ONTARIO ENERGY BOARD

EB-2021-0002

IN THE MATTER OF the *Ontario Energy Board Act*, 1998, S. O. 1998, c. 15, Schedule B;

AND IN THE MATTER OF an application for a Multi-Year Natural Gas Demand Side Management Plan (2022 to 2027).

Submissions of Environmental Defence

Re Enbridge 2023-2027 Demand Side Management Program

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Overview

Gas demand side management programs are by far the most important measure the OEB takes to reduce customer energy bills. For each dollar invested, much more than one dollar is saved – up to $13 for the most efficient programs. The current proposed programs are slated to achieve $3.4 billion in lifetime benefits for customers, mainly through avoided gas costs. However, there is a huge untapped potential for greater savings. By redirecting ineffective program dollars elsewhere and increasing overall investments, the OEB could easily save customers another billion dollars and more. Needless to say, there are no other equivalent opportunities to reduce energy bills on the OEB's regulatory calendar.

The potential for greater savings arises in part because Enbridge has devoted all of its proposed budget increases to programming that is deeply flawed, such as its gas heat pump programming and gas-biased consultation for builders. In addition, there is still a great deal of room to increase investment levels to capture all cost-effective programming. The proposed investment levels are lower than the past in real dollars and are far even from the conservative yardstick of $2 per month per residential customer. Amortization could further increase opportunities to increase investments and reduce energy bills.

Unfortunately, the proposed plan actually produces less savings than previous plans. This is contrary to government and OEB directives and contrary to the interest of customers in lowering energy bills. However, this creates a major opportunity for the OEB to provide directions that could save customers much, much more.

These submissions address each issue in turn and respond to the questions posed by the OEB in its letter of April 11, 2022. A list of the requests made by Environmental Defence can be found on page 28. The most important request, however, is to increase energy bill savings and achieve all cost-effective DSM by directing Enbridge to reallocate funding from counter-productive programming and increase overall investments in DSM.

Issues 1-3 (directions, policies, and best practices): More work needed

Issues 1 to 3 ask whether the proposed 2023-2027 framework and plan are consistent with OEB directions, government policies, and industry best practices. Unfortunately, they are not. Most importantly, the proposed DSM plan does not result in increased savings and misses major opportunities to lower Ontarians' energy bills. The specific areas of divergence are discussed below in relation to the relevant issue.

Issue 4 (term): Refile a plan update

Issue 4 asks whether the proposed 2023-2027 term is appropriate. The proposed term is only appropriate if Enbridge is directed to file an updated plan that would achieve greater savings and consistency with government directions as soon as possible, as discussed further below. If Enbridge is not directed to refile a plan update as soon as possible, the plan term is too long in light of the significant problems as outlined below. In this scenario, the term should be two years at most.

Issue 5 (DSM framework): Maintain high-level approach

Issue 5 asks whether the proposed DSM policy framework is appropriate. Environmental Defence has two primary comments on the framework:

- **Fuel neutrality:** The proposed framework largely takes a fuel neutral approach, which is appropriate, but could be strengthened in that regard; and
- **Shareholder incentive envelope:** The maximum shareholder incentive envelope should be tied to overall savings to give Enbridge an incentive to prepare a stronger plan when it next does so.

Fuel neutrality

Although the proposed DSM plan is not fuel neutral, the proposed DSM framework is largely fuel neutral. For instance, it does not restrict eligibility to gas equipment only nor prohibit fuel switching measures. This is appropriate.

Fuel neutrality requires that utilities develop DSM programs that will result in the lowest energy bills irrespective of fuels. Fuel neutrality does *not* require that incentives be provided equally for gas and electric equipment. It requires that they be considered on a level playing field, which may result in a variety of different outcomes. When a utility is exploring DSM measures, it must analyze fuel-switching measures alongside gas-only measures to see which will result in lower energy bills. In the words of Optimal Energy, fuel neutrality means "choosing technologies based on cost-effectiveness and emissions reduction, as opposed to what type of energy they run on."[1]

Fuel neutrality is important. An approach that is not fuel neutral will be inefficient and result in inferior outcomes, such as the following:

- **Skewed incentives:** A non-fuel-neutral approach will sometimes provide incentives for inferior options that are more expensive for customers in comparison to options relying on another fuel. This will result in skewed and irrational incentives. Program marketing will magnify the impact of the skewed financial incentives and has the potential to inadvertently mislead customers.
- **Higher-than-necessary energy bills:** When customers are given incentives to install inferior equipment and encouraged to do so by DSM marketing, they will end up with up with higher-than-necessary energy bills.
- **Wasted ratepayer dollars:** Spending DSM dollars on inferior options is a waste of ratepayer dollars.

OEB directives and government policy mandate fuel neutrality. Both stress the importance of maximizing cost-effectiveness and minimizing energy bills, which requires fuel neutrality. In

[1] Exhibit L.OEB STAFF.2, p. 34.

addition, the Minister of Energy's recent mandate letter to the OEB expressly called out the importance of fuel neutrality in DSM programming, stating as follows:

> It is also important that the DSM Framework be implemented in a way that enables customers to lower energy bills in the most cost-effective way possible, and help customers make the right choices regardless of whether that is through more efficient gas or electric equipment.[2]

Furthermore, the evidence of Dr. McDiarmid highlights another reason why fuel neutrality is particularly important now. All-electric heat pumps are "near or over a cost-effectiveness tipping point" relative to traditional gas furnaces and are "getting more cost-effective as carbon prices increase and technology improves."[3] This was not always the case. The change has come about because of (a) improved heat pump efficiencies, (b) the advent of cold-climate heat pumps, and (c) increasing carbon pricing. This change means that the negative costs of gas-biased programming are not merely theoretical. They are real, significant, and steadily increasing.

In addition, Dr. McDiarmid, Optimal Energy, and the Energy Futures Group all believe based on their research that electrification is the most likely decarbonization pathway for heating. For instance, Dr. McDiarmid notes that leading institutions have called for the electrification of heating, such at the International Energy Agency's recommendation to phase out fuel-based heating systems.[4] Similarly, Optimal Energy notes that "decarbonization studies have found that the electrification alternative would have both lower costs and a higher degree of certainty regarding the technical feasibility."[5] If electrification of heating ends up being the pathway to decarbonization of buildings, which seems likely, gas-biased programming will not only waste ratepayer DSM funding but could be counter-productive by locking in equipment that is inconsistent with a net-zero future.

Guiding principles – include fuel neutrality

The proposed guiding principles are consistent with fuel neutrality in that they highlight the importance of cost-effectiveness and lowering energy bills, which require fuel neutrality. Although this is technically sufficient, Environmental Defence recommends that the OEB provide additional specificity by inserting the Ministry of Energy wording excerpted above into the guiding principles. The new guiding principle would read as follows:

> DSM plans should enable customers to lower energy bills in the most cost-effective way possible, and help customers make the right choices regardless of whether that is through more efficient gas or electric equipment.

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[2] Ministry of Energy, November 15, 2021 Mandate Letter to the OEB (link), p. 3.
[3] Dr. McDiarmid Presentation, March 21, 2022 (link), p. 9; Addendum: Update with IESO Avoided Cost Values (link).
[4] Dr. McDiarmid Presentation, March 21, 2022 (link), p. 9.
[5] Exhibit 10j-ED-10-OEB Staff.2.

Equipment eligibility should remain fuel neutral

The proposed DSM framework does not rule out incentives for fuel switching equipment that can cost-effectively replace gas consumption with efficient electricity consumption. In addition, electric heat pumps are eligible measures in its residential programming (as part of a hybrid heating system) and commercial programming (as part of custom programming). This is appropriate and in the best interest of customers for all the same reasons listed above in relation to fuel neutrality. Disallowing fuel switching measures would waste ratepayer dollars, skew incentives, and result in higher-than-necessary energy bills.

In addition, disallowing fuel switching would be a reversal of long-standing OEB policy. DSM guidelines have always allowed for fuel switching measures. For instance, a previous guideline stated: "The natural gas utilities may pursue DSM activities that support fuel-switching away from natural gas where these activities align with the above three DSM objectives and contribute to a net reduction in greenhouse gases."[6] Fuel switching measures have been expressly approved in past applications dating back at least 15 years, when gas prices were high.[7]

Low gas prices over the past decade meant that fuel switching was not cost-effective. However, fuel switching measures were never disallowed. Fuel switching is now cost-effective due mainly to increasing carbon pricing and electric heat pump improvements.[8] Now would be the worst time to reverse decades of OEB policy by disallowing fuel switching measures.

