October 27, 2023

Ahmet Erdem
Senior Advisor
Ministry of Energy
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Dear Mr. Erdem,

Re: Consultation on the future of natural gas expansion and home heating affordability

We are writing on behalf of Environmental Defence and the Ontario Clean Air Alliance to provide joint comments on the future of natural gas expansion and home heating affordability. We applaud the Ontario Government for conducting this review of its programming and for seeking to improve home heating affordability. To achieve that important goal, we ask that the Ontario Government end the subsidy for natural gas expansion and redirect those funds to support the most cost-effective option for customers in phase III – all-electric heat pumps. We also ask that the Ontario Government cancel phase II, or at least give municipalities the option to redirect the funds of approved projects toward subsidies for electric heat pumps instead. These steps would result in far lower heating bills and benefit many more customers while also lowering greenhouse gas emissions.

Heat pumps save money

Background re heat pumps

For a very long time, methane gas was the cheapest way to heat homes. However, electric cold climate heat pumps are now much cheaper than gas for home heating.[1] Annual costs are lower because heat pumps are approximately three times more efficient than gas furnaces (or five times for ground-source heat pumps, also known as geothermal) and because customers can avoid paying monthly charges to Enbridge for use of its gas system.[2] Heat pumps are so efficient because they *move* heat instead of *converting* gas or electricity into heat. Standard gas and electric heating cannot surpass 100% efficiency, whereas heat pumps can be multiple times more

[1] Evidence of the Energy Futures Group in Ontario Energy Board ("OEB") File # EB-2022-0200, p. 23 (link); Dr. Heather McDiarmid, *An Analysis of the Financial and Climate Benefits of Electrifying Ontario's Gas-Heated Homes by Installing Air-Source Heat Pumps*, August 2, 2022, p. 11 (link); For the difference in costs with the latest gas prices, see Ontario Clean Air Alliance, *Heat Pump Calculator for New Gas Communities*, (link).
[2] National Resources Canada, *Heating and Cooling With a Heat Pump*, (link).

efficient – they can use 1 kW of electricity to move 3 kW of heat (or more) indoors. They can do this even in cold temperatures because, counterintuitively, there is still a great deal of heat energy in very cold air.[3]

Quantification of customer savings

As shown in the Discussion Paper, heat pumps are far cheaper than the methane gas alternative. In comparison to methane gas, electric heat pumps save customers in the range of $700 to $1,300 each year in gas expansion communities.[4] The actual savings are likely higher to the extent that the Discussion Paper does not account for the savings in cooling homes with cold climate heat pumps (which are more efficient than traditional air conditioners),[5] savings from avoiding fixed gas costs ($310 per year now, with Enbridge requesting an increase to $398 annually),[6] and the efficiency levels from the latest heat pumps (according to Natural Resources Canada, heat pumps are between 208% and 386% efficient in the climate region for Ottawa on average over the heating season).[7]

In addition, as detailed below, a number of expert reports have shown that:

- Electric heat pumps can save customers in the range of $20,000 in gas expansion communities on a lifetime basis including upfront and annual costs;[8]
- Electric heat pumps with electric backup are cheaper to operate than electric heat pumps with gas backup;[9] and
- The savings from electric heat pumps would likely triple in a future where the electricity system and gas system are both decarbonized.[10]

A report prepared by Dr. Heather McDiarmid concluded that customers in gas expansion areas stand to lose approximately $20,000 on average if they switch to gas instead of installing a high-

