table that was compiled by or at the request of Enbridge Gas. The Company therefore does not have the ability to speak to its contents. As the author of this table will not be a witness in this proceeding, Enbridge Gas declines to produce the table as the methodologies used to generate the table are both unknown, are likely disputed and would not be open for questioning by the OEB, stakeholders and the Company.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 1

Reference:

EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87

Preamble:

In the previous DSM plan decision, the OEB directed Enbridge to provide sensitivity information on the impacts of increased budgets:

> "The OEB did not find the sensitivity information submitted by the gas utilities to be helpful in determining the impacts of increased budgets on target metrics such as gas savings and participation levels. The sensitivity analysis was too vague to provide the OEB with any assistance in its review of proposed DSM budget levels and options to redirect components of the DSM plans. The OEB expects the gas utilities to provide more details of any future sensitivity analysis related to DSM budgets levels at the program level." [1]

Question:

(a) Please provide the kind of sensitivity analysis requested by the OEB.

Response

a) Please see response to Exhibit I.6.EGI.STAFF.13c.

[1] EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Environmental Defence

Interrogatory

Issue 1

Reference:

EB-2017-0127/128, *Report of the Ontario Energy Board Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors*, November 29, 2018, p. 27

Preamble:

In the most recent DSM mid-term review decision, the OEB encouraged Enbridge to explore the concept of amortizing DSM costs:

> "The OEB agrees that amortizing DSM costs over the lifetime of the energy efficiency programs should be explored during the post-2020 DSM framework development."[1]

Question(s):

(a) Please describe all the work that Enbridge has completed to explore amortizing DSM costs.

(b) Please provide a copy of all memos or studies that Enbridge has prepared in exploring the idea of amortizing DSM costs.

Response

a - b) Please see response to Exhibit I.7.EGI.STAFF.16.

[1] EB-2017-0127/128, *Report of the Ontario Energy Board Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors*, November 29, 2018, p. 27

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental-Housing Providers of Ontario (FRPO)

Interrogatory

Issue 1

Reference:

Exhibit D, Tab 1, Schedule 1, page 5 And page 9 Table 2 footnote 1.

Preamble:

EGI evidence states: *"Enbridge Gas believes it is appropriate and prudent to assess the program portfolio in certain specific areas towards the end of the first two-years of the plan to ensure the plan continues to be aligned with the market and evolving policy in Ontario. A limited mid-point assessment will provide an opportunity to determine if any additional program offerings merit introduction, or if changing market factors/government policy necessitate some re-consideration in program design or delivery."*

And

"The Building Beyond Code and Low Carbon Transition budgets to be reassessed at the mid-point assessment"

We would like to understand better the rationale for the timing of this proposed review.

Question(s):

What is the likelihood that EGI will have year 1 (2023) audited results available?

a) Please provide the type of information that would be available on the results from the Building Beyond Code and Low Carbon Transition programs.

Response

a) For clarity, in its original Application filed on May 3, 2021, Enbridge Gas proposed a six-year DSM term with a mid-point assessment at the three-year mark, at the end of 2024. The OEB's August 26, 2021 Decision on 2022 DSM activities however required that the revised "multi-year DSM term from 2023 through the end of 2027

will be subject to a full review in this proceeding."[1] Enbridge Gas was therefore required to update its evidence to incorporate the mid-point assessment into a five-year, 2023-2027 term. The end of 2024 aligns with rebasing and the term for the current 2021-2024 CDM Framework and therefore was held constant.

While it is true that Enbridge Gas will likely have one year of reported results under the new Proposed Framework relating to the Low Carbon and Building Beyond Code programs directly, in advance of the mid-point assessment, the Company continues to gain insights and learnings that will inform proposals and decisions to be made three years from now at the 2024 mid-point assessment. For example, a residential hybrid heating pilot currently in market will provide data and lessons learned to inform mid-point assessment strategies as well as monitoring and evaluation of how the heat pump market will have evolved over a full three-year time period.

Commercially, Enbridge Gas will continue to leverage its Energy Leaders initiative to capture suitable heat pump projects in an effort to gain momentum prior to 2023, identifying small-scale opportunities to develop case studies and increasing familiarity and acceptance with customers and design engineers.

Prior to mid-2024, Enbridge Gas will have had the time to collect important market data to track leading indicators including - addressing accessibility, diversity of supply base, contractor network reach, and trends in market pricing. Customer surveys in late 2023/early 2024 would inform progress on market awareness of these technologies. In addition to the specific metrics and results identified for the Low Carbon Transition Program, this additional data will help inform proposals for appropriate programming post-2024.

As it relates to Building Beyond Code, Enbridge Gas continues to operate similar types of offerings through the current Savings by Design initiative, engaging with builders to propel consistently higher than code adoption in new construction. Enbridge Gas believes the current programs and revised Building Beyond Code efforts will collectively provide significant learnings as we monitor the evolution of the new construction DSM efforts through the lens of local and regional step code adoptions over the next three years leading to the mid-point assessment in 2024.

