

**EB-2025-0064**

**Responses to Interrogatories on the Evidence of the Energy Futures Group**

**May 29, 2026**

**M1-EGI-1**

Question(s):

For the expert evidence submitted please provide a copy of:

- a) any retainer, engagement letter or other documents setting out the scope of engagement between ED/GEC and the expert in respect of the preparation of the expert evidence filed; and
- b) any specific instructions/direction provided to the expert regarding the scope, objectives or focus of the expert's work in this proceeding, including any instructions not reflected in the retainer or engagement documents.

Response:

The requested information is in attachment A, containing an email dated April 20, 2026.

**From:** [Kent Elson](#)  
**To:** [Chris Neme](#)  
**Subject:** Enbridge Rebasing Phase 3 - Energy Cost Comparison Information  
**Date:** April 20, 2026 1:29:39 PM  
**Attachments:** [1 - DSM Application Excerpt.pdf](#)  
[2 - Sarnia Saves disclaimed \(no longer available online\).pdf](#)

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Good Afternoon Chris,

Further to our discussion on Friday, we ask that you please prepare a brief report or letter assessing whether the new Enbridge energy cost comparison materials provide a full, fair, and accurate comparison of energy costs for heat pumps versus gas.

Please consider both regular customers and those in gas expansion areas where the 23 cents/m3 charge applies (see [here](#) for details).

I have attached an excerpt from Enbridge's DSM application, which appears to show the most up-to-date energy cost comparison information from Enbridge. I have also attached a previous version that was used for both the Sarnia Saves program and the DSM program.

I have asked Enbridge to provide us with any updated information, so we may receive more details later, but I think you can start with what you have.

Please let me know if you have any questions.

Kent

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**M1-PP-1**

Please explain how total energy use (e.g. heating and cooling) is relevant to providing accurate and complete information to consumers when making a comparison. Please also provide the likely impacts when only a portion of a consumer's energy use (e.g. heating only) is used for natural gas marketing materials.

Response:

Total energy use is relevant because heat pumps affect the cost of both heating and cooling. Thus, showing their impact on just heating costs does not provide customers the full picture of how switching to a heat pump will affect their total energy bills. This is important because customers care about total energy bills and are unlikely to be aware of the cooling cost savings potential of heat pumps.

The fact that natural gas marketing materials may focus just on a portion of consumer energy use – e.g., heating only – does not change the logic of the point being made in EFG's evidence.

## M1-PP-2

EFG notes that Enbridge's energy comparison information excludes cost related to natural gas conversion, including the system expansion surcharge. Enbridge has been expanding to new communities that are not economic through project grants funded by a monthly charge to gas ratepayers. A currently planned expansion is requesting a grant of approximately \$44,000 per new customer<sup>1</sup> (for gas infrastructure only, not home upgrades).

- a) Please comments the economics of prudent energy options when significant grant costs for natural gas infrastructure are not included on the cost comparison materials promoting natural gas.
- b) Please provide any recommendations or improvement on how to objectively update Enbridge marketing materials to provide a better comparison on the full cost of modern energy options for consumers not on natural gas.

### Response:

- a) The economics of energy choices do not change as a result of what information Enbridge includes in its cost comparison materials. They change only a result of what customers will actually pay for their energy. If Enbridge omits costs that will show up on customers' bills, then customers simply get a distorted view of the relative economics of their choices.
- b) When providing a comparison of costs of converting from fuel oil or propane or electric resistance heat to either natural gas or a heat pumps, Enbridge should provide a bar chart and table showing typical annual energy bills with fuel oil, propane, electric resistance heating system, a new gas furnace, and a new heat pump. Consistent with the EFG evidence, such comparisons should include all changes in variable and fixed charges. For a switch to natural gas heating, that should include each of the following:
  - Added new payments of fixed monthly gas charges that a customer currently heating with oil, propane or electric residence heating would not be currently paying but would pay with a gas connection;
  - Added new payment of variable/volumetric (per m3) gas charges that includes expansion surcharges;
  - Changes, if any, in the electric cost of distributing gas-fueled heat relative to those experienced with the existing oil, propane or electric resistance heating system;<sup>2</sup> and
  - Avoided fuel oil, propane and/or electric resistance heating system costs.

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<sup>1</sup> EB-2025-0306 Exhibit I.PP-20 and PollutionProbe\_SUB\_20260520.