Eligible participants – gas customers only

The OEB's letter of April 11, 2022 asked for submissions on the appropriateness of providing assistance to non-gas customers or to customers. Environmental Defence is not proposing that Enbridge provide assistance to non-gas customers.

However, a challenge arises where Enbridge provides assistance to *potential* customers only if they agree to put in gas equipment, particularly in the building beyond code program. This is highly problematic as it is not fuel neutral, and therefore causes all the problems listed above. Environmental Defence does not propose that this programming be widened to include non-gas customers. Instead, it should be cancelled altogether and the funds put to uses that maximize energy bill savings. This and other reasons why the building beyond code program should not be approved are discussed on page 19 below.

Remove requirements to stay with gas

As detailed below, Enbridge should not include provisos in its programs that prevent customers from leaving the gas system in whole or in part. For instance, the requirement that residential customers "use a natural-gas furnace or boiler as their primary source of space heating at the time of the initial and final audits" is highly problematic.[9] Disqualifying customers who decide

[6] DSM Guidelines, June 30, 2011, EB-2008-0346, p. 4 (link).
[7] E.g. EB-2006-0034, Decision, July 5, 2007.
[8] Analysis of Heat Pumps for Cost-Effectiveness & Climate Alignment, March 21, 2022 (link).
[9] Technical Conference Transcript Volume 4, p. 3, ln. 22

to leave the gas system in whole or in part is contrary to government policy, counter-productive, and unfair.

- **Government Policy:** The Ministry's mandate letter stresses the importance of helping "customers make the right choices regardless of whether that is through more efficient gas or electric equipment."[10] Forcing customers to remain with gas heating limits customers' choices, contrary to the government's directive.

- **Counter-productive:** The primary goal of DSM is to lower energy bills. Restricting customers from making the most cost-effective decisions is counter to that goal.

- **Unfair:** Requirements that customers to remain with the gas system may be motivated by fairness to other gas customers. On deeper inspection, they are not fair at all. A customer will have been paying for DSM for other customers for as long as those programs have been in existence (the early 1990s). They should have an opportunity to benefit from DSM programming as they have been funding other customers' efficiency upgrades for decades in most cases, even if this will involve a partial or complete reduction in gas consumptions. Limiting eligibility decreases fairness.

For further comments in relation to the residential program, see page 16 below.

In any event, the proposed DSM framework does not prohibit fuel switching measures nor disallow customers who may switch in whole or in part from gas. That is appropriate. Furthermore, the OEB does not need to consider the question of whether Enbridge should be actively encouraging full fuel switching. Although we believe this has merit, Enbridge has not proposed such a measure.

Maximum shareholder incentive – tie to quality of the plan

Enbridge proposes that the maximum shareholder incentive envelope remain at the historic level and increase by inflation. Environmental Defence strongly opposes this proposal. Instead, the maximum shareholder incentive envelope should be pegged to the quality of Enbridge's proposed plan, namely the total net benefits to customers, or alternatively, the total gas savings.

Under the current model, utilities have a financial incentive to meet and beat targets set out in their approved multi-year DSM plans. However, they have no financial incentives to design optimal plans that maximize benefits to consumers, achieve the highest energy bill reductions possible, or include the most cost-effective programs available. The utilities actually have a perverse incentive to propose plans with only modest savings targets that are easier to meet and beat. Optimal Energy describes this as follows:

> The main issue with the current approach of a fixed maximum incentive is that it gives Enbridge a theoretical incentive to propose both higher costs and lower savings in their plans – since less ambitious plans will be easier to achieve and

[10] Ministry of Energy, November 15, 2021 Mandate Letter to the OEB (link), p. 3.

> thus make it easier to earn the full incentive, and having a higher budget makes it further easier to achieve.[11]

Utilities are incentivized to *execute* DSM plans well, but not to *design and develop* optimal plans. For example, the utilities have no financial incentive to make additional efforts to include innovative and highly cost-effective programs in their proposed plans.

The total envelope should be tied to results *before* the next plan is proposed to give Enbridge the incentive to develop an optimal plan. No changes are required to the existing plan. But an adjustment to the framework now would encourage Enbridge to return to the OEB with a much better plan the next time around. Also, this only impacts the total envelope. As such, the remainder of the incentive structure can remain the same so as to encourage effective execution of the plan.

Environmental Defence recommends that the OEB adopt Optimal Energy's suggestion that the total shareholder incentive envelope be pegged to the overall net benefits.[12] The current envelope is approximately 5% of net benefits, such that Enbridge earns approximately $1 for every $20 in net benefits its programs generate for customers.[13] The OEB could adopt a peg at that level or any other level it believes is appropriate.

However, there are multiple reasonable alternative approaches, such as pegging the envelope based on the forecast gas savings or the forecast gas savings as a percent of sales. The most important thing is that the DSM framework move away from a fixed incentive model that incentivizes proposed plans with higher costs and lower savings.

Issue 6 & 9 (savings and budgets): More energy bill reductions needed

Issues 6 and 9 ask whether the proposed budgets and gas savings targets are appropriate. We deal with these in conjunction as they are linked. Environmental Defence submits that Enbridge should be directed to achieve all cost-effective DSM by redirecting funds from non-cost-effective measures (e.g. gas heat pumps) and by increasing overall investment levels. This is necessary to comply with government directives, OEB directives, and lower energy bills.

More gas savings needed

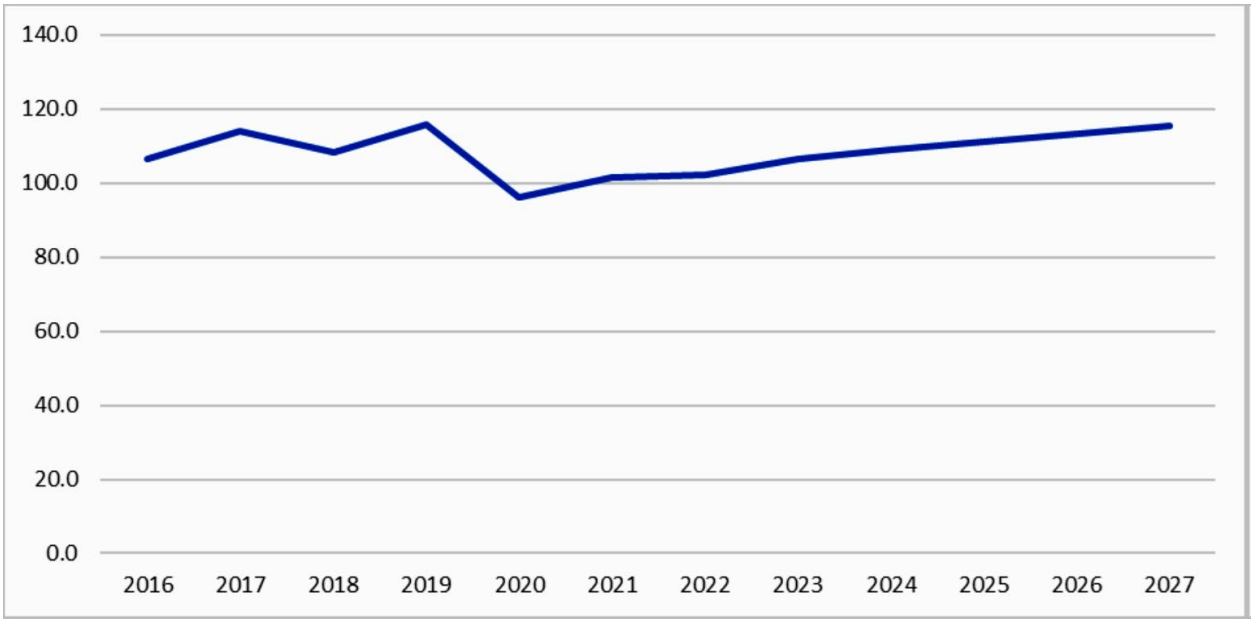
The Ministry of Energy has clearly directed increases in gas savings from DSM. Its most recent November 15, 2021 mandate letter states that DSM should deliver "increased natural gas conservation savings and reductions in GHGs."[14] The Ministry's letter of November 27, 2020 also noted that it is "supportive of increasing cost-effective ratepayer funding of natural gas conservation" and called for the OEB and utilities to "increase the cost-effective conservation of natural gas to simultaneously reduce emissions and lower energy bills."[15] In short, the Ministry

[11] Exhibit 8-ED-3-OEB Staff.1(c) (link).
[12] *Ibid*.
[13] Exhibit 8-ED-3-OEB Staff.1(a) (link); Exhibit I.5.EGI.ED.11 (link).
[14] Ministry of Energy, November 15, 2021 Mandate Letter to the OEB (link), p. 3.
[15] Ministry of Energy, November 27, 2020, DSM letter to the OEB (link), p. 1.

has directed the OEB to achieve more cost-effective savings. These letters from the Ministry of Energy are legally binding under the *Ontario Energy Board Act*.[16]

The proposed plan would *decrease* overall savings, contrary to government policy, as shown in the below chart and table comparing past and planned gas savings levels.