As referenced in Exhibit E, Tab 2, Schedule 2, pages 1 to 2, Enbridge Gas understands that a code change associated with the adoption of the NBC/NECB step code into the Ontario Building Code is anticipated to occur around the time of the proposed mid-point assessment. This change in code would require revisiting the Building Beyond Code offerings to ensure objectives and targets continue to reflect market needs and potential.

[1] EB-2021-0002, OEB Decision and Order Related to 2022 Natural Gas Demand Side Management Activities (August 26, 2021), p. 4.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental-Housing Providers of Ontario (FRPO)

Interrogatory

Issue 1

Reference:

Exhibit D, Tab 1, Schedule 1, page 5 And page 9 Table 2 footnote 1.

Preamble:

EGI evidence states: *"Enbridge Gas believes it is appropriate and prudent to assess the program portfolio in certain specific areas towards the end of the first two-years of the plan to ensure the plan continues to be aligned with the market and evolving policy in Ontario. A limited mid-point assessment will provide an opportunity to determine if any additional program offerings merit introduction, or if changing market factors/government policy necessitate some re-consideration in program design or delivery."*

And

"The Building Beyond Code and Low Carbon Transition budgets to be reassessed at the mid-point assessment"

We would like to understand better the rationale for the timing of this proposed review.

Question(s):

Coupled with the expectation of the status of year 1, it is clear that year 2 results would not be available even in unaudited fashion. Please comment on the practical efficacy of an early year three review of the first two years of the framework.

Response

Please see response to Exhibit I.1.EGI.FRPO.1.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Issue 1

Question(s):

Please provide a list of all recommendations and requirements applicable to the 2022-2027 DSM Plan and Framework resulting from the following:

- OEB DSM Mid-term Report
- OEB Directives
- OEB Decisions (inclusive of DSM, Rates, Generic proceedings, Facility applications, etc.)

Response:

Enbridge Gas believes that the pre-filed evidence already extensively responds to this interrogatory and that it would be both unnecessarily time consuming and wasteful to repeat the evidence here.

As noted in evidence, the proposed DSM Frameworks and DSM Plan took direction from the OEB Letter on December 1, 2020. In the letter it stated:

> Enbridge Gas's DSM plan application should be informed by the results of the 2015-2020 DSM plans, the OEB's Mid-Term Review Report, the 2019 Achievable Potential Study, information received through the post-2020 DSM consultation to date, and the government's policies and commitments in the Environment Plan as they continue to evolve, including as expressed in the November 27, 2020 letter from the Associate Minister of Energy and the Minister of the Environment, Conservation and Parks to the OEB regarding the Ontario government's current policy objectives related to DSM.[1]

The OEB Letter also stated that "This letter also provides Enbridge Gas with initial guidance to assist it in developing its application, **although the proposals made by Enbridge Gas will ultimately be at the discretion of the company** *[emphasis added]*."[2] The Company has therefore taken all the above into consideration for the proposed Framework and DSM Plan in order to put forward a Plan that meets what Enbridge Gas believes meets the objectives of DSM.

[1] EB-2019-0003, OEB Letter Post-2020 Natural Gas Demand Side Management Framework (December 1, 2020), p. 2.
[2] Ibid, p. 1.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Issue 1

Question(s):

a) Please provide a copy of the OEB Directive, directing the OEB to pursue all cost-effective DSM.

b) Please confirm that the OEB Directive to pursue all cost-effective DSM is still in effect or if it has been rescinded, please provide a copy of the document rescinding that Directive.

Response:

a) Enbridge Gas presumes the directive being referred to is the directive from the Minister of Energy to the OEB dated March 26, 2014 ("the 2014 Directive"). Please see Attachment 1 to this interrogatory response.

b) Not confirmed. With regard to rate-regulated natural gas utilities, the 2014 Directive called for the establishment of a DSM Framework spanning six years commencing January 1, 2015. Therefore, as of December 31, 2020 the directed DSM Framework has expired.

In a letter dated, May 21, 2019, the OEB initiated a Post-2020 DSM Framework consultation acknowledging the expiration of the 2015-2020 DSM Framework and the next steps as follows:

> The 2015-2020 DSM Framework will expire on December 31, 2020. The Government of Ontario has confirmed, in its November 2018 Environmental Plan, a commitment to cost-effective conservation of natural gas. It is therefore opportune to initiate a consultation to consider the next generation DSM framework, with a view to ensuring that the OEB's approach remains current, responsive to energy efficiency and conservation market developments and consistent with broader government policy.[1]

On November 27, 2020, the Associate Minister of Energy and the Minister of the Environment, Conservation and Parks issued a letter to the OEB that provided

[1] EB-2019-0003, OEB Letter Post-2020 Natural Gas Demand Side Management Framework (May 21, 2019), pp. 1-2.

updated details related to the government's expectations for natural gas DSM programs as follows:

> The Environment Plan also acknowledges the important role of natural gas conservation programs in achieving our provincial GHG emissions reduction target. To that end, the plan includes an estimate of the potential for actions related to natural gas conservation, with ratepayer-funded natural gas DSM being one component of this. We are therefore writing to clarity that this estimate is not intended to be a prescriptive target that the OEB would be required to facilitate through ratepayer-funded natural gas DSM programs.[2]

[2] MC-994-2020-1084, Ministry of Energy, Northern Development and Mines, Office of the Associate Minister of Energy (November 27, 2020), p. 1.