<sup>2</sup> If converting from a propane furnace to a gas furnace, there would be no material change. If converting from an oil boiler to a gas furnace, the electricity required for the furnace fan will be greater than the electricity required for the existing oil heating circulator pump. If converting from electric resistance baseboard to a gas furnace, the entirety of the new furnace fan consumption would be an added cost.

For a switch to a heat pump, that should include:

- Increases in variable/volumetric (per kWh) electric charges for heating;
- Reductions in variable/volumetric (per kWh) electric charges for cooling; and
- Avoided fuel oil, propane and/or electric resistance heating system costs.

When all these factors are addressed, EFG estimates that a customer would pay over \$500 more in annual energy costs if they installed a gas furnace than if they installed a cold climate heat pump designed to meet the entire heating load of a home.<sup>3</sup> Conversely, if one were to exclude the expansion surcharge per m<sup>3</sup> of gas, the impact of new fixed monthly gas charges, the cost of running a furnace fan and the electricity savings from more efficient cooling one would conclude that the gas furnace option was about \$450 less expensive per year than the heat pump option. This underscores the importance of including all changes in costs that result from investments in either a new gas furnace or a new heat pump in cost comparisons designed to inform consumers.

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<sup>3</sup> This estimate is based on the standard gas prices (\$0.299/m<sup>3</sup>) and electricity prices (\$0.123/kWh) used in Enbridge's cost comparison, plus the \$0.23/m<sup>3</sup> gas surcharge for expansion communities; average annual gas consumption for space heating (1717 m<sup>3</sup>) and annual average electricity consumption (7864 kWh) when a cold climate heat pump is installed to meet the full space heating load, as estimated in the Ontario Gas TRM for the South (Option 4D); fixed monthly gas charges of \$27.69 (\$332 per year); \$78 per year in electricity costs for operating the gas furnace fan; and \$158 in electricity savings from an efficient cold climate heat pump displacing a less efficient central air conditioner (also based on the Ontario Gas TRM).

**M1-PP-3**

Enbridge has not yet provided all the updated natural gas marketing materials or reference documents showing the source and calculations used. A Motion is currently being heard by the OEB in this proceeding to require Enbridge to provide the full set of materials, including those updated, but not yet distributed.

- a) How would EFG's approach and recommendations apply to marketing materials not yet updated or provided by Enbridge for review?
- b) Please confirm whether having an objective third party review represents best practice when developing and validating marketing materials such as those to promote natural gas over other options. If not, why not.
- c) What process does EFG recommend that the OEB use when Enbridge makes future updates to natural gas marketing materials including energy or emissions comparisons?

Response:

- a) It is not possible to comment on how marketing materials not yet made public – and therefore that EFG has not seen – should be changed. However, EFG cannot think of a reason that the conceptual points and recommendations in its report (e.g., including all energy costs potentially impacted by heating system investment decisions) wouldn't apply to as yet unreleased marketing materials.
- b) When a utility has a vested interest in customers not switching off gas to another fuel, it is important that materials that were developed using ratepayer funds and that the utility uses to ostensibly educate customers on the impacts of their choices be critically reviewed and vetted.
- c) Given both Enbridge's vested interest in making gas look less expensive than alternatives and concerns that have been raised about its biased presentation of fuel cost comparisons over a number of years, it would be prudent to have a regulatory process and venue through which the Company is required to periodically file its most recent cost comparisons for review and approval by the Board.

**M1-PP-4**

Reference:

[Guidance on Environmental Claims in Advertising – Ad Standards](#)

The industry guidance on Environmental Claims in Advertising includes a principle to: “Make sure you have up-to-date valid, reliable and relevant scientific evidence to support all claims, both direct and implied. The data should reflect sound scientific principles that would likely be accepted by experts in the field”.

Questions:

- a) Does EFG agree that this approach represents a reasonable practice that should apply to OEB’s natural gas marketing materials? If not, why not.
- b) Please outline the impacts to energy consumers when the above noted practice is not followed, not result in objective, credible and correct assumptions and claim on natural gas marketing materials.
- c) Is EFG aware of other current guidance, requirement or best practices that the OEB should consider for application to natural gas marketing materials.

Response:

- a) The referenced language is focused on environmental claims rather than energy cost claims. That said, it is reasonable to expect Enbridge marketing materials to rely on assumptions that are “up-to-date valid, reliable and relevant” and that “would likely be accepted by experts in the field”. That said, additional and more specific criteria would likely be needed to ensure customers are fully informed and to avoid potentially misleading materials.
- b) When assumptions about underlying cost comparisons are either not up-to-date, invalid or otherwise biased or problematic, customers may be misled (even if not intentionally). The result may be decisions that customers later find to be harmful.
- c) EFG has provided other specific guidance and recommendations in its report.