Planned Annual Savings *Lower* than 2017-2019 Achievements



Average Annual Savings (Millions m3)[17]	
2017-2019	**2023-2027**
113	111

More bill reductions needed

The OEB's and Ministry's directives both focus on reducing customer bills. This directive also requires greater gas savings from DSM programming. The best way to lower bills is by increasing savings.

DSM spending is an extremely good investment. For every $1 invested, customers reap $3.24 in benefits on average, mainly through gas savings.[18] The industrial programs are even more cost-

[16] Energy Futures Group Presentation, (link) p. 6; Energy Futures Group Report (link), p. 9.
[17] *Ontario Energy Board Act*, s. 2 ("The Board, in carrying out its responsibilities under this or any other Act in relation to gas, shall be guided by the following objectives: … To promote energy conservation and energy efficiency in accordance with the policies of the Government of Ontario, including having regard to the consumer's economic circumstances.").
[18] Transcript Volume 1, p. 171, ln. 10.

effective, achieving $13.17 in savings for every $1 invested.[19] This accounts for all of the costs of the DSM measures, including both the customer and utility portion of the costs. The result is lower bills and lower carbon emissions.

Customers will reap **$3.4 billion** in lifetime benefits from the proposed 2023-2027 DSM programming.[20] The majority of these benefits are through reduced gas consumption, which directly lowers gas bills.[21] These $3.4 billion in benefits are net of free ridership, meaning these benefits are actually attributable to the spending in question.[22] After netting out the costs of the DSM measures and applying the 6.08% discount rate to the stream of future benefits, the net benefits to consumers are still $1.8 billion.[23]

Gas DSM is by far the greatest opportunity for the OEB to reduce energy bills. Literally billions of dollars of potential bill reductions are at stake. No other OEB applications come close to that magnitude of potential savings. Even a 30% increase DSM savings would achieve approximately $1 billion in additional energy bill reductions for Ontario ratepayers.

Reallocate budget to more effective uses

DSM savings can be increased in part by redirecting funding from ineffective uses, such as the market transformation funding for gas heat pumps. Those areas are discussed in detail below under issue 10, which deals with program design. The dollar figure for each is estimated in the table below.

Funding that can be Reallocated to Increase Savings	
Residential fossil fuel equipment incentives (whole home program) (not cost-effective, see page 18 below)	$4.5 million[24]
Other sector fossil fuel equipment incentives (cost-effectiveness not established vs. electric alternatives, see page 19 below)	$8 million[25]
Market transformation – building beyond code (not cost-effective and fuel-biased, see page 19 below)	$9.5 million[26]
Market transformation – gas heat pumps (criticized by all expert witnesses, see page 21 below)	$3.75 million[27]

[19] *Ibid*. p. 171, ln. 17.
[20] *Ibid*. p. 171, ln. 26.
[21] *Ibid*. p. 165, lns. 13-18.
[22] *Ibid*. p. 166, lns. 11-15.
[23] *Ibid*. p. 172, lns. 3.
[24] Exhibit J2.2
[25] *Ibid*.
[26] Exhibit D, Tab 1, Schedule 1, Page 12.
[27] *Ibid*. (note: the low carbon transition program is approximately 50% for hybrid heating and 50% for gas heat pumps).

Market transformation – hybrid heating (maintain funding, but refocus program to maximize savings, see page 22 below)	$3.75 million[28]
Municipal consulting and advocacy (not cost-effective and fuel-biased, see page 25 below)	$1 million[29]
Residential – savings from overlap with Greener Homes Grant	Unknown
Total	**$30.5 million**

It appears that approximately $30 million can be redirected to better uses and thus increase savings. This funding can be used, for instance, to increase funding for the most cost-effective programming and implement as many of the program-specific recommendations of Optimal Energy, Energy Futures Group, and the Green Energy Economics Group as possible. Many of those recommendations involve deeper customer incentives, removal of incentive caps, and other steps that will require funding. These steps could considerably increase bill savings for customers.

Increase overall DSM investments

In addition, DSM investments should increase to capture all cost-effective bill reductions. The amount of funding that can be redirected is limited. The overall level of investment should increase to further lower bills and meet government directives.

The plan includes a mere 3% real increase annually. In addition, 100% of these increases are allocated to the market transformation programming that has been panned by all experts in this proceeding.[30] By 2027, the funding for resource acquisition programs (i.e. cost-effective programs with measured savings), will actually be $5 million less than resource acquisition funding in 2020 in real dollars.[31]

The proposed budget levels are based on an overly narrow interpretation of the word "modest" and do not account for the other guidance provided by the OEB and Board. All of the relevant factors call for greater DSM investments.

Bill impacts: As noted above, DSM reduces energy bills. Greater investments in DSM would result in greater bill reductions.

Rate impacts and non-participant impacts: DSM costs are funded through rates charged to all customers. For all participants, the added costs are greatly outweighed by the savings achieved through reduced gas usage. Although their gas rates may go up slightly, this is more than offset by reduced gas usage and charges. As a result, o*nly non-participants face net costs from DSM*

[28] *Ibid*.
[29] Exhibit E, Tab 4, Schedule 1, Page 5 (Total funding is $1.7 million. We propose retaining
[30] Exhibit I.6.EGI.ED.20, Page 5 (excerpted in Appendix A below).
[31] Exhibit J1.4 (excerpted in Appendix A below).

programs. Therefore, the impact of DSM costs on gas rates is really an issue about fairness to customers who have not participated in DSM programs.

The best way to ensure fairness to non-participants is to expand DSM programs and funding. Although this seems counterintuitive, expanded programs help address the non-participant fairness issue by:

- Increasing the number of participants (decreasing the number of non-participants); and
- Increasing the *opportunities* to participate (addressing *fairness* to non-participants).

In other words, expanding DSM programs is best for all consumers because it creates the greatest opportunities for all customers to lower their energy bills. The best way to address rate impacts, which are more accurately described as non-participant impacts, is to expand programs and program funding so that the most customers have an opportunity to participate.

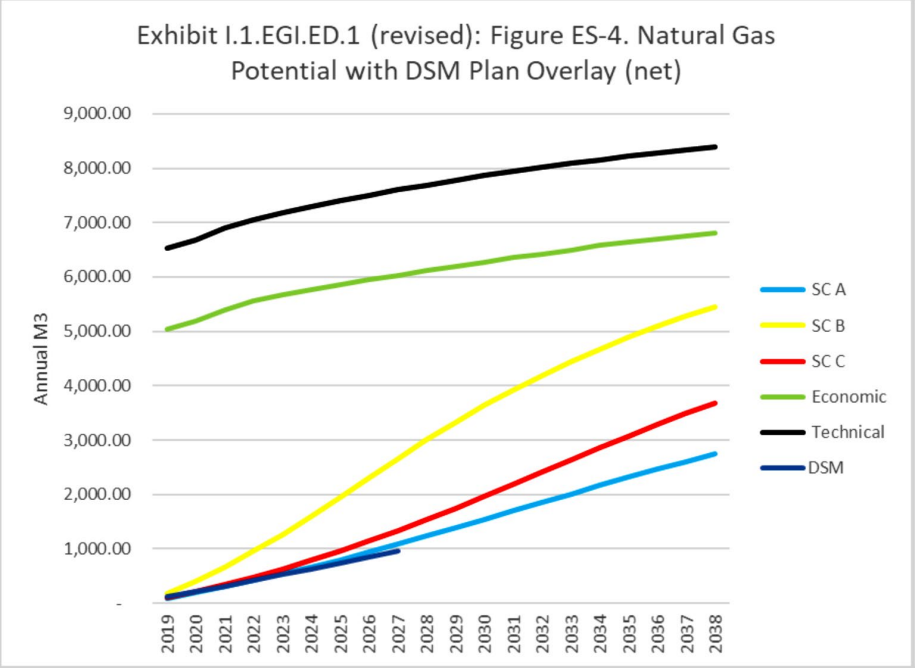
In addition, even non-participants receive some benefits from DSM investments, just not the same magnitude of benefits as the program participants. DSM reduces the distribution costs all customers pay, suppresses market prices of gas, and provides other financial benefits to non-participants.[32] The OEB has directed the utilities to analyze this issue further.[33] Although the exact magnitude is still being analyzed, DSM investments do result in some system savings for non-participants as well as wider economic benefits that accrue to all Ontarians such as jobs, GDP growth, and increased government revenue. In contrast, many supply-side investments in pipelines are paid by all ratepayers but only benefit a portion of customers in a specific area.