[3] National Resources Canada, *Heating and Cooling With a Heat Pump*, (link) ("It may be surprising to know that even when outdoor temperatures are cold, a good deal of energy is still available that can be extracted and delivered to the building. For example, the heat content of air at -18°C equates to 85% of the heat contained at 21°C. This allows the heat pump to provide a good deal of heating, even during colder weather.")
[4] Discussion Paper, p. 11.
[5] Dr. Heather McDiarmid, *An Analysis of the Financial and Climate Benefits of Electrifying Ontario's Gas-Heated Homes by Installing Air-Source Heat Pumps*, August 2, 2022, pp. 6-7 (link);
[6] Current fixed charges: Enbridge Rate Zone (link); calculation: 22.88 x 12 x 1.13; Requested fixed charges: Enbridge Evidence in OEB File # EB-2022-0200, Exhibit 8, Tab 2, Schedule 7, Attachment 2, Page 8 (link, PDF p. 759); calculation: $29.37 x 12 x 1.13.
[7] Natural Resources Canada, *Heating and Cooling With a Heat Pump* ("On a seasonal basis, the heating seasonal performance factor (HSPF) of market available units can vary from 7.1 to 13.2 (Region V). It is important to note that these HSPF estimates are for an area with a climate similar to Ottawa.") (link); Conversion between HSPF and seasonal Co-efficient of Performance: multiple HSPF by 0.293.
[8] Dr. Heather McDiarmid, *An Analysis of the Financial and Climate Benefits of Electrifying Ontario's Gas-Heated Homes by Installing Air-Source Heat Pumps*, August 2, 2022, p. 11 (link); For the difference in costs with the latest gas prices, see Ontario Clean Air Alliance, *Heat Pump Calculator for New Gas Communities* (link), which comes to $17,000 at the time of writing due to fluctuating gas prices; see also Evidence of the Energy Futures Group in OEB File # EB-2022-0200, p. 23 (link).
[9] See footnote 21 below and the paragraph of text associated therewith.
[10] See footnote 19 below and the paragraph of text associated therewith.

efficiency electric heat pump (over the lifetime of the equipment).[11] Dr. McDiarmid has researched the cost-effectiveness of heat pumps extensively and was accepted as an expert in the modelling of residential heating options by the Ontario Energy Board.[12] The savings she found in her report accounts for the upfront cost of the equipment and ongoing annual costs. Although the savings for an individual house will depend on individual characteristics, and the savings fluctuate with energy prices, the difference in costs is so high that heat pumps are almost always going to be cheaper than gas.[13] This is especially true in gas expansion communities where the surcharge applies.

A report prepared Chris Neme of the Energy Futures Group and accepted by the Ontario Energy Board as expert evidence reaches a similar conclusion regarding the savings from heat pumps.[14] He found that homeowners that electrify their space and water heating will save approximately $17,000 over the lifetime of their equipment even outside gas expansion areas.[15] This is a net present value that has discounted future savings, and therefore the gross savings are even higher.[16] For 2023, the annual energy bill savings are $683. By 2030, the annual energy bill savings arising from electrification of household fossil gas uses will rise to $1,134 due to the increasing carbon price alone.[17]

Mr. Neme's analysis is very robust. It has been tested through interrogatories and an oral hearing involving more than 30 intervenors at the Ontario Energy Board. The full underlying modelling and all assumptions have been disclosed. In addition, Mr. Neme conducted a detailed sensitivity analysis that explored the following factors: lower gas commodity prices, worse heat pump efficiency, ineligibility for government rebates, higher heat pump cost, and the need for an electrical panel upgrade. He also did not account for a number of factors improving the cost-effectiveness of heat pumps, such as access to federal $40,000 interest-free loans. As detailed in his report, electrification remains cost-effective in all of the scenarios. As summed up by Mr. Neme: the "conclusion that electrification is cost-effective for customers today is very robust."[18]

The consumer savings from electrification will likely substantially increase in a future where the electricity system and gas system are both decarbonized.[19] Mr. Neme used conclusions from the