Ontario
Executive Council
Conseil exécutif

Order in Council
Décret

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and concurrence of the Executive Council, orders that:

Sur la recommandation de la personne soussignée, le lieutenant-gouverneur, sur l'avis et avec le consentement du Conseil exécutif, décrète ce qui suit :

WHEREAS the government adopted a policy of putting conservation first in its 2013 Long-Term Energy Plan, *Achieving Balance.*

AND WHEREAS it is desirable to achieve reductions in electricity consumption and natural gas consumption to assist consumers in managing their energy bills, mitigating upward pressure on energy rates and reducing air pollutants, including greenhouse gas emissions, and to establish an updated electricity conservation policy framework ("Conservation First Framework") and a natural gas conservation policy framework.

AND WHEREAS the Minister of Energy intends to issue a direction to the Ontario Power Authority to require that it undertake activities to support the Conservation First Framework, including the funding of electricity distributor conservation and demand management programs.

AND WHEREAS the Minister of Energy may, with the approval of the Lieutenant Governor in Council, issue directives under section 27.1 of the *Ontario Energy Board Act, 1998* in order to direct the Board to take steps to promote energy conservation, energy efficiency, load management or the use of cleaner energy sources, including alternative and renewable energy sources.

AND WHEREAS the Minister of Energy may, with the approval of the Lieutenant Governor in Council, issue directives under section 27.2 of the *Ontario Energy Board Act, 1998* in order to direct the Board to take steps to establish conservation and demand management targets to be met by electricity distributors and other licensees.

NOW THEREFORE the Directive attached hereto is approved and shall be and is effective as of the date hereof.

Recommended _____
Minister of Energy

Concurred _____
Chair of Cabinet

Approved and Ordered MAR 2 6 2014
Date

_____
Lieutenant Governor

O.C./Décret 467/2014

MINISTER'S DIRECTIVE

TO: THE ONTARIO ENERGY BOARD

I, Bob Chiarelli, Minister of Energy, hereby direct the Ontario Energy Board (the "Board") pursuant to my authority under sections 27.1 and 27.2 of the *Ontario Energy Board Act, 1998* (the "Act") to take the following steps to promote electricity conservation and demand management ("CDM") and natural gas demand side management ("DSM"):

1. The Board shall, in accordance with the requirements of this Directive and without holding a hearing, amend the licence of each licensed electricity distributor ("Distributor") to establish the following as the CDM target to be met by the Distributor:

    i. add a condition that specifies that the Distributor shall, between January 1, 2015 and December 31, 2020, make CDM programs available to customers in its licensed service area and shall, as far as is appropriate and reasonable having regard to the composition of the Distributor's customer base, do so in relation to each customer segment in its service area ("CDM Requirement");

    ii. add a condition that specifies that such CDM programs shall be designed to achieve reductions in electricity consumption;

    iii. add a condition that specifies that the Distributor shall meet its CDM Requirement by:

        a) making Province-Wide Distributor CDM Programs, funded by the Ontario Power Authority (the "OPA"), available to customers in its licensed service area;

        b) making Local Distributor CDM Programs, funded by the OPA, available to customers in its licensed service area; or

        c) a combination of (a) and (b); and

    iv. add a condition that specifies the Distributor shall, as far as possible having regard to any confidentiality or privacy constraints, make the details and results of Local Distributor CDM Programs available to other Distributors upon request.

2. Despite paragraph 1, the Board shall not amend the licence of any Distributor that meets the conditions set out below:

    i. with the exception of embedded distributors, the Distributor is not connected to the Independent Electricity System Operator ("IESO") – controlled grid; or

    ii. the Distributor's rates are not regulated by the Board.

3. The Board shall establish CDM Requirement guidelines. In establishing such guidelines, the Board shall have regard to the following objectives of the government in addition to such other factors as the Board considers appropriate:

i. that the Board shall annually review and publish the verified results of each Distributor's Province-Wide Distributor CDM Programs and Local Distributor CDM Programs and report on the progress of Distributors in meeting their CDM Requirement;

ii. that CDM shall be considered to be inclusive of activities aimed at reducing electricity consumption and reducing the draw from the electricity grid, such as geothermal heating and cooling, solar heating and small scale (i.e., <10MW) behind the meter customer generation. However, CDM should be considered to exclude those activities and programs related to a Distributor's investment in new infrastructure or replacement of existing infrastructure, any measures a Distributor uses to maximize the efficiency of its new or existing infrastructure, activities promoted through a different program or initiative undertaken by the Government of Ontario or the OPA, such as the OPA Feed-in Tariff (FIT) Program and micro-FIT Program and activities related to the price of electricity or general economic activity; and

iii. that lost revenues that result from Province-Wide Distributor CDM Programs or Local Distributor CDM Programs should not act as a disincentive to Distributors in meeting their CDM Requirement.