**M1-PP-5**

Please provide any additional recommendations relevant to improving consumer choice based on accurate, objective and credible natural gas marketing materials for consumers considering changing equipment or fuel type.

Response:

Right now, it is most important to establish an appropriate and repeatable approach to presenting energy bill comparisons for space heating investments. This is important for customer choice as it facilitates *informed* choice.

In the future, Enbridge could also develop and provide comparisons of the energy costs (and other impacts) of other residential gas consuming equipment such as gas water heaters (compared to heat pump water heaters) and gas stoves (compared to standard electric coil stoves as well as electric induction stoves).

**M1-PP-6**

Enbridge's natural gas marketing materials including comparative information does not include any information about the energy efficiency incentives available at the time of considering equipment change. This includes Enbridge DSM or IESO Save on Energy (currently jointly delivered in a one-window approach for residential) incentives for those on gas, electricity, wood, propane or oil. Please provide what best practice approach and changes would be required to Enbridge's marketing materials to bridge this gap.

Response:

Enbridge's comparison focuses on impacts on energy bills. It does not address the capital costs of different heating system choices. That is reasonable for two reasons.

First, capital costs can vary considerably based on scenario (e.g., whether the customer was already planning to replace an existing heating system or considering replacing it earlier than normal, as well as whether or not the home's cooling system was near the end of its life) and the equipment being purchased (size/capacity, brand, efficiency level, warranty coverage, etc.). As noted in the question, there may also be financial incentives that affect customers' costs.

Second, customers will directly learn the actual cost of their options when they get quotes from contractors. In contrast, it can be difficult for customers to predict changes in overall annual energy costs from different forms of equipment.

**M1-PP-7**

Reference:

Enbridge Gas relies on mass marketing materials and communications to all existing and potential customers, rather than an approach based on targeted marketing (like for new communities being contacted or surveyed) [EB-2025-0306 Exhibit I.PP-24]

Question:

Please provide advice on how Enbridge's approach and marketing materials should be improved to more effectively provide energy efficiency information when other natural gas marketing is done (including for expansion projects).

Response:

Enbridge is not just using cost comparisons for mass marketing across its service territory. Some of the materials have been used specifically for geographically targeted efforts, such as its non-pipe solution pilots.

That said, the only difference between EFG's recommendations for marketing materials that would be distributed system-wide versus those that may be targeted to specific communities would be to ensure that the materials targeted to specific communities reflect specifics associated with such communities. For example, when marketing to expansion communities, it would be necessary to show variable gas costs that include surcharges that would be paid by those communities (rather than showing lower gas costs for non-expansion communities) and it would be appropriate to include typical electricity rates in the expansion communities rather than a system-wide average or use of Toronto Hydro rates as a proxy for system average.

**M1-VECC-1**

*“Generally speaking, the other documents in which Enbridge has recently presented heating costs comparisons are similar in structure.”*

Reference – Neme, page 3

a) Please provide all the documents that the author is referring to in this statement.

Response:

The statement refers to the range of documents provided by Enbridge on May 1 in response to Environmental Defence’s and GEC’s information request in this proceeding.

## M1-VECC-2

### Reference – Neme, page 2

*“Overall, given all the variables involved, the most effective way to inform customers of the energy bill impacts of switching from a gas furnace to a heat pump is to show the full range of changes in annual bill impacts for different heat pump applications. The total impacts should be shown in a comparison bar chart, with a supporting table with details. At least the following heat pump use cases should be included:*

- *As part of a full electrification of all end uses;*
- *Full electrification of just heating but continued use of gas for other end uses; and*
- *Partial electrification of heating with a hybrid furnace-heat pump system.”*

### Questions:

- a) What is the factual basis for the claim that “most effective way to inform customers” is as articulated in the above reference? Specifically, please provide what customer focus, survey or other actual evidence of consumer communication preference, understandability or response to advertisements with respect to HVAC services was undertaken to support the above supposition.
- b) Please compare and contrast the differences between HVAC communications/ advertisements in the United States and Canada, specifically Ontario.

Specifically, Ontario and EGI’s service territories cover a wide range of climate (grow) zones. How should the various climate differences in the areas of the Province be included (or not) in EGI communications?