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[11] Dr. Heather McDiarmid, *An Analysis of the Financial and Climate Benefits of Electrifying Ontario's Gas-Heated Homes by Installing Air-Source Heat Pumps*, August 2, 2022, p. 11 (link); For the difference in costs with the latest gas prices, see Ontario Clean Air Alliance, *Heat Pump Calculator for New Gas Communities* (link), which comes to $17,000 at the time of writing due to fluctuating gas prices; see also Evidence of the Energy Futures Group in OEB File # EB-2022-0200, p. 23 (link).
[12] Transcript Volume 5 in EB-2021-0002, p. 11 (link).
[13] The actual savings will fluctuate depending on building characteristics, energy prices, and assumptions such as equipment costs. For instance, the savings from heat pumps will decline if, for example, gas prices drop or if a customer requires an upgrade to their electrical panel for the heat pump (which costs approximately $2,000, per Evidence of the Energy Futures Group in OEB File # EB-2022-0200, p. 24 (link). On the other hand, savings from heat pumps will increase if gas prices increase, a house is heated with electric baseboards (because gas heating requires approximately $7,000 to add ducts whereas heat pumps can be installed without duct, per Enbridge, *Response to Board Staff Interrogatory 4 in EB-2022-0249*, Exhibit I.STAFF.4 (link, pdf page 23)), or a customer with oil heating is eligible for $10,000 in federal rebates (per Government of Canada, *Oil to Heat Pump Affordability Program* (link); Government of Canada, *Canada Greener Homes* Grant (link)).
[14] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 23 (link).
[15] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 23 (link).
[16] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 23 (link).
[17] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 23 (link).
[18] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 24 (link).
[19] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 25 (link).

IESO's Pathways to Decarbonization report and the cost of renewable natural gas ("RNG") to examine the impact on energy costs with decarbonized gas and electricity systems. He found that the energy cost savings from electrified home heating in a future with fully decarbonized systems would be three times the savings today.[20] That is because heating with decarbonized gasses such as RNG is far more expensive than heating with decarbonized electricity.[21]

Fully electrifying a home is also more cost-effective for Ontario households in comparison to using a hybrid heating system that relies on an electric heat pump coupled with a gas furnace for the coldest days.[22] That is primarily because backup heat is required only very infrequently and disconnecting from the gas system allows a customer to save $310 annually in fixed charges.[23] The savings from full electrification versus hybrid heating will increase if Enbridge is successful in its efforts to raise those charges to $398.25 annually[24] and increase the cost of gas at peak periods five-fold,[25] which presumably corresponds at least in part to the cold periods when backup gas would be used.

Furthermore, full electrification will likely become even more cost-effective versus hybrid heating in a future with fully decarbonized gas and electricity systems. As discussed above, the increase in cost for decarbonized gas outweighs the increase in cost for decarbonized electricity.[26]

Finally, a study led by energy expert Ralph Torrie for Corporate Knights came to consistent conclusions. He found that the average Ontario household would save approximately $814 annually with a heat pump instead of gas equipment.[27]

There is now no doubt that methane gas has been overtaken by fully electric cold climate heat pumps as the best way to achieve home heating affordability for Ontarians.

Gas expansion increases GHG emissions

Background re methane gas

Methane gas is a potent greenhouse gas that pollutes the environment and causes climate change when it is burned and when it leaks from hydraulic fracturing extraction sites, pipelines, storage

[20] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 25 (link). Furthermore, Mr. Neme identifies three additional factors that will even further improve the economics of electrification: (a) the ability of electrifying customers to avoid fixed gas charges; (b) increasing gas distribution rates as customers exit the system; and (c) additional investments to make up for the fact that RNG is not always carbon neutral.
[21] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 25 (link). As Mr. Neme explains, the savings from electrification increase because "[t]he incremental cost of RNG (relative to fossil gas plus a carbon tax) is simply much greater than the increase in the price of electricity that will be necessary to grow the electric grid so that it can serve electrified buildings."
[22] Hearing Transcript Vol. 5 in OEB File # EB-2022-0200, p. 172, ln. 17 to p. 174, ln. 7 (link).
[23] Enbridge Rate Zone (link); calculation: 22.88 x 12 x 1.13.
[24] Enbridge Evidence in OEB File # EB-2022-0200, Exhibit 8, Tab 2, Schedule 7, Attachment 2, Page 8 (link, PDF p. 759); calculation: $29.37 x 12 x 1.13.
[25] Enbridge Evidence in OEB File # EB-2022-0200, Exhibit 8, Tab 2, Schedule 7, Attachment 1, Page 9 (link, PDF p. 643); Exhibit 8, Tab 2, Schedule 7, Attachment 2, Page 8 (delivery increases from approximately 12 ¢/m³ to 68.3385 ¢/m³) (link, PDF p. 759) .
[26] See footnotes 19 to **Error! Bookmark not defined.** above, and the text associated therewith.
[27] Corporate Knights, *GREEN house effect: Calculate the savings from electrifying your home* (link).