4. The Board shall establish a DSM policy framework ("DSM Framework") for natural gas distributors whose rates are regulated by the Board ("Gas Distributors"). In establishing the DSM Framework, the Board shall have regard to the following objectives of the government in addition to such other factors as the Board considers appropriate:

i. that the DSM Framework shall span a period of six years, commencing on January 1, 2015, and shall include a mid-term review to align with the mid-term review of the Conservation First Framework;

ii. that the DSM Framework shall enable the achievement of all cost-effective DSM and more closely align DSM efforts with CDM efforts, as far as is appropriate and reasonable having regard to the respective characteristics of the natural gas and electricity sectors;

iii. that Gas Distributors shall, where appropriate, coordinate and integrate DSM programs with Province-Wide Distributor CDM Programs and Local Distributor CDM Programs to achieve efficiencies and convenient integrated programs for electricity and natural gas customers;

iv. that Gas Distributors shall, where appropriate, coordinate and integrate low-income DSM Programs with low-income Province-Wide Distributor CDM Programs or Local Distributor CDM Programs;

v. that the Board shall annually review and publish the verified or audited results of each Gas Distributor's DSM programs;

vi. that an achievable potential study for natural gas efficiency in Ontario should be conducted every three-years, with the first study completed by June 1 2016, to inform natural gas efficiency planning and programs. The achievable potential

study should, as far as is appropriate and reasonable having regard to the respective characteristics of the natural gas and electricity sectors, be coordinated with the OPA with regard to the OPA's requirement to conduct an electricity efficiency achievable potential study every three-years;

vii. that DSM shall be considered to be inclusive of activities aimed at reducing natural gas consumption, including financial incentive programs and education programs; and

viii. that lost revenues resulting from DSM programs should not act as a disincentive to Gas Distributors in undertaking DSM activities.

5. By January 1, 2015, the Board shall have considered and taken such steps as considered appropriate by the Board towards implementing the government's policy of putting conservation first in Distributor and Gas Distributor infrastructure planning processes at the regional and local levels, where cost-effective and consistent with maintaining appropriate levels of reliability.

6. Nothing in this Directive shall be construed as directing the manner in which the Board determines, under the *Ontario Energy Board Act, 1998*, rates for Gas Distributors or for Distributors, including in relation to applications regarding regional or local electricity demand response initiatives or infrastructure deferral investments.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Issue 1

Question(s):

Please provide a table showing annual data by year related to the 2015-2020 year DSM plans including:

- DSM Budget
- Amount Spend (forecast or actuals if available)
- DSMVA available
- DSMVA used
- Savings in m3
- % of target achieved (actuals or expected)
- Shareholder Incentive (actuals or expected)
- Budget for program development
- Spending on program development (actuals or expected)
- Audit and evaluation budget
- Audit and evaluation costs (actuals or expected)

Response:

Enbridge Gas has attempted to combine the Enbridge Gas Rate zone and Union Rate zone but it should be noted results and spend were often tracked differently. Please make note of the various footnotes in the various responses.

For budget, please see response to Exhibit I.6.EGI.CCC.7.

For spend, please see response to Exhibit I.6.EGI.STAFF.13f.

For DSMVA available, please see Table 1 below:

Table 1

Annual DSMVA Available – All Rate Zones

Year	15% DSMVA
2015 (OEB-approved)	$10,756,517
2016 (OEB-approved)	$16,977,374
2017 (OEB-approved)	$18,225,588
2018 (OEB-approved)	$19,623,959
2019 (OEB-approved)	$19,453,582
2020 (OEB-approved)	$19,816,037

For DSMVA used, please see Table 2 below:

Table 2

Annual DSMVA Used – All Rate Zones

Year	Utilization of DSMVA Overspend
2015	$0
2016	$0
2017	$6,011,037
2018	$5,850,616
2019	$8,757,200
2020 (Draft Audit)	$0

For savings, please see response to Exhibit I.6.EGI.GEC.6

For % of target achieved, please see response to Exhibit I.5.EGI.FRPO.4

For shareholder incentive, please see response to Exhibit I.8.EGI.CCC.17.

For total program budget, please Exhibit I.6.EGI.ED.20a. Note that “program development” specifically was not an OEB-approved budget category.

For total program spend refer to Exhibit I.6.EGI.STAFF.13f. Note that Enbridge Gas does not track or report “program development” costs as a specific category and as such any development costs are included within other program spend categories.

For evaluation budget, please see Table 3 below:

Table 3

Evaluation Budget – All Rate Zones

Year	**Budget**
2015 (OEB-approved)[1]	$1,129,000
2016 (OEB-approved)	$3,892,948
2017 (OEB-approved)	$4,245,835
2018 (OEB-approved)	$4,408,768
2019 (OEB-approved)	$4,464,548
2020 (OEB-approved)	$4,520,056

For evaluation spend, please see response to Exhibit I.6.EGI.STAFF.13f.

[1] EGD rate zone's 2015 evaluation budget was included within a larger overhead budget amount, and could not be separated for evaluation specifically. Therefore only Union rate zones' 2015 evaluation budget amount is shown.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Issue 1

Question(s):

Enbridge references throughout its updated 2023-2027 evidence the DSM letter it received from the OEB December 1, 2020. Now that the OEB has issued a Decision related to the 2022 Plan and provided new direction for a more robust 2023-2027 DSM assessment, please explain why Enbridge believe that the old DSM letter is still valid and over-rides the more current direction from the OEB.

