

# Elson Advocacy

**BY RESS AND EMAIL**

December 17, 2021

Registrar  
Ontario Energy Board  
2300 Yonge Street, 27<sup>th</sup> Floor  
Toronto, ON M4P 1E4

Dear Ms. Long:

**Re: EB-2021-0002 – Enbridge Gas – Multi-Year Demand Side Management Plan  
(2022-2027) Application**

We are counsel to Environmental Defence in the above matter. Please find attached the interrogatories of Environmental Defence related to evidence filed by SUMA, BOMA and OEB Board Staff, which have also been filed by RESS.

Yours truly,



Kent Elson

**EB-2021-0002**  
**Enbridge Gas 2022-2027 DSM Plan**

**Interrogatories of Environmental Defence to Board Staff**

**Questions re OEB Staff.1**

**Issue 1 – Response to OEB directions**

**Interrogatory # 1-ED-1-OEB Staff.1**

Reference: Exhibit L.OEB STAFF.1, p. 17

Preamble: “we... recommend the interest rate set at the utility cost for borrowing money, or the short-term carrying cost of debt.”

Questions:

- (a) In Ontario, what is the current utility cost for borrowing money, or the short-term carrying cost of debt?
- (b) Please confirm that the following document at page 158 describes the Ontario government’s cost of borrowing as being 1.9%: Government of Ontario, *2021 Ontario Economic Outlook and Fiscal Review*, <https://budget.ontario.ca/2021/fallstatement/pdf/2021-fall-statement-en.pdf>.
- (c) Please comment on the concept of delivering gas and electricity efficiency programs through a one-stop-shop government agency that is able to borrow at Ontario government borrowing rates.
- (d) If the current DSM budget were amortized over 10 years, what would the incremental interest charges be as between the utility’s cost of debt and the cost of equivalent debt to the Ontario Government?

**Issue 6 – Savings levels and budgets**

**Interrogatory # 6-ED-2-OEB Staff.1**

Reference: Exhibit L.OEB STAFF.1, p. 14

Preamble:

While this level of funding has achieved significant savings for Ontario, the achievement is still well below the full cost-effective potential. In 2018, for example, the legacy natural gas utility DSM plans together achieved about 108 cubic meters of annual gas savings for a cost of \$128 million. While this is significant, it compares to a maximum

cost-effective achievable potential of 338 cubic meters per year found by a 2019 potential study for Ontario.

Question:

- (a) Please provide the DSM savings levels and budget levels (annual average) necessary to achieve the GHG reductions from gas outlined in the Environment Plan. Please base this on the 2019 potential study. As necessary, please seek clarification from Board Staff involved in the development of the 2019 potential study. Please provide the underlying figures and calculations.

## **Issue 8 – Shareholder Incentives**

### **Interrogatory # 8-ED-3-OEB Staff.1**

Reference: Exhibit L.OEB STAFF.1, p. 42

Preamble:

“In order to eliminate utility incentives to overestimate budget and/or underestimate savings, we recommend considering establishing the overall incentive amount as a percent of net benefits, in advance of the planning process. This way, while higher proposed savings (and/or lower budgets) in the efficiency plan would still make it harder to achieve or exceed the full target incentive, it would also increase the overall pot of money available for earnings. In effect, while the incentive for the utility to propose a plan overestimating costs and underestimating savings may still remain, this would also create a countervailing incentive to decrease planned budget and increase planned savings in order to maximize the total available shareholder incentive. While ultimately approval of plans is up to the OEB in any case, we believe this tension provides a good check on the utilities and encourages them to strive for maximum, but realistically achievable, goals.”

Questions:

- (a) If the current overall incentive amount (i.e. the maximum “pot”) were expressed as a percent of net benefits, what would that be? If there are multiple answers depending on a number of assumptions, please provide those details.
- (b) What amount of incentives does Optimal believe would be reasonable as a percent of net benefits? If possible, please provide a single figure and a reasonable range around that number. Please explain the basis for this.
- (c) Please comment on the concept of establishing the overall incentive amount as a percent of planned program savings (m<sup>3</sup>). Please comment on the pros and cons of this approach (i) versus the current approach of a fixed maximum and (ii) versus incentives as a percent of net benefits.