facilities, and customer equipment. The combustion of methane gas alone is responsible for approximately one-third of Ontario's greenhouse gas emissions.[28] Heating homes and businesses with gas accounts for approximately 19% of Ontario's greenhouse gas emissions.[29] However, those figures account for combustion only – upstream leaks from extraction, storage, and pipelines add at least an additional 40% to the harmful climate impact (likely more if the latest science and measurements are used).[30]

Impacts of gas expansion

The expansion of the methane gas network in Ontario is completely counter to provincial, national, and international climate targets. The pipeline companies argue that heating with methane gas results in fewer greenhouse gas ("GHG") emissions compared to propane and oil. That is only true if one ignores both the upstream emissions from gas and the very low carbon footprint of the alternative to subsidized gas expansion – subsidized electric heat pump expansion.

As noted above, upstream leaks from extraction, storage, and pipelines add at least an additional 40% to the harmful climate impact of fossil gas based on the default values for Canada's Clean Fuel Standard.[31] The impact of upstream emissions is even greater if one focuses on the next twenty years, which many experts argue is critical when considering policies aimed at avoiding catastrophic climate change.[32] A tonne of methane is estimated to have 84 times the warming power of carbon dioxide over a 20-year period.[33]

The actual impacts are even worse still because upstream emissions are considerably higher than those recorded in national inventories, as acknowledged in Canada's own official National Inventory Report.[34] Studies cited in that report find that actual upstream emissions are roughly twice those indicated in the National Inventory Report.[35] Studies of downstream methane leaks

[28] Enbridge Evidence in OEB File #EB-2022-0200, Exhibit 1, Tab 10, Schedule 3, Page 2 (link).
[29] Dr. Heather McDiarmid, *An Analysis of the Financial and Climate Benefits of Electrifying Ontario's Gas-Heated Homes by Installing Air-Source Heat Pumps*, August 2, 2022, p. 8 (link).
[30] *Clean Fuel Regulations*, SOR/2022-140, Schedule 6, s. 8(d) (link, PDF p. 170); Exhibit L, p. 11 (link); EB-2020-0066, Exhibit JT1.7 (link, PDF p. 398); The default carbon intensity is 68 gCO2e/MJ for natural gas, this number can be broken out further to 48 gCO2e/GJ for emissions from end-use combustion, and 20 gCO2e/MJ related to upstream extraction, processing, transportation and distribution.
[31] *Clean Fuel Regulations*, SOR/2022-140, Schedule 6, s. 8(d) (link, PDF p. 170); Exhibit L, p. 11 (link); EB-2020-0066, Exhibit JT1.7 (link, PDF p. 398); The default carbon intensity is 68 gCO2e/MJ for natural gas, this number can be broken out further to 48 gCO2e/GJ for emissions from end-use combustion, and 20 gCO2e/MJ related to upstream extraction, processing, transportation and distribution.
[32] Exhibit N.M10-EGI-107(a) in OEB File #EB-2022-0200 (link, PDF p. 1).
[33] Environment and Climate Change Canada (link, Ex. K2.2, PDF p. 302).
[34] Canada's National Inventory Report (link, Ex. K2.2, PDF p. 6); Studies cited in the National Inventory Report suggesting that actual upstream emissions are roughly twice those reported in the National Inventory Report: KT9.5 (link); Exhibit KT9.6 (link). See also Exhibit N.M10.EGI.108, Attachment 2 (link, PDF p. 3). These discrepancies arise because the inventories are based on "industry self-reported bottom-up estimates" and there is "near scientific consensus that these self-reported bottom-up estimates are far below the actual emissions rates determined through top-down methodologies based on data collected from aircraft and satellites." Exhibit M10 (link, PDF p. 5).
[35] *Ibid.*

in cities across North America are also finding that actual top-down measurements detect far higher emissions in comparison to the bottom-up estimates used for official inventories.[36]

The latest science on the lifecycle emissions of fossil gas undermines any claims that gas expansion is good for the climate. Although some lifecycle emissions occur outside of Ontario, it would be irrational for Ontarians to say that we are reducing emissions when the actual impact on the climate is the opposite.

