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Re: ERO # 019-8307 - Proposed Amendments to the Ontario Energy Board Act, 1998 to provide the government with the authority to ensure fair and informed decision-making at the OEB to foster affordable communities

Mr. Motluk:

As health organizations, we are acutely aware of the threats that climate change poses to human health. We are commenting on the proposed amendments to the *Ontario Energy Board Act* since they will ensure ratepayers continue to subsidize connecting new buildings to gas infrastructure precisely when it is imperative they transition away from fossil fuels to electric heating systems. This policy will lock Ontario into unnecessary carbon emissions over coming decades, while increasing energy costs for residents and ratepayers in Ontario and perpetuating the well established health impacts associated with the production, and consumption, of natural gas.

Supporting electrification measures in buildings, and ending subsidies that connect buildings to gas lines, is perhaps the most common-sense climate mitigation measure the province could champion. Electric heat pumps are now a less expensive heating option than gas for most homes in Ontario and are continually improving both in terms of cost and performance.¹ Moreover, technologies like heat pumps provide a series of health benefits by reducing air pollution and cooling buildings during summer months.

Background - Climate and Health

¹ Canadian Climate Institute, 2023. "[Heat Pumps Pay Off - Unlock Lower-Cost Heating and Cooling in Canada](#)".

Climate change is a fundamental threat to human health and is widely acknowledged as the most significant public health challenge this generation faces. Climate change is already threatening the lives, and harming the physical and mental health, of people across Canada, with floods, heat waves, wildfires, droughts, and infectious diseases.² These threats are significant. The World Health Organization projects that between 2030 and 2050, 250,000 people will die each year due to the impacts of climate change on diseases like malaria and coastal flooding. By 2050, they estimate that 200 million people a year could need international humanitarian aid as a result of the impacts of climate change.³

Already, between 570 and 2,700 people in Canada are dying prematurely each year because of the harmful impacts of wildfire smoke.⁴ The Ontario Government's own *Climate Change Impact Assessment* predicts that climate change will cause significant harm to agricultural productivity (e.g. crop failure and livestock fatalities) in this province; that all natural systems in Ontario would fall in the high risk category by mid-century, and that all these impacts would amplify existing social disparities and inequities.⁵ These are impacts that are costly to all residents and taxpayers in Ontario; costs that demand aggressive emissions reductions by all levels of government.

Increasing Emissions

Buildings have a large role to play in Ontario's path to net-zero. They are the third largest source of carbon emissions in this province and responsible for 24% of Ontario's total emissions.⁶ This portion is even larger for cities and represents 46% of the emissions in the GTHA.⁷ Hence, new buildings present a significant opportunity to reduce future emissions.

The proposed legislation will take the province in the opposite direction. It will allow Enbridge Gas to reinstate a ratepayer subsidy which artificially lowers the cost of connecting new buildings to gas lines (i.e. \$4,221 per home on average). It will do so by allowing the province to intervene on the revenue horizon Enbridge has to repay the upfront cost of connecting new builds to gas infrastructure. Whereas Enbridge has proposed a 40 year revenue horizon, the Ontario Energy Board (OEB) determined this

² Public Health Agency of Canada, 2022. "[Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2022: Mobilizing Public Health Action on Climate Change in Canada](#)".

³ World Health Organization, 2023. "[Fact Sheet: Climate Change](#)".

⁴ Health Canada, 2022. "[Health of Canadians in a Changing Climate: Advancing Our Knowledge for Action](#)". pg. 21.

⁵ Climate Risk Institute (prepared for the Ontario Ministry of the Environment, Conservation and Parks), 2023.

"[Ontario Provincial Climate Change Impact Assessment Technical Report](#)".

⁶ Office of the Auditor General of Ontario, 2020. "[Reducing Greenhouse Gas Emissions from Energy Use in Buildings 2020 Value-for-Money Audit](#)".

⁷ The Atmospheric Fund, 2023 "[Carbon Emissions Inventory Report 2022](#)".

horizon is “not responsive to the energy transition and increases the risk of stranded or underutilized assets.”⁸ Instead the OEB determined these costs should be paid upfront (i.e. no revenue horizon) and that Enbridge should concentrate capital expenditures on maintaining its current infrastructure as the province decarbonizes.

Subsidizing these gas lines will lock the province into unnecessary emissions when the province desperately needs to position for net-zero. When a building connects to gas, this locks the province into emissions for the lifetime of that gas heating system (i.e. 15 - 18 years). If the province achieves its goals of building 1.5 million new homes, and those homes are built with gas as the heating option, the province will be locking in over 100 million tonnes (MT) of carbon pollution (CO₂e) over the lifetime of the new equipment.⁹ This is equivalent to two-thirds of the province's current annual emissions from all sources.