Response:

Enbridge Gas does not concur that the Decision & Order provided by the OEB on August 26, 2021 which was issued specifically in respect of the 2022 program year, in any way provides new direction that over-rides the direction provided by the OEB for a multi-year DSM plan as outlined in its DSM Letter on December 1, 2020.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Issue 1

Question(s):

a) Please provide details on how Enbridge has included DSM analysis and options into infrastructure project assessments since the OEB EB-2020-0192 Decision.

b) Has Enbridge included detailed DSM option analysis and alternatives for all pipeline project filed with the OEB (e.g. Leave to Construct and ICM Applications) since the EB-2020-0192 Decision. If not, why not. If yes, please provide a list and references to where the DSM analysis was provided.

Response:

a) Following the OEB's EB-2020-0192 Decision, Enbridge Gas continues to integrate IRP into its planning and analysis processes. As noted in the IRP proceeding, Enbridge Gas will identify needs on its system and then evaluate alternatives based on the criteria and methodologies approved by the OEB in its EB-2020-0192 Decision. One of the alternatives Enbridge Gas evaluates is targeted DSM. Details regarding the integration of IRP into Enbridge Gas's planning process and the infrastructure alternative analyses will be provided in the IRP Annual Report per the OEB's directive in EB-2020-0192.

b) No, Enbridge Gas has not filed LTC applications or requests for ICM treatment containing detailed DSM option analysis since January 2021. The reason being that the LTC and ICM applications filed since this time have been for projects designed to resolve short term system needs/constraints (<3 years) and for which project development was completed years in advance.

   Specifically, Enbridge Gas has filed two LTC applications since January 2021, the St. Laurent North Ottawa North Replacement Project (EB-2020-0293) and the Greenstone Pipeline Project (EB-2021-0205). Further, as part of its 2022 Rates (Phase 2) application (EB-2021-0148) the Company sought ICM treatment for the costs associated with three facility projects that did not require LTC approval. In all of the aforementioned instances the projects were under development prior to both the OEB's Decision on the London Lines Replacement Project and its issuance of

the IRP Framework for Enbridge Gas. As noted on page 20 in the OEB's London Lines Replacement Project Decision (EB-2020-0192):

> However, despite the OEB approval of the application for leave to construct this Project, the OEB agrees with Environmental Defence that Enbridge Gas has an obligation to conduct a more rigorous Integrated Resource Planning assessment at the preliminary stage of projects development in future cases.[1]

Consistent with the OEB's IRP Framework for Enbridge Gas, the Company is currently identifying system constraints/needs sufficiently in the future to support the IRP assessment referred to by Pollution Probe.

Finally, Enbridge Gas notes that the proceedings referenced by Pollution Probe are actively being reviewed by the OEB and therefore exceed the scope of this proceeding.

[1] EB-2020-0192, OEB Decision and Order - EGI London Line Replacement Project (January 28, 2021), p. 20.

ENBRIDGE GAS INC.

Answer to Interrogatory from
School Energy Coalition (SEC)

Interrogatory

Issue 1

Reference:

Ex. B/1/1, p. 8

Question(s):

Please provide details of the Applicant's "longer term natural gas savings reduction target" including, without limiting the generality of the foregoing:

a) The Applicant's current twenty year forecast of natural gas throughput, by year and by rate class, before the impact of any DSM programs,
b) The economic growth, carbon price, and other key assumptions used in that forecast,
c) The impact of DSM programs, by year and by rate class, on total natural gas throughout, and
d) The net twenty year forecast of natural gas throughput, by year and by rate class, after the impact of any DSM programs.

Please provide all reports, memoranda, presentations or other documents in the possession of the Applicant relating to its current or immediately preceding "longer term natural gas savings reduction targets".

Response:

a) The Company does not have a twenty-year forecast of natural gas volumes. Below, please find the current forecast for 2022-2031 by year, and rate class, before the forecasted impact of DSM program activity from 2022-2031.

Enbridge Gas Inc.
EGI Volumes by Rate Classes (10^3 m^3)
Before DSM

General Service/Rate Zone	Rate Class	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
EGD	Rate 1	5,109,043	5,145,845	5,190,599	5,233,660	5,278,180	5,321,402	5,362,525	5,401,399	5,438,456	5,473,321
EGD	Rate 6	4,734,934	4,802,659	4,848,973	4,899,333	4,954,533	5,009,561	5,063,948	5,117,790	5,171,370	5,224,904
Union South	M1	3,139,151	3,159,248	3,194,936	3,199,477	3,218,945	3,237,490	3,270,502	3,271,656	3,287,502	3,302,501
Union South	M2	1,293,515	1,300,581	1,313,513	1,315,442	1,322,573	1,329,335	1,341,151	1,341,769	1,347,483	1,352,840
Union North	R01	1,026,564	1,032,064	1,043,883	1,045,373	1,052,202	1,058,603	1,069,783	1,070,534	1,076,991	1,078,939
Union North	R10	368,185	369,127	371,707	371,192	372,210	373,104	375,441	374,499	376,662	373,871
Total		15,671,392	15,809,526	15,963,611	16,064,478	16,198,643	16,329,495	16,483,351	16,577,647	16,698,464	16,806,377