### Response:

- a) The referenced statement is making two points. The first is that customers will generally be more interested in full range of impacts on annual energy bills than only partial impacts. The second is that, because there are different situations faced by customers considering heat pumps, presenting results for several common electrification scenarios that different customers may be considering is more informative. EFG did not rely on focus groups or customer surveys to reach other of those conclusions. Rather, they seem self-evident.
- b) EFG has not conducted research or analysis of differences in HVAC communications between Ontario and any other jurisdiction. With regard to climactic differences between different parts of Enbridge’s service territory, it is reasonable to consider presenting information on cost differences separately for southern regions of the territory (perhaps using Toronto as a proxy) and more northern regions (perhaps using Ottawa as a proxy).

Indeed, the gas and electricity impacts of switching to heat pumps are shown separately in the TRM for the North and South.

**M1-VECC-3**

Reference – Neme, page 4

*“The average value for the heating months of October through April will be non-trivially lower.”*

Question:

- a) What are the average value for heating months in each of EGI’s existing rate zones? Please provide the last for year and the most recent 3 year average.

Response:

Enbridge provided a breakdown of annual average degree days by month for the City of Toronto between 1991 and 2020 in the Excel attachment to the Environmental Defence information request in this proceeding. Enbridge will have the most up-to-date information and it would be able to more efficiently provide any more granular data of this nature on the record, perhaps in response to interrogatories on Enbridge’s reply evidence.

## M1-VECC-4

Reference – Neme, page 6

*“Your total energy bill may go up where electricity is more expensive than natural gas (per equivalent unit of heating after accounting for your realized equipment efficiency), and vice versa” A customer scanning the wording may be drawn to the bolded language about heating bills going up and either not read about the potential for (“or vice versa” language) or assume there is a much lower probability of bills going down. Also, the sentence is not accurate because it excludes consideration of other factors discussed below (e.g., cooling energy savings).*

Question:

- a) Is the author disputing the statement that a total energy bill may go up if electricity is more expensive than natural gas? Is that not a possibility?

Response:

- a) No. EFG is simply making the point that the total energy bill could also go down and that only highlighting the fact that it could go up without equally highlighting the fact that it could go down is a biased presentation.

**M1-VECC-5**

Reference – Neme, page 6

*“Enbridge omits the effect of installing a high-performance air source heat pump on cooling energy consumption.”*

Questions:

- a) Please provide a list of the various types of heat pumps (“high performance or otherwise”) that are currently available for installation in all regions of Ontario served by Enbridge.
- b) Is it possible for a consumer to purchase a “non-high performance” heat pump in Ontario? If so, what are the implications of different types of heat pump purchases to the economic comparisons with natural gas?

Response:

- a) There are literally thousands (if not tens of thousands) of heat pump models available in Ontario. That includes air source heat pumps, ground source heat pumps and air-to-water heat pumps. Air source heat pumps can be further subdivided into cold-climate and non-cold climate models. EFG’s report (like Enbridge’s cost comparison) focused on air source heat pumps since they are most common. EFG’s use of the term “high performance” was a reference to cold climate models.
- b) It is possible for a customer to purchase a non-high performance (or non-cold climate) heat pump. Because they are less efficient and do not perform as well in colder climates, such heat pumps will result in higher electricity bills per unit of heat provided for a given type of application.

## M1-VECC-6

Reference – Neme, page 6

*“Enbridge’s analysis omits the electricity consumption associated with furnace fans. Gas furnaces cannot provide heat to a home without such fans..... eliminating the furnace fan consumption when converting to a heat pump would translate to \$78 per year in energy bill savings that are not included in Enbridge’s analysis..”*

Questions:

- a) What is the percentage of Ontario homes are served by water radiant heat systems?
- b) What additional infrastructure is required for a heat pump to be installed in a home only piped for radiant water heating?
- c) What is the payback period for converting from natural gas radiant water system to exclusive electricity/heat pump?
- d) In the author’s opinion should Enbridge inform consumers as to the various costs of conversions from their existing heating system?

