

**ENBRIDGE GAS INC.  
DSM MULTI-YEAR PLAN AND FRAMEWORK**

**Written Interrogatories of Enbridge Gas Inc. to OEB Staff  
(Exhibit L.OEB STAFF.2)**

**Issue 1**

1-EGI-1-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page i)

Preamble:

Optimal Energy recommends the full elimination of furnaces and boilers as offered measures in the Residential Program stating that any promotion through the program creates a lost opportunity for electrification.

Question:

- a) Please confirm the primary and secondary objectives of ratepayer funded natural gas DSM as outlined by the OEB in its December 1, 2020 Letter (page 2 and 3).
- b) Please identify any direction provided by the OEB that avoiding lost opportunities for electrification is an objective of the gas utility's ratepayer funded natural gas demand side management in Ontario.

**Issue 3**

3-EGI-2-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2

Preamble:

Jurisdictional Analysis Due Diligence

Question:

As part of its evidence Optimal Energy compares Enbridge Gas's program designs and performance to those from other jurisdictions.

- a) Would Optimal Energy agree that in order for a fair, objective and non-partisan comparison between different jurisdictions, both generally and specifically with respect to savings as a percent of sales, that several factors need to be taken into consideration, including but not limited to:

- weather normalization of sales data
- new building codes and standards,
- cost effectiveness test leveraged to screen in measures, offerings, programs (i.e. MTRC used by Fortis BC)
- relative cost of gas / electricity to consumers
- customer makeup (ie. number of customers by sector, average consumption)
- equipment and measure baselines, for example, looking most recently updated TRMs of some utilities on residential furnace replacement end of life baselines - Ameren, Illinois - 80% AFUE, Centerpoint, Minnesota - 80% AFUE, National Grid, Rhode Island - 85% AFUE.
- approach to and manner of EM&V NTG calculations and the respective inputs that are considered (i.e. free ridership, spill over etc)
- regulatory policies in support of specific programs and goals, (i.e. mandated statewide savings targets)
- maturity and historic impact of DSM programs
- market saturation of specific measures
- jurisdictional industry standard practice

If not, please explain why not in detail.

- b) As it relates to the comparisons made in this report, could Optimal Energy indicate what efforts/adjustments, if any, were made for the above mentioned factors when conducting the analysis and presenting comparisons?
- c) Specifically for Table 6: Summary of Performance Incentives compares a number of Jurisdictions, were any adjustments for any of the above factors made?
- d) Please provide all reference material used, all internal calculations and notes, and any research reviewed and organized by Jurisdiction (State/Utility) which demonstrates the jurisdictional analysis and comparison undertaken.

3-EGI-3-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page ii

Preamble:

Consider adding a behavioral program.

Question:

- a) Is Optimal Energy aware of Enbridge Gas and Union's previous Behavioural Program proposal and the OEB's ultimate decision to not approve these proposals in

the 2015-2020 DSM Plan proceeding and the concerns the OEB expressed in rendering this decision?

3-EGI-4-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page ii

Preamble:

Expand the Energy Performance (Whole Building P4P) program to include all large C&I customers.

Question:

- a) Could Optimal Energy please indicate which leading jurisdictions currently have undertaken this approach?
- b) For those jurisdictions listed please provide, broken out by utility/program administrator the following items; savings achieved in comparison to the respective prescriptive and custom offerings, total costs compared to the respective prescriptive and custom offerings, indicate the cost effectiveness of the offering both from a TRC perspective and from a \$/m<sup>3</sup> perspective in relation to both custom and prescriptive offerings. Please provide all references from where the information was sourced.
- c) Please convert all USD values to CAD using an assumed \$0.80 CAD/USD rate.

3-EGI-5-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, pages iii & 28

Preamble:

On page iii Optimal Energy states, "Ensure that the Small Business Direct Install Program effectively integrates with the electric side, and **focus the gas program on envelope measures, as is done in the residential sector.**" (emphasis added)

On page 28, the report notes, "While in theory, there are **small business direct install measures that do custom measures including those related to envelope and ventilation, in practice there is rarely significant penetration for these measures.**" (emphasis added)

Question:

Please clarify what Optimal Energy is recommending for Enbridge Gas' DSM Plan

3-EGI-6-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 1

Preamble:

Table 1 Reference - We estimated savings as a percent of sales by dividing the target 2023 residential savings by the estimated 2020 residential sector forecast consumption data taken from the OEB's 2019 Achievable Potential Study, Appendix\_x1\_Forecast\_Potential\_Consumption\_20191218, tab 07a.