Contract Market / Rate Zone	Rate Class	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
EGD	Rate 100	31,607	31,607	31,607	31,607	31,607	31,607	31,607	31,607	31,607	31,607
EGD	Rate 110	1,089,746	1,147,246	1,147,246	1,147,246	1,147,246	1,147,246	1,147,246	1,147,246	1,147,246	1,147,246
EGD	Rate 115	365,312	375,312	375,312	375,312	375,312	375,312	375,312	375,312	375,312	375,312
EGD	Rate 125	558,826	558,826	558,826	558,826	558,826	558,826	558,826	558,826	558,826	558,826
EGD	Rate 135	55,937	59,362	59,362	59,362	59,362	59,362	59,362	59,362	59,362	59,362
EGD	Rate 145	17,614	25,939	25,939	25,939	25,939	25,939	25,939	25,939	25,939	25,939
EGD	Rate 170	245,795	253,710	253,710	253,710	253,710	253,710	253,710	253,710	253,710	253,710
EGD	Rate 200	188,317	188,317	188,317	188,317	188,317	188,317	188,317	188,317	188,317	188,317
EGD	Rate 300	123	123	123	123	123	123	123	123	123	123
EGD	Rate 315	-	-	-	-	-	-	-	-	-	-
Union North	Rate_20	795,311	802,954	803,282	803,282	803,282	816,970	816,970	816,970	830,657	830,657
Union North	Rate_25	91,136	91,137	89,182	89,183	89,184	89,185	89,186	89,187	89,188	89,189
Union North	Rate_100	1,030,213	1,097,713	1,112,841	1,112,841	1,112,841	1,112,841	1,112,841	1,112,841	1,112,841	1,112,841
Union South	Rate_M4	593,926	629,947	642,678	655,428	668,178	680,928	693,678	706,428	719,178	731,928
Union South	Rate_M5	62,606	62,606	62,606	62,606	62,606	62,606	62,606	62,606	62,606	62,606
Union South	Rate_M7	685,612	721,860	756,922	791,985	827,047	862,110	897,172	932,235	967,297	1,002,360
Union South	Rate_M9	88,845	88,845	88,845	88,845	88,845	88,845	88,845	88,845	88,845	88,845
Union South	Rate_M10	360	360	360	360	360	360	360	360	360	360
Union South	Rate_T1	415,616	422,616	422,616	422,616	422,616	422,616	422,616	422,616	422,616	422,616
Union South	Rate_T2	4,230,819	4,244,414	4,260,351	4,276,289	4,369,058	4,384,996	4,477,765	4,493,703	4,586,472	4,602,410
Union South	Rate_T3	264,209	264,209	264,209	264,209	264,209	264,209	264,209	264,209	264,209	264,209
Total		10,811,930	11,067,102	11,144,334	11,208,085	11,348,668	11,426,107	11,566,690	11,630,441	11,784,711	11,848,462
Total EGI Volumes (Before DSM)		26,483,322	26,876,628	27,107,945	27,272,563	27,547,311	27,755,602	28,050,041	28,208,087	28,483,175	28,654,839

b) The economic growth, carbon price, and other key assumptions used in that forecast are attached as Attachment 1.

c) Below, please find the forecasted impact of DSM program activity from 2022-2031[1], by year and by rate class, used in Enbridge Gas's forecast of natural gas throughput

[1] These values are based on historical DSM savings by rate class and do not correspond with the forecasted DSM savings underpinning this application. These values were inputs into Enbridge Gas's 2022-2031 Long Range Planning process, which was completed prior to finalization of this application.

Enbridge Gas Inc.
EGI DSM Volumes by Rate Classes (10^3 m^3)

General Service/Rate Zone	Rate Class	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
EGD	Rate 1	4,771	16,515	28,258	40,002	51,746	63,489	75,233	86,977	98,721	110,464
EGD	Rate 6	10,755	37,230	63,705	90,180	116,654	143,129	169,604	196,079	222,553	249,028
Union South	M1	4,380	15,163	25,945	36,728	47,510	58,292	69,075	79,857	90,640	101,422
Union South	M2	2,658	9,202	15,746	22,289	28,833	35,376	41,920	48,463	55,007	61,551
Union North	R01	834	2,887	4,940	6,993	9,045	11,098	13,151	15,204	17,257	19,310
Union North	R10	328	1,136	1,944	2,752	3,561	4,369	5,177	5,985	6,793	7,601
Total		23,727	82,133	140,538	198,943	257,349	315,754	374,160	432,565	490,970	549,376