- (d) If the current overall incentive amount (i.e. the maximum “pot”) were expressed as a percent of cubic meters, what would that be? If there are multiple answers depending on a number of assumptions, please provide those details.
- (e) What amount of incentives does Optimal believe would be reasonable as a percent of cubic meters? If possible, please provide a single figure and a reasonable range around that number. Please explain the basis for this.

## **Questions re OEB Staff.2**

### **Issue 10(a) – Residential programs**

#### **Interrogatory # 10(a)-ED-4-OEB Staff.2**

Reference: L.OEB STAFF.2

Preamble:

“Our specific recommendations include ... 5. Eliminate furnaces and boilers completely as offered measures, as they are now code baseline, and any promotion through the program creates a lost opportunity for electrification.”

Questions:

- (a) Does Optimal believe that Enbridge should eliminate gas water heater measures? Please explain the answer. And if not, please discuss how to address the lost opportunity for electrification.
- (b) Does Optimal agree with the following analysis by EFG on page 36 of its report: “Energy Star water heaters are similarly not cost-effective. The 2020 Ontario Gas Technical Resource Manual estimates that an Energy Star tank water heating will provide 68.3 m3 of savings for 16 years at an incremental cost of \$545. Analysis using Enbridge rate zone avoided costs suggests that such a water heater installed in 2023 would provide only \$360 in avoided gas and avoided carbon tax benefits. That translates to a TRC+ benefit-cost ratio of 0.66.”

#### **Interrogatory # 10(a)-ED-5-OEB Staff.2**

Reference: L.OEB STAFF.2

Question:

- (a) Please comment on the appropriateness of Enbridge’s proposed discount rate for DSM programs of 6.08%. Please provide an answer in light of NSPM recommendations regarding discount rates.
- (b) Please comment on the impact of a lower discount rate on the cost-effectiveness of measures that involve a high up-front cost and that generate benefits over time long into the future.

- (c) If a societal discount rate were used, what percent would be appropriate?

## **Issue 10(c) – Commercial**

### **Interrogatory # 10(c)-ED-6-OEB Staff.2**

Reference: L.OEB STAFF.2, p. 23

Preamble:

“Low incentive cap. In most C&I programs, including Enbridge Gas’s, the majority of savings come from a small number of very large projects. If there is a low maximum cap on incentive, then these very large projects are likely to be free riders (since the ultimate incentive is very low compared to the size of the project). Enbridge Gas’s commercial custom program, for example, has a cap of \$50,000 per project. If most savings are coming from projects in the \$500,000 - \$3,000,000 range, it does seem likely that this cap is contributing to high free ridership. This number does seem very low compared to Enbridge Gas’s peer programs – FortisBC has cap of \$500,000 for commercial buildings and \$1 million for industrial; and in Massachusetts and Illinois there are no defined incentive caps.”

Questions:

- (a) What is the purpose of a C&I program for C&I programs?
- (b) Does Optimal recommend that Enbridge remove or increase the incentive cap for C&I programs?
- (c) Would removing the incentive cap cause greater uptake and therefore a greater budget? If yes, can Optimal comment on the rough order of magnitude of the cost.

### **Interrogatory # 10(c)-ED-7-OEB Staff.2**

Reference: L.OEB STAFF.2, p. 23

Preamble:

While Enbridge Gas’s programs are largely in line with those of similar jurisdictions, there are a few steps that could lower free ridership, increase depth of savings, and expand participation:

...

22. Consider adding RCx/SEM/Energy Manager programs.

Question:

- (a) Please comment on the order of magnitude of potential available gas savings RCx, SEM, and Energy Manager programs (e.g. based on program savings in leading jurisdictions).

Please also comment on the budget levels associated with the savings levels based on leading jurisdictions.

## **Issue 10(g) – Building beyond**

### **Interrogatory # 10(g)-ED-8-OEB Staff.2**

Reference: L.OEB STAFF.2, p. 32

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<sup>43</sup>. 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<sup>44</sup>. 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 the 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 the fuel mix of the electricity<sup>45</sup>. In this light, it is unclear if ratepayer funds should be encouraging natural gas in new construction at all.”