Response:

- a) Mr. Neme’s recollection from reviewing Enbridge data in the past is that the vast majority of single-family homes served by the Company use forced air (i.e., furnace) heating and that a relatively small portion use some form of hydronic (i.e., boiler) heating. That conclusion is supported by an NRCAN report suggesting that there were about 7 furnaces for every boiler used for space heating in Ontario in 2007.<sup>4</sup> Radiant floor heating would be just a subset (and probably a small subset) of the already small portion using gas for hydronic heating. However, EFG was not able to relatively quickly identify a reference to a document for a more specific response. Enbridge will have the most up-to-date information and it would be more efficient that they put information of this nature on the record. The question is best posed to Enbridge in the upcoming interrogatories on Enbridge’s reply evidence.
- b) If installing a centrally-ducted air source heat pump in a home currently using any form of hydronic heating, it may be necessary to install duct work. However, if the home already has ducts for central air conditioning, that may not be necessary. Alternatively, one could consider installing either an air-to-water heat pump or ductless air source heat pumps in such homes, eliminating the need for ducts. Radiant floor heating is an ideal application for air-to-water heat pumps. Depending on the home, some upgrades to electrical systems (e.g., electrical panels) may be required to install a heat pump that meets the entire heating need of a home.

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<sup>4</sup> These are results across all fuels. Data were not separately presented for just homes using gas as their primary heating fuel ([https://publications.gc.ca/collections/collection\\_2010/nrcan/M144-120-3-2007-eng.pdf](https://publications.gc.ca/collections/collection_2010/nrcan/M144-120-3-2007-eng.pdf)).

- c) EFG has not conducted such an analysis as it is beyond the scope of his evidence in this proceeding.
- d) See response to M1-PP-6

## M1-VECC-7

Reference – Neme, page 7

*“The Ontario government provides higher electricity price rebates for low-income customers if they have electric heating.<sup>4</sup> Depending on income and size of household, the increase ranges from \$204 per year to \$456 per year. Enbridge omits this fact from its comparison..”*

<https://ontarioelectricitysupport.ca/faq>

Question:

- a) If EGI were to adopt this proposal should they also be required to inform consumers that:  
*“Most eligible customers need to re-apply every 2 years or whenever their personal circumstances change. For example, eligible customers would need to re-apply if they move or experience a change in income level.”* (op cit).

Response:

- a) A footnote to that effect may be appropriate. However, it is important to note that many other assumptions in Enbridge’s cost comparison – most notably assumptions about gas rates – can also change significantly in a relatively short period of time. Thus, a footnote explaining that cost comparisons are based on current energy prices, which can and have fluctuated significantly over time, may also be appropriate.

## M1-VECC-8

Reference – Neme, page 9

*“Present total heating and cooling energy bills in a simple bar chart, as many customers may find that easier to understand. The chart should show the combined heating and cooling cost of a gas furnace and central air conditioner, as well as for the three heat pump scenarios described in recommendation #2 above. The chart should be followed by appropriate caveats explaining that cost differences will vary based on a variety of factors including current and future energy prices, furnace and heat pump efficiency ratings, the size of the home, insulation levels of the home, etc.*

### Questions:

- a) How does the size of home and nature of insulation impact the economic value of conversion from natural gas to electricity/heat pump?
- b) The author argues in the evidence for many details to be included in economic evaluations and communications from EGI. Why are discussions of the impact of the other factors noted in this reference not as (or more) important to include in the analysis? For example, full conversion is premised by the author in a number of places, but homeowners with natural gas heated swimming pools may be less likely to make full conversion (or a conversion more expensive if replacing pool heating system). Likewise, customers may be worse off financially, if a full conversion requires replacement of a natural gas used for other reasons. Should EGI inform natural gas heated pool, natural gas BBQ, natural gas stove/oven, etc. owners of the potential cost implications of making heating source conversions?

### Response:

- a) All other things being equal, larger homes will require more heat and therefore larger energy bills to heat and cool. All other things being equal, a better insulated home will require less heat and therefore smaller energy bills to heat and cool. Such differences affect the magnitude of variable costs of energy. They will also affect the relative importance of fixed monthly charges on customers’ bills (for those customers who may consider full electrification).
- b) Space heating is by far the largest impact on gas bills. The second largest end use is water heating. Thus, it may be reasonable for Enbridge to also develop a comparison of water heating costs. EFG would expect the energy bill impacts of gas water heating conversions to heat pump water heaters to be better than for space heating because heat pump water heaters can be 4 to 7 times more efficient than gas water heaters (compared to a 2- to 4-fold increase in space heating efficiency). On average, other gas end uses (e.g., cooking) typically represent very small fractions of total gas consumption, so EFG would not expect them to have large impacts on the energy bill impacts of full electrification.