Furthermore, participation must be viewed over a long time period. A customer who participated 15 years ago by upgrading their boiler would still be reaping benefits through reduced gas usage, which would help offset DSM costs.

In sum, non-participant impacts are best addressed with larger DSM investments that increase opportunities to participate.

Potential study: The OEB directed Enbridge to have regard to the DSM potential study in setting budget levels. The below figure produced by Enbridge shows that its plan (represented by the dark blue line at the bottom) is below all potential study scenarios, even the status quo scenario.

[32] EB-2015-0029/0049, *Direct Testimony of Paul Chernick*, July 31, 2015.
[33] OEB, *Decision and Order in EB-2015-0029/0049*, January 20, 2016 (approving 2015-2020 DSM plans), p. 87.



[34]

Environment plan: The proposed plan will achieve *less than 0%* of the Environment Plan goal for gas savings in that the annual average savings are approximately 12% less than the Environment Plan's status quo starting point.[35]

Best practices: The proposed savings levels are *at best* 50% less than leading gas utilities.[36]

Government policy: Enbridge cited an Ontario government news release in its final submissions, which stated as follows: "As the Ontario Energy Board's decision on Enbridge's proposed 2023-2027 DSM plan is pending, MECP used a conservative illustrative scenario, assuming a 10% real increase in funding in 2030." This is clearly *not* a policy directive to constrain funding to a 10% increase. It explicitly cites this as a "conservative illustrative scenario" and refers to the OEB's proceeding.

As noted above, government policy, as outlined in clear letters to the OEB, calls for greater savings and lower bills, both of which require more investments in DSM.

Modest increases: The proposed budget escalation is an overly narrow interpretation of the word "modest" in the OEB's letter. The proposed budget levels are actually decreased when considered in any context, such as percent of bills or the overall rate impact.

Total gas bills are expected to almost double between 2020 and 2027, increasing to $9.3 billion from $4.5 billion, largely due to carbon price increases.[37] That estimate pre-dates the Ukraine war and resulting commodity price increases. As a percent of overall gas bills, DSM costs will

[34] Exhibit JT1.1.
[35] Energy Futures Group Presentation, (link) p. 8.
[36] *Ibid*. p. 9.
[37] Exhibit JT1.6.

decline significantly in Enbridge's proposal. In addition, the increasing bills significantly strengthen the need for DSM and the financial benefits to customers from DSM.

The DSM budget will also decline when measured on a cost per month per residential customer basis because the number of customers have increased. To maintain a $2 per month impact, the budget would increase by $55 million.[38]

Near term: The OEB's letter referred to modest increases in the *near term* in its letter of 2020. Any reasonable understanding would have modest increases in the first few years, with an opportunity for more ambitious investments (and savings) in the latter years of the term.

Decarbonization costs: Gas DSM investments should increase because they are by far the cheapest carbon reductions available. The cost of reducing carbon increases as time goes on as low hanging fruit is picked. It is even more important now than it was 5 years ago to be seizing opportunities for cheaper decarbonization options. The proposed programs provide $49 in net benefits per tonne of CO2e avoided.[39] In other words, the cost is *negative* $49 per tonne. That is $100 per tonne cheaper than the current price of carbon ($50 per tonne).

As Ontario strives to reduce emissions, it makes absolutely no sense to implement expensive initiatives when we have cost-effective gas DSM available that can lower bills and lower carbon emissions. It is contrary to the financial interests of ratepayers to miss this opportunity.

Carbon reductions: All of the above reasons focus on the financial interest of consumers. In addition, gas DSM reduces carbon emissions, which is important for its own sake. The burning of gas in Ontario contributes approximately one third of all of Ontario's emissions.[40] It is imperative that efforts be made now to reduce these emissions.

Lost opportunities: Without budget increases, we will lose important opportunities to lower bills and carbon emissions. For instance, efficiency measures are often only cost-effective when equipment needs to be replaced, during new construction, or renovations. If those opportunities are missed due to, for example, insufficient funding for incentives or marketing, they will be lost for decades. More and better DSM programs are needed now.

Issue 7 & 8 (amortization and incentives): amortize and fix incentives

Amortize DSM costs

Environmental Defence requests that DSM costs be amortized as part of an expansion of DSM investments focused on reducing energy bills. The benefits of amortization were summarized as follows in the OEB's Mid-Term Review Decision:

> "The benefits of amortizing DSM costs include:

[38] Exhibit I.5.EGI.ED.12 (The figure is $55 million after accounting for inflation, or $32 million if inflation is disregarded).
[39] Exhibit J1.3.
[40] EB-2020-0136, Exhibit I.ED.7 (link, PDF p. 112).

- Softening rate impacts – spreading the cost over 15 years will enable participants to pay for the cost of the DSM program with the savings from reduced gas usage.

- Consistency with supply-side investments – the cost of the natural gas utilities' new capital infrastructure is amortized over a period of time.

- Intergenerational fairness – amortization decreases the number of customers that pay for DSM programs but do not benefit.

- Allows for greater expansion of cost-effective DSM – reduces the amount of upfront costs, allowing for a greater breadth of programming to be implemented."[41]

Optimal Energy agreed with all of those benefits.[42] The Energy Futures Group outlined similar benefits and recommended amortization as part of increased DSM investments.

There are three main criticisms of amortization, which are addressed below:

Buildup of financial liability: One party noted that amortization will build up financial liability (i.e. a regulatory asset) and the concern that this is risky when the future viability of the gas pipeline business in the face of decarbonization is unknown. However, as noted by Optimal Energy, this is no reason to avoid amortization. First, DSM costs will pale in comparison to gas infrastructure costs.[43] Second, DSM assets are less likely to be stranded costs as customers can benefit from things like building envelope improvements even if they electrify.[44] In contrast, a gas distribution line has no alternative uses.[45] Third, as long as DSM costs are tracked, they could be socialized in the future if the government deems that to be appropriate.[46]

More fundamentally, it would be counter-productive to respond to the financial risks associated with decarbonization by forgoing additional energy efficiency that could be enabled by amortization. More energy efficiency, not less, will help to address those risks.

Interest costs: One party noted the basic fact that customers will ultimately pay more due to the cost of financing. However, that is not strike against DSM amortization as it applies to everything, including amortization of infrastructure expenses.[47] It also ignore the time-value of money. Customers are not "paying more" if the interest paid for amortization is equivalent to the value they place on benefits now versus benefits in the future.[48]

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[41] Report of the Ontario Energy Board, Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors (2015-2020), EB-2017-0127/8, November 29, 2018 (link), p. 27.
[42] Transcript Volume 5, p. 131, lns. 7-15.
[43] *Ibid*., p. 132, lns. 23-26.
[44] *Ibid*.. p. 133, lns. 1-6.
[45] *Ibid*.
[46] *Ibid*., p. 133, lns. 7-13.
[47] *Ibid*., p. 134, lns. 1-5.
[48] *Ibid*., p. 134, lns. 5-8.

In addition, amortization can actually be cheaper than expense treatment if money can be borrowed to fund DSM at a cost of capital that is less than the consumer's discount rate.[49]

Inflection point: Enbridge asserts that there will always be a point in time at which amortization starts costing more than expense treatment due the buildup of past liabilities. This disregards the key benefit of DSM amortization – customers can pay for the costs of amortization with the benefits of DSM over time. Those benefits and costs appear on gas bills. Although the costs of amortization increases over time, what matters is customer bills, and they will be declining (all other things equal) due to the increased DSM savings.