More importantly, the impacts of subsidized gas expansion need to be measured against the alternative – electric heat pumps. If gas expansion were to end, customers on oil and propane would be much more likely to switch to electric heat pumps instead as a way to reduce their energy costs. This is especially true if the Ontario Government were to redirect the subsidy for gas expansion to heat pumps. In comparison to this alternative, gas expansion results in far more GHG emissions.

Electric heat pumps are by far the best heating system for the climate. They greatly reduce GHG emissions because the large majority of Ontario's electricity system is decarbonized.[37] More importantly, when the grid is fully decarbonized, heat pumps will provide a 100% reduction in carbon emissions from space and water heating.

In addition, fully electrifying a home will result in considerably fewer carbon emissions in comparison to hybrid heating based on today's electricity generation mix.[38] And again, the carbon reduction benefits from full electrification (versus gas backup) are likely to increase in light of provincial and federal efforts to further decarbonize the electricity system.[39]

Finally, Ontario cannot assume that buildings can be decarbonized with low carbon gases. As noted above, this is a far more expensive option for customers because heating with decarbonized gas is much more expensive than heating with decarbonized electricity.[40]

But even putting price aside, low carbon gases cannot replace more than a tiny proportion of Ontario's current fossil methane use. The IESO, Canadian Biogas Association, and the Canada Energy Regulator have all estimated the RNG potential in Ontario to be in the range of 2.5% of our fossil methane gas use.[41] In addition, this scarce resource will be needed for the hardest-to-decarbonize sectors. Hydrogen can only be blended into methane gas pipelines at up to 7.3% by energy content (which is 20% by volume, and even those low levels may still be unsafe).[42] If the

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[36] Exhibit N.M10.EGI.108, Attachment 2 in OEB File #EB-2022-0200 (link, PDF p. 3); See also Exhibit K2.2, Tab 3 (link, PDF p. 12).
[37] Dr. Heather McDiarmid, *An Analysis of the Financial and Climate Benefits of Electrifying Ontario's Gas-Heated Homes by Installing Air-Source Heat Pumps*, August 2, 2022, p. 8 (link).
[38] Exhibit J18.7, p. 4 (link).
[39] Canada 2030 Emissions Reduction Plan, p. 83 (link, Ex. K2.2, PDF p. 318).
[40] Evidence of Chris Neme, May 11, 2023 (updated May 30th), Ex. M9, p. 25 (link). Furthermore, Mr. Neme identifies three additional factors that will even further improve the economics of electrification: (a) the ability of electrifying customers to avoid fixed gas charges; (b) increasing gas distribution rates as customers exit the system; and (c) additional investments to make up for the fact that RNG is not always carbon neutral.
[41] IESO Correspondence (link, Ex. K2.2, PDF p. 221); IESO Pathways to Decarbonization Study, Appendix B, p. 27 (link, Ex. K2.2, PDF p. 221); Hearing Transcript Vol. 2 in OEB File #EB-2022-0200, p. 106, lns. 13-24 (link); Hearing Transcript Vol. 2, p. 100, lns. 1-5 (link); Canadian Biogas Association study, p. 71 (link, Ex. K2.2, PDF p. 184); cited by Guidehouse in Exhibit I.1.10-ED-35 (link, Ex. K2.2, PDF p. 99); Hearing Transcript Vol. 5, p. 176, ln. 3 to p. 177, ln. 8 (link).
[42] Exhibit J2.11 (link, PDF p. 30).

RNG potential is very optimistically assumed to be 5% of current fossil methane gas consumption (e.g. assuming technological breakthroughs and ignoring price issues), and hydrogen is blended in at 7.3% by energy content, that means that hydrogen is only able to replace 0.37% of the current fossil methane gas consumption in a decarbonized gas system.[43] This is in addition to other major barriers to decarbonizing a significant portion of our buildings with gas.[44]

Expanding the gas system is clearly inconsistent with a decarbonized future, which is a problem for both environmental and financial reasons. Investing in infrastructure that will soon be redundant is not prudent.