Questions:

- (a) Could you please file a copy of the documents cited in footnotes 42, 44, and 45? With respect to footnote 44, we are specifically seeking the document stating that “Massachusetts program data, for example, indicates that all-electric new construction is the norm in above code construction.”
- (b) Does Optimal believe it is likely that there are lower initial costs and lower lifetime costs for all-electric homes in Ontario in the new construction context? Please comment on how the Rocky Mountain Institute report cited above might apply in the Ontario context in light of Ontario’s electricity mix and carbon pricing?
- (c) If Enbridge continues to provide incentives only to those planning to use fossil fuel heating, is there a risk that this could deter customers from implementing more cost-effective options, such as electric heat pumps?
- (d) Optimal states that “[n]ew construction is increasingly using heat pumps.” Could you please provide examples of jurisdictions (i) with targets for heat pump penetration and/or (ii) that require or plan to require non-fossil-fuel heating for new construction?
- (e) Could Optimal please provide any other studies or reports showing that “there is increasing evidence that all-electric new construction results in lower costs in addition to a significant GHG reduction”?

## Interrogatory # 10(g)-ED-9-OEB Staff.2

Reference: L.OEB STAFF.2, p. 32

Preamble:

Optimal states: “there is increasing evidence that all-electric new construction results in lower costs in addition to a significant GHG reduction” L.OEB STAFF.2, p. 32

- (a) Enbridge’s avoided electricity figures are as follows (per Exhibit I.5EGL.ED.16, Attachment 1):

IESO Wholesale Weighted Average Year to Date Rate \$/MWh	147.85
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IESO Monthly Market Report  
October 2020, accessed Dec  
2020

Electricity Avoided Costs	
Year	\$/KWh
2021	0.151
2022	0.154
2023	0.157
2024	0.160
2025	0.163
2026	0.167
2027	0.170
2028	0.173
2029	0.177
2030	0.180
2031	0.184
2032	0.188
2033	0.191
2034	0.195
2035	0.199
2036	0.203
2037	0.207
2038	0.211
2039	0.215
2040	0.220
2041	0.224
2042	0.229
2043	0.233
2044	0.238
2045	0.243
2046	0.247
2047	0.252
2048	0.257
2049	0.263
2050	0.268

Questions:

- (a) Please confirm that the relative cost-effectiveness of electric heat pumps versus gas equipment will depend in part on the price differential between the assumed avoided electricity price and gas price.
- (b) Please compare Enbridge's avoided cost figures with those of the IESO.<sup>1</sup> If possible, please provide a table comparing the two and the percent difference between them. Please make and state assumptions as necessary to make an apples-to-apples comparison.
- (c) Please comment generally on the appropriateness of Enbridge's avoided electricity prices in light of the work you have done in other jurisdiction and the avoided electricity costs in other jurisdictions.

## Issue 10(j) – Low carbon

### Interrogatory # 10(j)-ED-10-OEB Staff.2

Reference: L.OEB STAFF.2, p. 34

Preamble:

While gas fired heat pumps will reduce energy use compared to gas furnaces and boilers, it is unclear what benefits they would have over electric heat pumps, which are lower cost, produce greater emissions reductions, and are currently commercially available. Further, while it is likely that partial electrification does make sense for some buildings, any program not considering full electrification is losing opportunities for GHG emissions reductions.

Questions:

- (a) In response to the above comments about gas heat pumps, Enbridge may cite the Canadian Gas Association's (CGA) report entitled "Potential Gas Pathways to Support Net-Zero Buildings in Canada."<sup>2</sup> Do the points made in this report change Optimal's recommendations and comments regarding gas heat pumps, and if not why not?
- (b) The CGA report describes a net zero pathway for buildings on page 4 that involves "significant adoption of gas heat pumps" (see pathway 1). Could Optimal please comment at a high-level on the cost-effectiveness of this in comparison to a pathway relying instead on high-efficiency electric heat pumps? If it is possible to provide an order of magnitude difference in cost between those pathways, please do.

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<sup>1</sup> See <https://www.ieso.ca/-/media/Files/IESO/Document-Library/planning-forecasts/apo/APO-Avoided-Costs.ashx> and <https://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Planning-Outlook>.

<sup>2</sup> <https://www.cga.ca/wp-content/uploads/2021/11/Potential-Gas-Pathways-to-Support-Net-Zero-Buildings-in-Canada-CGA-October-2021.pdf>.



- (c) Market transformation programs are inherently forward-looking. In this light, please comment on the prudence of developing a market in more efficient gas heating (i.e. gas heat pumps and hybrid systems) versus electric cold climate heat pumps.