Contract Market / Rate Zone	Rate Class	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
EGD	Rate 100	369	1,277	2,185	3,093	4,001	4,909	5,817	6,725	7,633	8,541
EGD	Rate 110	1,464	5,066	8,669	12,272	15,874	19,477	23,080	26,682	30,285	33,888
EGD	Rate 115	1,833	6,345	10,857	15,369	19,881	24,394	28,906	33,418	37,930	42,442
EGD	Rate 125	-	-	-	-	-	-	-	-	-	-
EGD	Rate 135	383	1,326	2,269	3,212	4,154	5,097	6,040	6,983	7,926	8,869
EGD	Rate 145	-	-	-	-	-	-	-	-	-	-
EGD	Rate 170	172	596	1,019	1,443	1,867	2,290	2,714	3,137	3,561	3,985
EGD	Rate 200	-	-	-	-	-	-	-	-	-	-
EGD	Rate 300	-	-	-	-	-	-	-	-	-	-
EGD	Rate 315	-	-	-	-	-	-	-	-	-	-
Union North	Rate_20	855	2,958	5,062	7,166	9,269	11,373	13,477	15,580	17,684	19,788
Union North	Rate_25	-	1	2	3	4	5	6	7	8	9
Union North	Rate_100	444	1,536	2,629	3,722	4,814	5,907	6,999	8,092	9,184	10,277
Union South	Rate_M4	5,840	20,215	34,590	48,965	63,340	77,715	92,091	106,466	120,841	135,216
Union South	Rate_M5	290	1,005	1,719	2,433	3,148	3,862	4,577	5,291	6,005	6,720
Union South	Rate_M7	5,430	18,797	32,163	45,529	58,896	72,262	85,629	98,995	112,362	125,728
Union South	Rate_M9	-	-	-	-	-	-	-	-	-	-
Union South	Rate_M10	-	-	-	-	-	-	-	-	-	-
Union South	Rate_T1	289	999	1,710	2,421	3,131	3,842	4,553	5,263	5,974	6,684
Union South	Rate_T2	2,916	10,093	17,271	24,448	31,626	38,803	45,981	53,158	60,336	67,513
Union South	Rate_T3	-	-	-	-	-	-	-	-	-	-
Total		20,284	70,214	120,145	170,075	220,006	269,936	319,867	369,798	419,728	469,659
Total DSM Volumes		44,011	152,347	260,683	369,019	477,355	585,691	694,027	802,362	910,698	1,019,034

d) Below, please find the current forecast for 2022-2031 by year, and rate class, after the forecasted impact of DSM program activity from 2022-2031 (see part c, footnote 1).

Enbridge Gas Inc.
EGI Volumes by Rate Classes (10^3 m^3)
Net forecast-after DSM

General Service/Rate Zone	Rate Class	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
EGD	Rate 1	5,104,272	5,129,331	5,162,340	5,193,658	5,226,434	5,257,913	5,287,292	5,314,422	5,339,735	5,362,857
EGD	Rate 6	4,724,179	4,765,429	4,785,268	4,809,154	4,837,878	4,866,432	4,894,345	4,921,712	4,948,816	4,975,876
Union South	M1	3,134,770	3,144,086	3,168,991	3,162,749	3,171,434	3,179,198	3,201,427	3,191,798	3,196,862	3,201,079
Union South	M2	1,290,856	1,291,379	1,297,768	1,293,153	1,293,741	1,293,958	1,299,232	1,293,306	1,292,476	1,291,289
Union North	R01	1,025,730	1,029,177	1,038,943	1,038,381	1,043,157	1,047,504	1,056,632	1,055,330	1,059,735	1,059,630
Union North	R10	367,857	367,990	369,762	368,440	368,649	368,735	370,264	368,514	369,869	366,270
Total		15,647,665	15,727,393	15,823,073	15,865,534	15,941,294	16,013,741	16,109,191	16,145,082	16,207,494	16,257,001

Contract Market / Rate Zone	Rate Class	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
EGD	Rate 100	31,239	30,331	29,423	28,515	27,607	26,699	25,791	24,883	23,975	23,067
EGD	Rate 110	1,088,282	1,142,179	1,138,577	1,134,974	1,131,371	1,127,769	1,124,166	1,120,563	1,116,961	1,113,358
EGD	Rate 115	363,479	368,967	364,455	359,943	355,431	350,919	346,407	341,895	337,382	332,870
EGD	Rate 125	558,826	558,826	558,826	558,826	558,826	558,826	558,826	558,826	558,826	558,826
EGD	Rate 135	55,553	58,036	57,093	56,150	55,207	54,264	53,321	52,379	51,436	50,493
EGD	Rate 145	17,614	25,939	25,939	25,939	25,939	25,939	25,939	25,939	25,939	25,939
EGD	Rate 170	245,623	253,114	252,691	252,267	251,843	251,420	250,996	250,573	250,149	249,725
EGD	Rate 200	188,317	188,317	188,317	188,317	188,317	188,317	188,317	188,317	188,317	188,317
EGD	Rate 300	123	123	123	123	123	123	123	123	123	123
EGD	Rate 315	-	-	-	-	-	-	-	-	-	-
Union North	Rate_20	794,457	799,996	798,220	796,117	794,013	805,597	803,493	801,390	812,973	810,870
Union North	Rate_25	91,136	91,136	89,180	89,180	89,180	89,180	89,180	89,180	89,180	89,180
Union North	Rate_100	1,029,770	1,096,177	1,110,212	1,109,120	1,108,027	1,106,935	1,105,842	1,104,750	1,103,657	1,102,564
Union South	Rate_M4	588,086	609,732	608,088	606,463	604,838	603,212	601,587	599,962	598,337	596,712
Union South	Rate_M5	62,316	61,601	60,887	60,172	59,458	58,744	58,029	57,315	56,601	55,886
Union South	Rate_M7	680,182	703,063	724,759	746,455	768,151	789,848	811,544	833,240	854,936	876,632
Union South	Rate_M9	88,845	88,845	88,845	88,845	88,845	88,845	88,845	88,845	88,845	88,845
Union South	Rate_M10	360	360	360	360	360	360	360	360	360	360
Union South	Rate_T1	415,327	421,617	420,906	420,195	419,485	418,774	418,063	417,353	416,642	415,931
Union South	Rate_T2	4,227,903	4,234,321	4,243,081	4,251,841	4,337,432	4,346,193	4,431,784	4,440,544	4,526,136	4,534,896
Union South	Rate_T3	264,209	264,209	264,209	264,209	264,209	264,209	264,209	264,209	264,209	264,209
Total		10,791,646	10,996,888	11,024,189	11,038,010	11,128,662	11,156,170	11,246,823	11,260,643	11,364,983	11,378,804
Total EGI Volumes (after DSM)		26,439,311	26,724,281	26,847,262	26,903,544	27,069,956	27,169,911	27,356,014	27,405,725	27,572,477	27,635,805