Municipalities and customers are being misled

One might ask the following question: if heat pumps are so cost-effective, why are customers still installing gas furnaces and some municipalities still seeking gas expansion? This is in part because pipeline companies have been misleading the public and municipalities regarding the benefits of gas expansion. For instance, they have been providing materials to the public and municipalities stating that gas is the cheapest way to heat homes, and have been declining to share important information regarding alternatives. Environmental Defence and the Ontario Clean Air Alliance are part of a coalition that has applied to the Competition Bureau for an inquiry into these deceptive marketing practices.[45]

In addition, it simply takes time for society to learn that gas is no longer the cheapest way to heat homes. A poll by Abacus Data commissioned by Environmental Defence found that awareness of heat pumps and the incentive programs to promote them are low.[46] However, this is changing. It takes time for knowledge to spread, and the cost-effectiveness of heat pumps is a relatively recent development driven by the following factors:

- **Improved cold climate performance:** In the past, heat pumps were inappropriate for our cold winters. Some contractors are not aware that this has changed. Cold climate heat pumps have high performance down to low temperatures (many down to -30°C). Even today, a standard cold climate heat pump can provide 100% of the heat in a Toronto home throughout a typical winter without supplemental heat.[47] But centrally-ducted heat pump units sold today also include a simple and cheap electric coil that fits into the air handler (i.e., blower fan unit) in the basement for supplemental heat for extremely cold days, just in case. The technology continues to improve, and the best units have high heating capacities and efficiency levels in the range of 200% even at -30°C.[48]

[43] Calculation: 5% x 7.3% = 0.037%.
[44] Submissions of Environmental Defence, September 19, 2023, p. 4-20 (link).
[45] Competition Act Application, June 2023, p. 6 (link).
[46] Abacus Data Poll, Ontario Perspectives on Clean Electricity, July 2023 (link).
[47] Guidehouse Heat Pump Study for Enbridge Gas, p. 10 (link, Ex. K2.2, PDF p. 285); This recent study prepared by Guidehouse for Enbridge shows that a cold climate heat pump can provide 100% of the heating for a Toronto home with a heating load of 2.5 tons. For Toronto homes that are larger or more leaky, supplementary electric resistance heating is forecast to only be required for 1 hour each year. The analysis is based on a standard cold climate heat pump as opposed to a top-of-the-line unit.
[48] Exhibit J18.7 in OEB File # EB-2022-0200 (link).

- **Efficiency:** Heat pump efficiency has improved with advancements, such as variable speed compressors, which make them cheaper to operate both for heating and cooling.

- **Rebates:** Customers can now receive significant rebates and interest-free loans to purchase a heat pump, which were not previously available.

- **Carbon price:** By 2030, the carbon price on gas will equal 32.40 cents/m^3.[49] By comparison, that amounts to over *three times* the price charged by Enbridge for methane gas in Toronto in January of 2020 (10.19 cents/m^3).[50]

Finally, the current gas expansion program parameters skew incentives towards gas. Municipalities can achieve financial incentives for gas options only, which cannot be put towards electric heat pumps. If municipalities had a real choice, they would certainly want to save their residents more money and reach a greater number of those residents, which would be possible by diverting subsidies to heat pumps.

Lower energy bills for all customers

Redirecting gas expansion funding to support heat pumps would lower energy bills for the customers in the gas expansion areas *and also lower energy bills for the gas customers that provide the subsidy*.

For customers in gas expansion areas, the subsidy would provide far greater benefits if it were directed towards heat pumps. Take, for example, the project planned for Brockton. It is forecast to connect 423 customers with a subsidy from the gas expansion program of $48,085.11 per customer. That subsidy will merely build the pipeline down the street. It will not help customers to change their existing equipment over to methane gas. If the funding was redirected to heat pumps, it could *fully cover* the costs for *far more customers* to switch to cold climate heat pumps when combined with federal incentives.[51] The below table summarizes the comparison of benefits for consumers as between a subsidy for gas pipelines and the same dollars being used to subsidize heat pumps.

[49] Enbridge, *Federal Carbon Charge* (link).
[50] OEB, *Historical Natural Gas Rates* (link).
[51] The full subsidy is $20,340,000.