Amortization details

Environmental Defence submits that there are a number of reasonable approaches to implement amortization and does not take a strong stance on one over the others. However, to be responsive to the request for comments on that issue, we provide the following suggestions:

- **Interplay with shareholder incentives:** Incentives should be provided separately from an amortization rate of return such that the OEB can maintain as much of its existing incentive structure as possible.

- **Cost of capital:** Enbridge should be directed to seek out the least expensive capital for this specific purpose. It should not be necessary to pay the weighted average cost of capital because (a) DSM measures are a less risky regulatory asset (discussed above) and (b) Enbridge will earn a return through shareholder incentives.

- **Term:** DSM should be amortized over the average-weighted measure life, which is approximately 15 years. This will provide the best match of costs to benefits.

Other incentive issues

Environmental Defence has serious concerns with the incentive structures proposed in the plan. However, these issues have been fully addressed by the experts and other intervenors. Environmental Defence supports the recommendations of the Energy Futures Group and Optimal Energy as well as the submissions of the Green Energy Coalition.

Issue 10 (programs): significant changes needed

Residential: expand eligibility to all gas customers

Enbridge's residential program requires that customers "use a natural-gas furnace or boiler as their primary source of space heating at the time of the initial and final audits."[50] Environmental Defence submits that the only requirement should be that the customer be a gas customer at the time of the initial audit. By the time of the final audit, they should not be disqualified if they

[49] *Ibid*., p. 135, lns. 6-28.
[50] Technical Conference Transcript Volume 4, p. 3, ln. 22

have moved partially, or even fully to, electric heating. Continuing to disqualify customers on this basis is contrary to government policy, inconsistent with other programming, counter-productive, and unfair.

- **Government Policy:** The Ministry's mandate letter stresses the importance of helping "customers make the right choices regardless of whether that is through more efficient gas or electric equipment."[51] Forcing customers to remain with gas heating limits customers' choices, contrary to the government's directive.

- **Inconsistent:** Enbridge's hybrid heating offering would result in electricity replacing gas as the "primary" heating source.[52] As noted by Optimal Energy, the residential program restriction conflicts with this program and its goals.[53]

- **Counter-productive:** The primary goal of DSM is to lower energy bills. Restricting customers from making the most cost-effective decisions is counter to that goal.

- **Unfair:** It appears this requirement is motivated by fairness to other gas customers. On deeper inspection, it is not fair at all. A customer will have been paying for DSM for other customers for as long as those programs have been in existence (the early 1990s). They should have an opportunity to benefit from DSM programming as they have been funding other customers' efficiency upgrades for decades in most cases. Limiting eligibility decreases, not increases fairness.

Residential: require update/approval after NRCan negotiations

Enbridge should be directed to seek approval for its residential programming as soon as negotiations with National Resources Canada have concluded, whether or not an agreement is made. If an agreement is made with National Resources Canada, it will be necessary to determine if it meets the OEB's and the governments' goals and directives. If a deal is *not* made, it will still be necessary to consider the appropriateness of Enbridge's offerings in light of the overlap with the Greener Homes Grant.

In anticipation of a potential agreement with National Resources Canada, we made the following recommendations:

- **Incremental approach:** Ratepayer dollars should not displace Greener Homes Grant funding. That would result in 100% free ridership. Instead, ratepayer dollars should expand eligibility, increase incentives, and increase the incentive cap.

- **Expand eligibility:** An agreement should expand the offerings to customers excluded from the Greener Homes Grant, including to non-principal residences. This would be an appropriate use of ratepayer funding.

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[51] Ministry of Energy, November 15, 2021 Mandate Letter to the OEB (link), p. 3.
[52] Transcript Volume 1, p. 192, lns. 23-26.
[53] Transcript Volume 5, p. 130, lns. 13-20.

- **Expand incentive cap:** An agreement should allow gas customers to participate in multiple measures and receive more than the current cap of $5,000 in incentives.

- **Expand incentives:** An agreement should top-up incentives for gas customers for building envelope improvements to increase uptake.

- **Existing measures:** An agreement should maintain the existing Greener Homes Grant measures to ensure consistency. However, gas ratepayer funding should only be provided to fund building envelope and space and water heating measures.

- **Delivery by the National Resources Canada:** It will likely be more efficient and effective for delivery to be implemented by National Resources Canada. It has already created national infrastructure for this purpose. If Enbridge proposes to take on delivery, it should provide evidence that it explored alternatives, including the cost and convenience implications of each.

A post-negotiation application process need not be anywhere near as lengthy as the current process. The issues will be far narrower and can be addressed efficiently and effectively.

Gas equipment rebates: reallocate to better uses

Whole home rebates

As recommended by Energy Futures Group and Optimal Energy, rebates for gas-consuming appliances should be eliminated from residential programs, with the budget reallocated to other measures.[54] These rebates are not at all cost-effective.[55] For instance, the $250 furnace rebate achieves approximately $110 in savings over 18 years.[56] For this reason alone, these rebates should be scrapped.

Enbridge argues that these rebates are a reasonable and appropriate lost leader intended to drive participation in other aspects of the Whole Home Program. This argument does not hold water. In 2021, Enbridge spent over $4.5 million on fossil fuel equipment rebates as part of the whole home program even though participation was significantly dampened by the pandemic.[57] Enbridge has not provided evidence to (a) justify this significant expense, (b) compare it to alternative measures to drive participation, or (c) quantify the participation it drives. It is likely that significantly greater participation could be generated with lesser cost through increased marketing or upstream incentives directly to HVAC contractors. Enbridge should not be allowed to spend over at least $4.5 million annually as a lost leader without evidence on alternatives.

In addition, Enbridge argues that the incentives should be provided for those customers who are not interested in exploring more cost-effective electric heat pump options. This, again, makes no

[54] Energy Futures Group Report (link), p. 37-38; Energy Futures Group Presentation, (link) p. 19.
[55] Energy Futures Group Report (link), p. 37-38; Exhibit L.OEB STAFF.2, p. 10 ("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.")
[56] *Ibid.*
[57] Exhibit J2.2.

sense. The measures are highly cost ineffective. The funding should be allocated to improved building envelope incentives to drive more bill savings.

The above reasons are sufficient to deny funding for the residential gas equipment incentives. But in addition, those incentives are problematic as they are not fuel neutral and therefore could encourage customers to adopt gas over electric options that may be better and less expensive. Again, it is not only the rebates that are relevant. Enbridge actively markets this program though HVAC contractors. Thousands of customers are left with the impression that the efficient and "green" choice is to get a more efficient furnace, when that is not actually the case.[58] This kind of fuel-biased programming is misleading and contrary to informed customer decisions.

Commercial and multi-residential

For similar reasons, rebates for gas equipment in other programming should be reallocated to other measures. The argument against gas equipment rebates in the Whole Home Program is very straightforward because the equipment is so obviously cost ineffective. In commercial and multi-residential programming the problem is that Enbridge has not established whether or not its gas equipment rebates are cost-effective vis-à-vis alternatives, such as electric heat pumps. Whenever the electric option is better, Enbridge's incentives and associated marketing will actually cause customers to lose money and increase gas consumption.

To be clear, Environmental Defence does not take the position that incentives for more efficient gas equipment should never be provided. Instead, the problem is a lack of justification for the proposed spending, as well as the significant possibility that in some cases the incentives and marketing will direct customers to choose inferior options that result in both higher bills and higher carbon emissions. Enbridge can re-introduce cost-effective gas measures, but only if a robust comparison with electric alternatives shows that the gas measure is clearly preferred.

Building beyond code: reallocate to more effective programming

Enbridge's building beyond code program should not be approved and its funding should be directed to more effective programming. For 2024, this would allow $9.4 million to be reallocated to better uses. All experts have raised significant concerns with this programming. It is irreconcilably flawed and counter-productive.

- **Biased incentives:** This program provides incentives only to builders who promise to install fossil fuel heating. As noted by Optimal Energy and Energy Futures Group, there a risk that this could deter customers from implementing more cost-effective options, such as electric heat pumps.[59]

- **Biased advice and technical assistance:** This program provides consultation and advice to builders and code-drafters. This will be inherently gas-biased due to the advisors' focus on incentivizing gas equipment and company's inherent self-interest.