Table: Key Economic assumptions used in the Enbridge's Average use per Customer / Volume forecast

	Employment; 15 years and over; Seasonally adjusted (x 1,000); Persons	Unemployment rate (%)	GDP: Gross domestic product at market prices (x 1,000,000); Dollars	Consumer Price Index (CPI), 2005 basket; All-items; 2002=100	Enbridge Gas Natural Gas prices (¢/m³)*						Commodity prices (cents/m³)			Federal Carbon Charges**		Vacancy Rates	
Level	Ontario	Ontario	Ontario	Ontario	Rate 1	Rate 6	Rate M1	Rate M2	Rate 01	Rate 10	Enbridge	Henry Hub	Dawn	($/tCO2e)	(¢/m3)	GTA Commercial	GTA Industrial
2015	6,845	6.8	724,946	127.4	36.50	29.22	32.57	22.49	41.43	27.83	12.72	12.47	13.90			7.75	4.35
2016	6,922	6.6	740,164	129.7	34.36	26.64	28.12	18.75	37.80	23.93	10.13	12.16	12.53			7.75	3.43
2017	7,053	6.1	761,025	131.9	39.17	31.36	35.56	29.62	47.11	33.71	11.18	14.43	14.54			7.20	2.73
2018	7,173	5.7	782,115	135.0	37.46	29.24	32.31	23.55	45.10	31.30	9.76	14.58	14.99			6.48	1.88
2019	7,375	5.6	798,213	137.5	35.98	27.54	32.44	23.09	42.61	29.62	10.62	12.56	11.86	20.00	3.91	5.60	1.38
2020	7,026	9.6	753,889	138.4	39.31	30.49	34.70	24.35	43.30	29.85	8.85	10.48	9.24	30.00	5.87	6.70	1.70
2021	7,337	8.1	796,129	141.5	44.31	35.54	37.92	26.38	46.19	32.00	11.69	13.52	13.52	40.00	7.83	6.70	1.70
2022	7,579	6.3	829,506	144.4	46.73	37.93	39.34	28.95	49.34	35.07	11.99	13.87	13.58	50.00	9.79	6.70	1.70
2023	7,663	6.1	843,921	147.3	47.32	38.49	40.87	30.08	50.91	36.26	12.22	14.14	13.70	51.00	9.99	6.70	1.70
2024	7,747	5.9	860,870	150.2	47.86	39.00	41.67	30.65	51.74	36.87	12.39	14.34	13.99	52.02	10.19	6.70	1.70
2025	7,832	5.7	881,138	153.2	48.41	39.52	42.58	31.25	52.68	37.50	12.57	14.54	14.27	53.06	10.40	6.70	1.70
2026	7,918	5.5	901,884	156.3	48.97	40.05	43.46	31.84	53.58	38.13	12.76	14.76	14.56	54.12	10.61	6.70	1.70
2027	8,006	5.4	923,118	159.4	49.55	40.60	44.34	32.45	54.50	38.77	12.95	14.99	14.86	55.20	10.82	6.70	1.70
2028	8,094	5.3	944,852	162.6	50.14	41.15	45.18	33.05	55.37	39.41	13.15	15.21	15.15	56.31	11.04	6.70	1.70
2029	8,183	5.2	967,098	165.8	50.73	41.72	46.18	33.70	56.38	40.09	13.34	15.44	15.47	57.43	11.26	6.70	1.70
2030	8,273	5.1	989,867	169.2	51.34	42.29	47.11	34.33	57.33	40.76	13.55	15.67	15.77	58.58	11.49	6.70	1.70
2031	8,364	5.1	1,013,173	172.5	51.96	42.88	48.08	34.99	58.31	41.45	13.75	15.91	16.10	59.75	11.72	6.70	1.70

*Burner tip gas prices that excludes Rate Riders and HST

**Greenhouse Gas Pollution Pricing Act, Schedule 2 and 4