Customer Benefits Comparison Summary - Brockton		
	Subsidy for Gas Pipeline	**Subsidy for Heat Pumps**
Customers who benefit	423	2,034 (at $10k/customer)[52]
Upfront costs	Homeowner pays full cost of converting to new heating fuel	Conversion costs could be completely covered[53]
Annual heating costs - 2023	$2,100	$1,400[54]
Annual heating costs - 2030	$2,850	$1,700[55]

Even though it may be counterintuitive to fund electric heat pumps through a program funded through gas rates, it would actually benefit existing gas customers. That is because the gas expansion projects are to be funded partly by future revenue from customers who attach to the new pipelines. It is very likely that fewer customers will actually connect than forecast as they learn that heat pumps are more cost-effective, especially if Enbridge is prevented from continuing to provide misleading marketing materials. When this occurs, existing gas ratepayers will be on the hook for the revenue shortfalls.

For example, the Brockton project is supported in part by a forecast of $20 million in revenue from new customers over the last 30 years of the project (after the rate stability period), from 2034 to 2063.[56] If fewer customers connect than forecast, or if customers subsequently leave the system, there will be a revenue shortfall that existing customers will be on the hook to cover. That could amount to many millions of dollars of additional subsidy from existing gas customers. They would be much better off providing incentives for heat pumps as that would be a known and a fixed amount and would not involve the risks that are inherent in these gas expansion projects.

Finally, redirecting these funds to heat pumps would be consistent with existing Ontario Government policies. The core of Ontario's energy policy is to lower energy costs. Its policy is fuel agnostic. For example, the Minister of Energy has directed the OEB to pursue lower energy bills whether that be through more efficient gas *or electric equipment*.[57] This direction was made in the context of gas demand-side management and is therefore supportive of the use of funds from gas rates for electric equipment where this will lower energy bills. There have been significant changes since the gas expansion program was first introduced. It is now abundantly clear that Ontario's policy of lowering energy costs is best served by shifting this funding to support heat pumps.

[52] The number of customers depends on the amount of the incentive. The available funds are $20,340,000.
[53] The subsidy from this initiative could be combined with federal incentives.
[54] Per the Discussion Paper, p. 11.
[55] Per the Discussion Paper, p. 11.
[56] EB-2022-0246, Exhibit E, Tab 1, Schedule 1, Attachment 1, Page 1 (link, PDF p. 61); Calculation: $676,000 in annual forecast revenue multiplied by 30 years.
[57] Mandate Letter to the OEB, November 15, 2021, p. 3 (link) ("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.").

Phase II

We also ask that the Ontario Government cancel phase II, or at least give municipalities the option to redirect the funds for approved projects toward subsidies for electric heat pumps instead. There is no good reason to prevent municipalities from using these funds for heat pumps. Opening up the eligibility immediately would give municipalities more choice, save their residents far more money, and reduce costs and risks for existing ratepayers. It is a win-win step that should be implemented today.

There is also a risk that phase II could fail without further intervention. Costs for pipeline construction have greatly increased since the subsidy amounts were set. In addition, heat pumps have become even more cost-effective, which jeopardises the future revenue streams that are needed to support those projects. These developments have already resulted in decisions to scale down projects and significant delays. It seems likely that some projects will never go forward. It would be far better to adjust phase II now to allow the funding to be redirected to heat pumps, which could save endangered projects and help to avoid dissatisfied municipalities.

Conclusion

Ontarians are struggling with inflation and cost-of-living pressures. This includes struggles with the high cost of fossil methane gas heating. Those costs are only predicted to increase as the price of gas, the price of carbon pollution, and the price of gas distribution increase. The Ontario Government is committed to helping Ontarians make ends meet. In this context, that requires that the funds set aside for gas expansion be redirected to heat pumps. This small step could help many more Ontarians, save them far more in both upfront and ongoing annual energy costs, better protect existing gas ratepayers, and help us achieve our GHG emissions reductions targets.

Thank you for considering these comments. Please contact us if you have any questions regarding the above.

Jack Gibbons
Chair
Ontario Clean Air Alliance

Keith Brooks
Programs Director
Environmental Defence