[58] Dr. McDiarmid Presentation, March 21, 2022 (link), p. 9; Addendum: Update with IESO Avoided Cost Values (link).
[59] Exhibit 10c-ED-7-OEB Staff.2(c).

This concern is substantiated by the job posting for Enbridge advisors in the municipal energy sector, which require those advisors to lobby for continued gas use in municipal energy plans.[60]

- **Bill increases:** The evidence of Dr. McDiarmid and Optimal Energy confirm that electric heating is increasingly the most cost-effective option for new construction.[61] There are a number of reasons for that, including the ability to avoid gas infrastructure and to avoid after-the-fact retrofit costs. A program that incentivizes gas in new construction will result in high-than-necessary energy bills.

- **Wasted ratepayer funding:** It is a major waste of ratepayer dollars to fund a program that is not only cost ineffective, but will in many cases increase both customer bills and carbon emissions.

- **Future looking:** The building code program is a market transformation program that is future looking. As noted by Energy Futures Group: "Given the policy imperatives of reducing both customer energy bills and greenhouse gas emissions, the province should be considering whether future building codes should allow for *any* fossil fuel heating, water heating, cooking and other gas end uses – i.e., whether new buildings should be all-electric. A primary objective underlying a net zero energy ready code is that new buildings have the ability to become zero GHG emitting. That is not feasible for buildings relying on fossil gas and there is no evidence to suggest that it is possible – let alone at costs comparable to electricity – to displace anything close to all existing fossil gas use in Ontario with biofuel alternatives."[62]

A program like this must be fuel neutral. However, we are not asking that Enbridge be directed to implement a fuel neutral building beyond code program because of the following:

- Enbridge has not proposed a fuel neutral approach, and thus the OEB cannot consider the relevant details;

- Enbridge does not have the required expertise pertaining to the electricity system to implement a fuel neutral approach;[63] and

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[60] Enbridge Job Posting, Senior Advisor, Municipal Energy Solutions (link).
[61] Exhibit L.OEB STAFF.2, p. 32 ("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 construction44. 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."); Dr. McDiarmid Presentation, March 21, 2022 (link), p. 9; Addendum: Update with IESO Avoided Cost Values (link).
[62] Energy Futures Group Report (link), p. 40.
[63] *Ibid*, ("The Company has acknowledged that it doesn't understand the peak demand impacts of heat pumps on the electric grid, so it does not have the knowledge necessary to assess trade-offs between gas and electric choices that will be required when future codes are established.").

- Enbridge has an irreconcilable conflict of interest in favour of promoting the continued use of fossil fuel pipelines.

Therefore, we see no other option other than to eliminate the program completely and direct the funding elsewhere. Simply eliminating the program will likely bring about better results for customers by removing disincentives to cost-effective electrification. And reallocating the dollars can improve incentives for building envelope improvements and the like.

Gas heat pumps: reallocate to more effective programming

Enbridge is proposing to spend $3.75 million on gas heat pump programming in 2024, with a steep escalation thereafter.[64] This funding should be reallocated. Enbridge's proposal to subsidize gas heat pumps has been criticized universally by all experts who opined on this. Optimal Energy stated as follows:

> [G]iven that residential gas-fired heat pumps have very limited market availability (Enbridge expects them to come to market in 2024) and that electric heat pumps are a common, well established, and much more efficient technology, it is likely that gas heat pumps will be more expensive than electric heat pumps when they come to market. If it's the case that 1) they are more expensive then electric units and 2) less efficient than electric units, and 3) they don't decarbonize as much as electric heat pumps, then a path that uses gas-heat pumps to decarbonize will likely be less beneficial than a path that uses electric heat pumps.[65]

Optimal Energy also noted that "decarbonization studies have found that the electrification alternative would have both lower costs and a higher degree of certainty regarding the technical feasibility."[66]

Dr. McDiarmid came to the same conclusion. In short, "[g]as heat pumps are expensive and inconsistent with a net zero transition."[67] Traditional gas equipment and all-electric heat pumps are far more cost-effective.[68] Indeed, all-electric heat pumps are "near or over a cost-effectiveness tipping point" relative to traditional gas furnaces and are "getting more cost-effective as carbon prices increase and technology improves."[69]

The Energy Futures Group came to the same conclusion as well. It concluded as follows:

> Since gas heat pumps are neither cost-effective nor likely to make any meaningful contribution to 2030 GHG emission reduction goals, it is inappropriate to devote current DSM budget to promoting them. The budget would be much better spent on known

[64] Exhibit D, Tab 1, Schedule 1, Page 12. (Note: the low carbon transition budget is allocated approximately 50% for hybrid heating and 50% for gas heat pumps).
[65] Exhibit 10j-ED-10-OEB Staff.2
[66] *Ibid*.
[67] Dr. McDiarmid Presentation, March 21, 2022 (link), p. 9.
[68] *Ibid*., p. 4-5.
[69] *Ibid*., p. 9; Addendum: Update with IESO Avoided Cost Values (link).

> technologies that provide gas savings today and would still provide benefits – in terms of reduced electric grid costs – if buildings are electrified in the future.
>
> Enbridge's proposed investment in gas heat pumps is indicative of a general problem with the Company running ratepayer-funded market transformation programs focused on gas consuming technologies in an era in which there are serious questions about the relative merits of gas versus electricity as the optimal fuel for meeting customers' energy needs affordably while reducing GHG emissions.[70]

There would be strong reasons to direct this funding to electric heat pump programming instead. As noted by Dr. McDiarmid, "[a]ll electric heat pumps would benefit from programming to overcome low consumer and installer awareness of the technology, overcome misconceptions about their performance and lifetime costs, and build installer capacity."[71] However, Environmental Defence is not asking the OEB to make that direction today. A decision on the appropriateness of all-electric heat pump programming would need to be based on a detailed application.

We therefore ask that the gas heat pump programming not be approved and the funding reallocated elsewhere.

Hybrid heat pumps: focus more on driving savings

Environmental Defence agrees that the hybrid heat pump program is an appropriate offering for homeowners who are replacing an air conditioner but are not interested in changing out their furnace. However, the current offering requires two important adjustments:

Require cold-climate models: The program should only incentivize cold-climate models. This specification requires efficient operation at -15°C. This specification is important because:

- **Effectiveness:** If the equipment is ineffective at low temperatures, it will not cost-effectively displace sufficient quantities of gas;
- **Availability:** There are more than 5,000 cold-climate models available from a very wide range of manufacturers; and
- **Need for incentives:** Non-cold climate models are produced in the millions are not in need of market development.[72]

Future-proofing: The program should encourage customers to install models that will be compatible with full electrification should they decide to take that route when their furnace fails. If that is not done, the purchase of a non-future-proofed hybrid system could result in unnecessarily high costs to convert a heating system in a net-zero future.

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[70] Energy Futures Group Report (link), p. 41-42.
[71] Dr. McDiarmid Presentation, March 21, 2022 (link), p. 9.
[72] Transcript Volume 4, p. 91-93.

Overall, the hybrid heat pump programming should be aiming to become a resource acquisition program as soon as possible. That would provide additional rigour and a focus on driving more savings (e.g. through more efficient equipment).

Large volume: no changes

The OEB should not eliminate the large volume program or add an opt-out option. These questions were addressed in great detail in the previous DSM plan proceeding. In that proceeding, the OEB reviewed detailed evidence. It came to the firm conclusion that the large volume program should continue. The OEB had initially excluded large volume customers in the DSM framework. However, at the DSM plan proceeding the OEB agreed with the expert evidence that the programming should continue, finding as follows:

> The OEB finds that Union's large volume customers should be a part of Union's DSM programs. The OEB was assisted by the evidence provided by Union and the expert witnesses. The OEB benefitted from the fuller evidentiary record produced in this proceeding, which was not available to the OEB at the time the DSM Framework was established.
>
> …
>
> The DSM Framework highlighted two concerns with mandated rate funded DSM for the large volume customer class. First, the OEB was of the view that large volume customers would already be competitively motivated to ensure that their systems were efficient. The OEB found the evidence of the expert witnesses, which was that large volume customers would not initiate all cost-effective conservation if DSM programs similar to those offered until 2015 were not available, compelling. Furthermore, the expert evidence was that in jurisdictions which offered an "opt-out" provision, large volume customers did not actively pursue all available conservation and when given the opportunity to demonstrate that they had spent an equivalent amount of money on conservation, the large volume customers did not avail themselves of this option. Submissions from parties also made it clear to the OEB that the lost opportunity for natural gas savings from this customer segment would be substantial.[73]

It would be inappropriate to order an opt-out mechanism in this case, as IGUA suggests, because the issue has not been adequately explored. No evidence was filed by IGUA on the subject. No interrogatories were asked by IGUA on the subject. No technical conference questions were asked by IGUA on the subject. No presentations were made by IGUA on the subject. We were not aware that any party sought to re-litigate this issue until questions were asked at the hearing itself.