## **Issue 16 – Integration**

### **Interrogatory # 16-ED-11-OEB Staff.2**

Reference: L.OEB STAFF.2, p. 34-36

#### **Preamble:**

Overall, the largest issue that arises from comparing Enbridge Gas's efficiency programs to those of other gas utilities is the lack of integration with electric efficiency. A fully integrated electric and gas energy efficiency portfolio would not only enhance customer service and participation by providing a more comprehensive efficiency service, but would also significantly save on administration, assessment, evaluation, and other costs. This is especially true as the focus from efficiency programs moves from electric and gas savings to carbon savings (Massachusetts has made this change explicit in the program goals for the upcoming program cycle). We therefore strongly recommend developing a specific plan with tangible steps on how and when this integration will happen – whether it will be coordinating delivery with IESO, or a third-party administrator contracted to the OEB, as is done in Massachusetts (coordinated delivery) and Vermont (non-utility administrator).

#### **Questions:**

- (a) Please comment on the possibility of achieving full integration by having Enbridge contract with the IESO to design and/or deliver gas ratepayer funded demand-side management programs to gas customers.
- (b) Optimal cites two examples of integration: (a) coordination between existing utilities and (b) designating a third-party administrator. If gas ratepayer funded programming were designed and delivered by the IESO, would that be more like category (a) or (b) or a third option.
- (c) Please comment on whether Optimal believes legislative changes are necessary for full integration of gas and electric efficiency programming.
- (d) Please comment and elaborate on these potential benefits of fully integrating efficiency programs by having them designed and delivered under IESO via a contract with Enbridge:
  - i. Avoiding the conflict of interest of a utility that profits from pipelines being responsible for programming that would reduce or eliminate the need for pipelines;
  - ii. Enabling a fuel-neutral approach;
  - iii. Enabling the benefits of a fuel-neutral approach, such as economic efficiency, rationality, and cost-effectiveness;
  - iv. Access to low-cost government financing for program cost amortization;

- v. Avoiding the cost of shareholder incentives;
  - vi. Administrative savings;
  - vii. Ease of access for customers;
  - viii. Maintaining access to Enbridge data and customer communications channels; and
  - ix. Greater consideration of electrical system impacts; and
  - x. Balanced and accurate technical assistance, awareness building, training etc.
- (e) Government agency efficiency programming can be inconsistent and unstable because it can expand, contract, or disappear based on the election cycle. Can you comment on institutional structures to have the benefits of this option without the threat of instability?
- (f) Please comment on any potential conflict of interest for Enbridge with respect to DSM relating to: (a) Enbridge earning profits from pipeline capital projects and (b) Enbridge's interest in upstream transportation revenue on pipelines it owns outside of Ontario that serve Ontario. Please confirm that the LRAM does not address these two conflicts.
- (g) Does Enbridge's plan to incentivize gas heat pumps appear to be due to its interest in maintaining demand for gas pipelines in the future?

**EB-2021-0002**  
**Enbridge Gas 2022-2027 DSM Plan**

**Interrogatories of Environmental Defence to BOMA**

**Issue 10 – Program design**

**Interrogatory # 10-ED-1-BOMA.1**

Reference: BOMA.1

Questions:

- (a) If Enbridge were to develop a new program based on Enerlife's recommendations, please provide an estimate of: (i) the potential lifetime savings (m3) attributable to the program net of free riders, (ii) the necessary incremental DSM budget, and (iii) if possible, the TRC costs, benefits, and ratio. Please provide full details and calculations in support of the response. If beneficial and not onerous, please provide a number of illustrative program options with the above details for each. When counting savings and costs, please explicitly show that they are incremental and net of free riders (e.g. that the costs and benefits of equipment incentives available from other DSM programming are not double counted).
- (b) Please propose program design details regarding issues such as: (i) the method and timing of determining program results for the purposes of determining shareholder incentives, (ii) the method of attributing measured gas savings to those arising from the program and those arising from external factors, and (iii) the appropriate duration of customer engagement and results measurement.
- (c) If Enbridge were to adopt Enerlife's recommendation beginning in 2023, please discuss a reasonable program ramp-up by way of budget envelopes for each year from 2023 to 2027.