Question:

Is Optimal Energy Aware that the forecast consumption data that is in the referenced file used, included consumption from the multi-residential sector which has resulted in the savings for the Enbridge Gas DSM residential program being compared against sales volumes that includes more than just Residential sales.

3-EGI-7-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, Page 2 and 3

Preamble:

Table 2: Natural Gas Utility Residential Conservation Program Details

Further, Rhode Island's lower costs are largely driven by very high behavioral savings, while low costs in Illinois and Minnesota are partly driven by thermostats, savings "kits" including low-flow showerheads and faucet aerators, and furnaces/boilers (in Minnesota), which we would not recommend for Enbridge Gas. In Illinois, the costs to achieve are particularly driven by 33,000 smart thermostats rebated in 2020 – the retail products program is about 90% of total residential savings and almost entirely from thermostats (although note that this reflects a year where Covid made home energy visits difficult).

Question:

- a) In the table on page 2 please convert all USD values to CAD using an assumed \$0.80 CAD/USD rate. Please add two columns, one that shows the % of total

budget for each item and one that shows the % of total first year savings for each item.

- b) Please re-cast the table in a) adjusting for the commentary above by removing behavioural programs or other program elements that are not recommended. Lower the thermostat savings in illinois to a recommended level and state the rationale for the appropriate level. Make assumptions and state them as required.

3-EGI-8-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, Page 2-3

Preamble:

Table 2: Natural Gas Utility Residential Conservation Program Details

Further, Rhode Island's lower costs are largely driven by very high behavioral savings, while low costs in Illinois and Minnesota are partly driven by thermostats, savings "kits" including low-flow showerheads and faucet aerators, and furnaces/boilers (in Minnesota), which we would not recommend for Enbridge Gas. In Illinois, the costs to achieve are particularly driven by 33,000 smart thermostats rebated in 2020 – the retail products program is about 90% of total residential savings and almost entirely from thermostats (although note that this reflects a year where Covid made home energy visits difficult).

Question:

- a) In the table on page 2 please convert all USD values to CAD using an assumed \$0.80 CAD/USD rate. Please add two columns, one that shows the % of total budget for each item and one that shows the % of total first year savings for each item.
- b) Please re-cast the table in a) adjusting for the commentary above by removing behavioural programs or other program elements that are not recommended. Lower the thermostat savings in illinois to a recommended level and state the rationale for the appropriate level. Make assumptions and state them as required. "

3-EGI-9-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, Page 6

Preamble:

Massachusetts program has been successful at driving significant participation and deep savings – Eversource in MA saved 48,182 lifetime m3 per participant in its program in 2020, compared to 12,404 m3 for Enbridge Gas.

Question:

Enbridge Gas assumed Optimal Energy was specifically referring to Eversource Gas' Residential Coordinated Delivery Program when making this comparison. Enbridge Gas examined the 2022-2024 Statewide Data Tables - Gas at <https://ma-eeac.org/plans-updates/> to seek to understand the comparison in more detail. Filtering the year to "2020", the reporting period to "Evaluated", and the initiative to "Residential Coordinated Delivery". In order to make the calculation Enbridge Gas used a conversion factor of therms to m3 at a rate of 2.776 m3/therm. Respectively, Eversource Gas (NSTAR), and Eversource Gas (EGMA) had 9,029 and 8,983 participants in their program, with a Net Lifetime Natural Gas Savings of 20,771,614 and 23,268,103 therms which equated to 2,301 and 2,590 lifetime therms per participant. Converted to m3 that would be 6,386 and 7,190 lifetime m3 per customer.

- a) Could Optimal Energy confirm if these values are correct, otherwise, please provide the reference and all calculations used in generating the comparison including the lifetime savings in m3, conversion factors, the estimated useful life and annual first year savings.

3-EGI-10-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 26

Question:

For Table 6: Summary of Performance Incentives by Jurisdiction, please provide the source for the information provided.

Please confirm that this source data is the most up to date information that was available prior to starting the report. If not, please provide the most up to date source of information and provide an updated table using that information.