However, we were able to pose questions to Optimal Energy on the topic. Optimal Energy confirmed that "there is a large body of literature that has shown that there is still plenty of cost-effective efficiency in large customers."[74] Optimal Energy confirmed that there are many reasons

[73] Decision and Order, EB-2015-0029 / EB-2015-0049, January 20, 2016, p. 50
[74] Transcript Volume 5, p. 119.

why competitively motivated large volume customers do not implement all cost-effective energy efficiency, including:

- They have limited capital, and therefore need an incentive to put their scarce resources towards energy efficiency;[75]

- They do not have perfect or complete information about what energy efficiency measures are available and their relative benefits;[76]

- Managers have limited time and other priorities to deal with, meaning that conservation does not get the attention necessary for the achievement of all cost-effective conservation;[77] and

- Corporate managers have incentives to focus on initiatives with significantly shorter payback periods.[78]

If Optimal Energy and OEB in its 2016 decision are right that large customers still have opportunities to implement cost-effective energy efficiency, an opt-out provision is unnecessary, a waste of Enbridge's time, and a waste of ratepayer-funded administration dollars. And that assumes the opt-out provision is well-designed. If it is not well-designed, the outcomes will be even worse.

The parties arguing for an opt-out provision now are the same parties arguing for it in the past. Based on the principles underlying the doctrine of *res judicata*, they should not be allowed to re-litigate the same issue that was already decided, especially when they have filed *no evidence* on the issue.

Environmental Defence's expert Chris Neme was asked some questions about an opt-out option during the hearing by IGUA's counsel. He expressed some support for this concept as long as opt-out was supported by a fully independent audit examining whether any DSM opportunities existed with a 7-8-year payback period. These off-the-cuff comments are the *only* actual *evidence* in support of an opt-out option. However, these comments were elicited on the second-last day of the hearing. There was not a sufficient opportunity for the issue to be adequately explored through reasoned evidence and interrogatories.

An opt-out process raises many questions. Who pays for it? How can we ensure the independent audit is truly independent? What oversight would intervenors have over the process? What payback period would be appropriate? Would the opt-out audit be valid for one year or more? These questions have not been explored.

A perfectly designed opt-out option has some theoretical validity as a concept. But the real world is full in imperfections and transaction costs. All the experts noted numerous studies finding that large customers have cost-effective DSM opportunities despite having a competitive motivation

[75] *Ibid.,* p. 121, ln 6
[76] *Ibid*., p. 121, ln 13.
[77] *Ibid*., p. 121, ln 18.
[78] *Ibid*, p. 121, ln. 24.

to reduce costs. Based on that evidence, we should not waste Enbridge's time and ratepayer money developing an opt-out process.

In the alternative, if the OEB is supportive of an opt-out option, it should ask Enbridge to consider designing one as part of the next DSM plan. This would allow the OEB and parties to adequately consider, on the evidence, both the appropriateness of an opt-out option, as well as the important details that would need to be decided.

Municipal engagement: Financial support only

Enbridge proposes to spend $1.7 million annual on "municipal engagement" relating to Municipal Energy Plans.[79] This should be restricted only to financial support for municipalities. No funding should be provided for a Municipal Solutions Team to provide advice and consultation. Enbridge is the wrong entity to provide advice to municipalities, including for the following reasons:

- **Pro-gas lobbying:** According to Enbridge's job posting, its senior municipal advisors are required to "[a]dvocate for the continued use of natural gas and its role as a low carbon option in the development of Municipal Energy Plans."[80] Ratepayers should not be funding what is effectively lobbying by Enbridge to municipalities to include the continued use of natural gas in their energy plans.

- **Lack of expertise:** Enbridge lacks the expertise to provide the kind of fuel-neutral perspective required by forward looking municipal energy plans. For instance, it acknowledged that it does not understand the peak demand impacts of heat pumps on the electric grid, so it does not have the knowledge necessary to assess trade-offs between gas and electric choices.[81]

- **Inherent self-interested:** Enbridge is inherently and irreconcilably self-interested in the continuation of the pipeline business. Even if Enbridge commits to a fuel neutral approach, there will be strong incentives to deviate from that approach.

Enbridge proposes to fund this programming under the administration line. This is not administration. The only reasonable contribution Enbridge can make to municipal energy plans is direct financial support that is explicitly untied to any outcomes relating to gas use. All other aspects of this budget should not be approved.

[79] Exhibit E, Tab 4, Schedule 1, Page 5
[80] Enbridge Job Posting, Senior Advisor, Municipal Energy Solutions (link).
[81] *Ibid*, ("The Company has acknowledged that it doesn't understand the peak demand impacts of heat pumps on the electric grid, so it does not have the knowledge necessary to assess trade-offs between gas and electric choices that will be required when future codes are established.").

Issue 13 (input assumptions): electricity avoided costs

Enbridge should be directed to update its electric avoided costs. Enbridge uses the full wholesale cost, not the marginal cost, which is obviously incorrect. Optimal Energy and the Green Energy Economics Group confirmed that marginal costs should be used, not wholesale costs.[82]

Enbridge continues to think about electric avoided cost as if it is a decade ago and they are a relatively minor consideration as a small portion of the avoided costs. That is no longer appropriate. Avoided electricity costs are critical in any comparison of electric versus gas options. Enbridge's excessively high electric avoided costs greatly disadvantage electric options versus gas options. This need to be fixed.

Issue 16 (coordination): design by the IESO

For many, many years, the government and the OEB have directed more coordination between electric and gas efficiency programs. The result has been collaboration that is partial and piecemeal at best. A fundamentally new approach is needed. In particular, Enbridge should be contracting with the Independent Electricity System Operator ("IESO") to lead the design of gas DSM programs, with the programs all delivered jointly. In a decarbonizing world where fuel neutrality is critical, there must be coordinated *design*, not only coordinated delivery. IESO design and joint delivery would bring about major benefits:

- 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;
- Enabling a fuel-neutral approach;
- Enabling the benefits of a fuel-neutral approach, such as economic efficiency, rationality, and cost-effectiveness;
- Access to low-cost government financing for program cost amortization;
- Avoiding the cost of shareholder incentives;
- Administrative savings;
- Ease of access for customers (i.e. a one-stop-shop);
- Maintaining access to Enbridge data and customer communications channels;
- Greater consideration of electrical system impacts; and
- Balanced and accurate technical assistance, awareness building, and training.[83]

[82] Technical Conference Transcript Volume 3 , p. 100, lns. 5-9 & p. 168, lns. 2-17.
[83] Transcript Volume 5, p. 143-144.

Assuming the IESO or another appropriate third party is willing to participate, it is fully within the OEB's jurisdiction to direct Enbridge to seek out this arrangement. In addition, there is precedent for the OEB directing utilities to contract out for certain services. For instance, the OEB's current Framework for Energy Innovation process is focused on distributed energy resources that would be contracted from third parties and not utility owned. The direction to contract out the design of this programming would simply be an extension of the OEB's role in setting gas rates and providing conditions on DSM programming funded by rates.

The Board Staff experts come to a similar conclusion that full integration is necessary. A paragraph from its evidence is worth repeating in full:

> [The low carbon transition program] reflects a broader problem with a lack of integration between Enbridge Gas's gas efficiency programs and IESO's electric programs. Customers tend to approach energy use holistically, regardless of whether it's electricity or natural gas, and most important gas measures – insulation, air sealing, demand control ventilation, wi-fi thermostats – also save electricity due to lower cooling and ventilation requirements. Further, having to deal with two different program administrators, with different applications, incentive structures, and requirements, adds significant transaction barriers to the participation process, as well as duplicative administrative costs for application processing, energy assessments, technical assistance, marketing, and EM&V. In addition, by cost sharing program and rebate costs, both electric and gas ratepayers can benefit. **All the other best-in-class natural gas efficiency programs that we reviewed were integrated with electric efficiency, so that customers could address energy use holistically through a single point of contact at the program administrator.** While Enbridge Gas's application and interrogatory responses mention that it will explore opportunities to further align its programs with those of IESO's, it does not lay out specific steps, or commit to full integration. This is likely the single best step that Enbridge Gas could take to improve the savings and cost-effectiveness of its program offerings.[84]

Issue 17 (stakeholder engagement): opportunity for early comment

This proceeding shows that Enbridge's stakeholder engagement has been woefully inadequate. Major portions of its programming have been criticized by all kinds of intervenors. Input earlier on in the process could have avoided some of this.