**EB-2021-0002**  
**Enbridge Gas 2022-2027 DSM Plan**

**Interrogatories of Environmental Defence to SUBA**

**Interrogatory # 6-ED-1-SUBA.1**

Reference: Exhibit L.SUBA.1, p. 1

Question:

- (a) Please provide a high-level estimate of the additional gas savings (m3) that could be achieved by each of the recommendations made. A best-efforts rough estimate with caveats is sufficient. Please also estimate the incremental DSM budget necessary to achieve these savings.

**Interrogatory # 8-ED-2-SUBA.1**

Reference: Exhibit L.SUBA.1, p. 31

Questions:

- (a) You recommend fewer shareholder incentives. If the maximum shareholder incentive envelope were tied to the lifetime gas savings targeted by the DSM plan (\$/m3, where m3 is the total plan 100% target gas savings), what ratio do you believe would be appropriate?
- (b) If the maximum shareholder incentive envelope were tied to the lifetime net benefits targeted by the DSM plan (i.e. \$X for every \$Y in net benefits), what ratio do you believe would be appropriate?

**Interrogatory # 10(j)-ED-3-SUBA.1**

Reference: Exhibit L.SUBA.1, p. 25

Preamble:

As part of the Enbridge Gas Low Carbon Transition Program, Enbridge is planning on including a Commercial Heat Pump Program Offering that promotes the adoption of natural gas heat pumps. While perhaps a gas heat pump would reduce carbon emissions compared to a natural gas furnace or boiler, an electric heat pump would likely reduce carbon emissions further. Instead of only promoting gas heat pumps that still have carbon emissions, Enbridge should also be educating its customers about electric heat pumps.

This program should be fuel neutral and provide information on the most appropriate, economically feasible option with the lowest carbon emissions options.

Questions:

- (a) In response to the above comments about gas heat pumps, Enbridge may cite the Canadian Gas Association's (CGA) report entitled "Potential Gas Pathways to Support Net-Zero Buildings in Canada."<sup>1</sup> Do the points made in this report change the recommendations and comments regarding gas heat pumps, and if not why not?
- (a) The CGA report describes a net zero pathway for buildings on page 4 that involves "significant adoption of gas heat pumps" (see pathway 1). Could you please comment at a high-level on the cost-effectiveness of this in comparison to a pathway relying instead on high-efficiency electric heat pumps? If it is possible to provide an order of magnitude difference in cost between those pathways, please do.
- (b) Market transformation programs are inherently forward-looking. In this light, please comment on the prudence of developing a market in more efficient gas heating (i.e. gas heat pumps and hybrid systems) versus electric cold climate heat pumps.

**Interrogatory # 16-ED-4-SUBA.1**

Reference: Exhibit L.SUBA.1, p. 25

Questions:

- (a) Please comment on the possibility of achieving full integration of electric and gas programs by having Enbridge contract with the IESO to design and/or deliver gas ratepayer funded demand-side management programs to gas customers.
- (b) Please comment on these potential benefits of fully integrating efficiency programs by having them designed and delivered under IESO via a contract with Enbridge:
  - i. Avoiding the conflict of interest of a utility that profits from pipelines being responsible for programming that would reduce or eliminate the need for pipelines;
  - ii. Enabling a fuel-neutral approach;
  - iii. Enabling the benefits of a fuel-neutral approach, such as economic efficiency, rationality, and cost-effectiveness;
  - iv. Access to low-cost government financing for program cost amortization;
  - v. Avoiding the cost of shareholder incentives;
  - vi. Administrative savings;
  - vii. Ease of access for customers;
  - viii. Maintaining access to Enbridge data and customer communications channels; and
  - ix. Greater consideration of electrical system impacts; and
  - x. Balanced and accurate technical assistance, awareness building, training etc.
- (c) Please comment on any potential conflict of interest for Enbridge with respect to DSM relating to: (a) Enbridge earning profits from pipeline capital projects, and (b) Enbridge's

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<sup>1</sup> <https://www.cga.ca/wp-content/uploads/2021/11/Potential-Gas-Pathways-to-Support-Net-Zero-Buildings-in-Canada-CGA-October-2021.pdf>.

interest in upstream transportation revenue on pipelines it owns outside of Ontario that serve Ontario. Please confirm that the LRAM does not address these two conflicts.