**Issue 10a**

10a-EGI-11-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 3

Preamble:

While we would not encourage Enbridge Gas to shift the focus away from a whole home approach, the comparison does indicate that Enbridge Gas would likely be able to bring costs down somewhat by increasing the number of thermostats rebated, adding a behavioral program, jointly running the program with the Independent Electricity System Operator.....

Question:

Please confirm if Optimal Energy is aware of the following:

- a) At the current time, IESO does not have funding for Residential energy conservation programs.
- b) Residential Behavioral programming was been disallowed in the OEB decisions for the 2015-2020 with specific concerns expressed for this type of programming

10a-EGI-12-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 11

Preamble:

Perform direct installation of low-cost measures such as aerators, showerheads, and pipe insulation during the initial energy assessment.

Question:

- a) The proposed Whole Home offering would be delivered using NRCan certified Energy Auditors and Service Organizations; who are not permitted to perform direct installations as per their NRCan licenses. Please confirm if this recommendation was based on utilization of the NRcan certified Energy Auditors or if it was suggesting Enbridge Gas add an additional delivery mechanism and cost to the proposed Whole Home offering?



**Issue 10g**

10g-EGI-13-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 32-33

Preamble:

In order for a builder to be eligible, Enbridge Gas requires any new construction building to commit to using natural gas as a fuel source for space and/or water heating. As a first step, the OEB should consider whether this makes sense from a policy perspective, given provincial and national GHG emission reductions goals. New construction is increasingly using heat pumps for space and water heating – Massachusetts program data, for example, indicates that all-electric new construction is the norm in above code construction. Further, there is increasing evidence that all-electric new construction results in lower costs in addition to a significant GHG reduction. A recent study from Rocky Mountain Institute, for example, finds lower initial costs for all-electric homes in most cities examined and lower lifecycle costs for all cities, in addition to GHG savings of between 50% and 93% depending on fuel mix of electricity. In this light, it is unclear if ratepayer funds should be encouraging natural gas in new construction at all. However, if the programs do go forward, Enbridge Gas should consider expanding the comprehensiveness and incentive structure to encourage additional above code savings.

Question:

- a) Please identify where in the existing Ontario Building Code it prohibits the use of natural gas in buildings/housing?
- b) Please identify where in the National Step Code, which outlines code progression to step 4/5 (NZER), it prohibits the use of natural gas in buildings/housing?
- c) Please identify the cities used to generate the findings that led to the conclusion that all-electric new construction houses result in lower initial costs and lower lifecycle costs.
- d) How does the climate associated with these cities compare to that of Ontario?
- e) How does the price of electricity and natural gas compare to that of Ontario?
- f) How does the electric load profile compare to that of Ontario?

- g) The study references a comparison to a standard heat pump, is it assumed that the standard heat pump could fulfill all heating requirements, or is a back-up system required? Can you make the same costing comparison applying cold-climate heat pumps or hybrid heating systems, which would be required to accommodate the Ontario climate.

10g-EGI-14-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 38

Preamble:

Revamp the incentive structure on Energy Star Homes to motivate additional participation, reduce free ridership, and encouraging additional savings beyond the minimum to achieve Energy Star certification.

Question:

Enbridge Gas's Building Beyond Code offering includes financial incentives to assist builders in building to Energy Star levels and evaluating these homes to the Energy Star level.

- a) Please discuss the specific details of what a 'revamped incentive structure' would mean?

Please include details on what incentive levels are required to drive additional participation, the total cost of such a recommendation, what specific actions would reduce free ridership and detail from what level this comparison is being made. Provide all references and assumptions.

10g-EGI-15-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, Page 32

Preamble:

New construction is increasingly using heat pumps for space and water heating

Question:

- a) Could Optimal Energy provide references to the Ontario specific evidence that New Construction in Ontario is increasingly using heat pumps for space and water heating. Include data for both any heat pumps and for non-heat pumps along with % of total market.

**Issue 16**

16-EGI-16-OEB.STAFF.2

Reference:

Exhibit L.OEB STAFF.2, page 14

Preamble:

Use a coordinated, jurisdiction-wide approach. This means not only between electric and gas utilities, but also between any other government programs or nonprofits offering relevant services.

Question:

- a) Enbridge Gas is working with IESO to establish a coordinated, province wide joint delivery model for the EGI Home Winter Proofing program and IESO's Energy Assistance Program in 2022 (see Staff 30). Please confirm if there are other specific programs in addition to these being referred to and provide references.