We understand that other intervenors have specific detailed proposals on stakeholder engagement and we therefore can leave the details for them. However, at a bare minimum, Environmental Defence submits that a stakeholder engagement process should involve: (a) input before the programs have been designed; and (b) input on a draft plan while there is still time for changes to be made. A process with these kinds of steps would require some resources, but would likely recover those resources through more efficient DSM proceedings and better DSM plans.

[84] Exhibit L.OEB STAFF.2, p. 34.

Issue 18 (implementation): re-file a reallocated plan

The current proposed plan requires significant changes that will require Enbridge to file an updated application with the OEB as soon as possible. Those changes include, for example:

- Residential programming changes based on negotiations with National Resources Canada;
- Reallocation of funding from inappropriate programming ($25 million in 2023 rising to $45 million in 2027);
- Additional investments in measures to lower customer bills (see page 11 above); and
- Many programmatic changes recommended by the experts.

These changes require adjustments to key portions of the programs, such as rebate levels and the like. These in turn, will impact scorecard targets. We recommend that Enbridge be directed to file for approval of updates to its programming based on guidance from the OEB as soon as possible, with a target implementation date of mid-point of 2023.

We understand that the OEB regulatory calendar is full and the OEB will be reluctant to add to it and to add to the regulatory costs. However, that is far preferable to the alternatives of (a) letting Enbridge proceed with counter-productive portions of its plans and (b) missing opportunities to achieve *billions* of dollars in energy bill savings (see page 9 above). Also, many of the issues will be settled at the end of this hearing. An update can be streamlined and efficient. It is well worth it in light of the important interests of consumers that are at stake.

Conclusion and summary of requests

This has been an unusually complex DSM proceeding. This is due in part to the increasingly complex interactions between fuel types, the quickly changing energy landscape, and decarbonization. We are also at a critical juncture as the province and country grapples with its 2030 carbon reduction targets. Now is not the time to direct Enbridge to proceed with a flawed five-year plan. More work is needed now, and billions of dollars in potential savings are on the line.

Environmental Defence's specific requests are as follows:

- **Issue 4 (term):** Require Enbridge to file an updated plan as soon as possible, or in the alternative, limit the term to two years at most;
- **Issue 5 (DSM framework)**
    - Add a fuel neutrality principle based on the Ministry of Energy's letter wording
    - Maintain a framework that does not prohibit fuel switching or limit eligibility to customers that commit to remain on the gas system
    - Peg the shareholder incentive maximum to total net benefits to customers
- **Issue 6 & 9 (savings and budgets)**

    - Increase gas and bill savings by:
        - Reallocating dollars from the programs listed below (~$25 million in 2023 rising to ~$45 million in 2027); and
        - Further increasing investments to capture all cost-effective DSM.
- **Issue 7 & 8 (amortization and incentives)**
    - Amortize DSM costs to facilitate the investments needed to lower energy bills (see page 16 for detailed design comments)
    - Adjust performance incentive structures the expert recommendations
- **Issue 10 (programs)**
    - Remove the requirement that residential participants maintain gas as their primary heating source
    - Require approval for updated residential offerings after the negotiations with National Resources Canada are complete
    - Disallow and reallocate the funding for
        - Gas equipment rebates, with the option to re-introduce cost-effective measures only after a comparison with electric alternatives shows that the gas measure is preferred (see page 18);
        - Building beyond code programming (not cost-effective and fuel-biased, see page 19);
        - Gas heat pump programming (criticized by all expert witnesses, see page 21);
        - Municipal consultation staff, but retain direct financial support (not cost-effective and fuel-biased, see page 25).
    - Improve the hybrid heat pump offering to maximize savings and ensure the equipment is more future-proof
    - Do not implement an opt-out provision for large volume customers
- **Issue 13 (input assumptions):** Develop accurate electric avoided costs figures based on marginal costs
- **Issue 16 (coordination):** Direct Enbridge to seek to contract with the IESO for it to design and jointly deliver programs
- **Issue 17 (stakeholder engagement):** Improve processes to allow for earlier comments
- **Issue 18 (implementation):** Re-file an updated plan as soon as possible.

Thank you for the opportunity to make these submissions.

Appendix A – Allocation of Budget Increases

Proposed Budgets - 2023-2027							
	2023	2024	2025	2026	2027	% Change (2023 versus 2027)	% Change (2023 versus 2027)
						Nominal	Inflation Adjusted[1]
Resource Acquisition (incl. all but market transformation)	$110.9M	$113.1M	$115.3M	$117.6M	$120.0M	8.2%	0.0%
Percent Increase	N/A	2.0%	2.0%	2.0%	2.0%		
Market Transformation	$13.0M	$17.0M	$21.3M	$25.8M	$30.6M	135.0%	117.1%
Percent Increase	N/A	30.7%	24.9%	21.3%	18.7%		
Total Program	$123.9M	$130.1M	$136.6M	$143.4M	$150.6M	21.6%	12.3%
Portfolio Overhead[2]	$18.4M	$18.7M	$19.1M	$19.5M	$19.9M	8.2%	0.0%
Total	$142.3M	$148.8M	$155.7M	$162.9M	$170.5M	19.8%	10.7%

[1]Assumed 2% annual inflation.

[2]Includes all Portfolio level costs (admin & non-admin)

Exhibit I.6.EGI.ED.20

DSM Investments - 2019-2027 Budgets									
	2019 [2]	2020 [2]	2021 [2]	2022 [2]	2023	2024	2025	2026	2027
Total programs (nominal)	$104,256,598	$106,429,657	$106,429,657	$106,429,657	$112,099,380	$118,115,505	$124,380,665	$130,966,271	$137,888,489
Total programs (real $2019)[1]	$104,256,598	$105,885,459	$101,439,603	$99,450,591	$102,694,633	$106,084,339	$109,520,916	$113,058,568	$116,700,270
Resource acquisition (nominal) [3] (all but market transformation)	$94,813,519	$96,826,762	$96,826,762	$96,826,762	$99,797,287	$101,826,121	$103,862,643	$105,939,896	$108,058,694
Resource acquisition (real $ 2019) [1 3] (all but market transformation)	$94,813,519	$96,331,665	$92,286,949	$90,477,401	$91,424,642	$91,454,181	$91,454,180	$91,454,180	$91,454,180
Market transformation (nominal)	$9,443,079	$9,602,895	$9,602,895	$9,602,895	$12,302,093	$16,289,384	$20,518,022	$25,026,375	$29,829,795
Market transformation (real $ 2019)[1]	$9,443,079	$9,553,793	$9,152,654	$8,973,190	$11,269,990	$14,630,158	$18,066,735	$21,604,388	$25,246,089
Total overhead	$19,947,784	$20,113,541	$20,113,541	$20,113,541	$23,053,142	$23,457,067	$23,926,209	$24,404,733	$24,892,829
Program overhead	$16,105,784	$16,271,541	$16,271,541	$16,271,541	$11,800,620	$11,979,495	$12,219,085	$12,463,467	$12,712,736
Portfolio overhead	$3,842,000	$3,842,000	$3,842,000	$3,842,000	$11,252,522	$11,477,572	$11,707,123	$11,941,266	$12,180,092
Portfolio costs (non-admin)	$6,986,164	$7,063,719	$7,063,719	$7,063,719	$7,107,478	$7,249,628	$7,394,621	$7,542,513	$7,693,363
Total budget	$131,190,546	$133,606,917	$133,606,917	$133,606,917	$142,260,000	$148,822,200	$155,701,494	$162,913,517	$170,474,680
Overhead as % of Total	15.2%	15.1%	15.1%	15.1%	16.2%	15.8%	15.4%	15.0%	14.6%
CPI Factor % from 2019 [1]	0.0%	0.5%	4.9%	7.0%	9.2%	11.3%	13.6%	15.8%	18.2%

Exhibit J1.4