These emissions estimates do not include the fugitive methane emissions involved in the production and distribution of gas — which are significant. Emerging literature demonstrates gas infrastructure in Canada leaks between 1.5 to 2 times more methane than is currently being reported to national inventories.¹⁰ These leaks have significant impacts on climate warming given methane's potency as a greenhouse gas. The Atmospheric Fund estimates that current leakage rates for gas consumed in Ontario doubles the overall life-cycle emissions of consuming gas — which makes using gas similar to using coal, from a carbon emissions perspective.¹¹

Impedes Electrification and Increases Costs for Home-owners

Subsidizing gas connection lines will impede the energy transition needed, will increase the cost of energy for Ontario residents, and will result in stranded assets and wasted resources. In their report to the Energy Minister, the province's own Electrification and Energy Transition Panel reports that it's doubtful natural gas could be replaced with low-carbon fuels; that customers are likely to disconnect from gas since heat pumps are increasingly the more affordable home heating option; and that continuing to expand gas infrastructure for home heating poses significant risk to customers, investors, and public finances.¹²

⁸ Ontario Energy Board, 2023. [“Decision and Order: Enbridge Gas Inc. Application for 2024 Rates – Phase 1”](#).

⁹ Environmental Defence Canada, 2024. “Submission to ERO Posting 019-8307”.

¹⁰ Chan et. al. 2020, [“Eight-Year Estimates of Methane Emissions from Oil and Gas Operations in Western Canada Are Nearly Twice Those Reported in Inventories”](#).

¹¹ The Atmospheric Fund, 2020. [“Fugitive Methane: New Guidelines to Determine Need to Curb Methane Emissions in Ontario”](#).

¹² Electrification and Energy Transition Panel of the Ontario Energy Ministry, 2023. [“Ontario's Clean Energy Opportunity”](#).

The proposed legislation will allow Enbridge to ignore these concerns and invest \$1.3 billion over the next five years on new customer connections. This is an average of \$4,421 per home that ratepayers will have to pay through increased energy rates.¹³ That sum could nearly cover the cost of purchasing and installing a standard heat pump which averages between \$5,000 and \$9000.¹⁴

Middle and low income households are at risk of shouldering these costs over the long term. As customers increasingly disconnect from gas and opt for heat pumps instead, Enbridge will need to recover these past costs from an increasingly shrinking customer base, which presents the risk of a utility death spiral.¹⁵ Given the high upfront costs of switching to electric heating, middle- and low-income households will be the last to make the switch, which means they will be disproportionately impacted, and forced to pay for these gas network costs.¹⁶

This subsidy will impede real solutions for the energy transition like heat pumps. According to modeling by the Canadian Climate Institute, standard heat pumps with electric back-up are currently the most cost effective option for the majority of homes in Canada. Many other modeling exercises—including those from Natural Resources Canada—yield even stronger results for heat pumps.¹⁷ ¹⁸ Given these benefits, policy-makers recommend governments at all levels require non-polluting, high efficiency heating and cooling in new buildings where they are more cost-effective.¹⁹ Subsidized gas connections directly contradict this sensible recommendation. Without the subsidy, developers would pay the full cost of installing gas lines and many would simply opt to outfit homes with electric heating systems.

There are no viable low-carbon alternative fuels that will replace natural gas. The gas industry claims it can decarbonize significantly by providing low-carbon fuels, like renewable natural gas and green hydrogen, through its gas networks. Renewable natural gas's feasible potential is only about 2.5% of Ontario's total gas consumption,²⁰ only 3% Canada-wide,²¹ and not considered a realistic replacement for conventional gas by the IESO.²² Hydrogen is a slightly more complicated case, but no more promising.

¹³ Ontario Energy Board, 2023. "[Decision and Order: Enbridge Gas Inc. Application for 2024 Rates – Phase 1](#)".

¹⁴ Canadian Climate Institute, 2023. "[Heat Pumps Pay Off - Unlock Lower-Cost Heating and Cooling in Canada](#)".

¹⁵ Ontario Energy Board, 2023. "[Decision and Order](#)".

¹⁶ Electrification and Energy Transition Panel, 2023. "[Ontario's Clean Energy Opportunity](#)".

¹⁷ Canadian Climate Institute, 2023. "[Heat Pumps Pay Off](#)".

¹⁸ Natural Resources Canada, 2022. "[Cold-Climate Air Source Heat Pumps: Assessing Cost Effectiveness. Energy Savings and Greenhouse Gas Emission Reductions in Canadian Homes](#)".

¹⁹ Canadian Climate Institute, 2023. "[Heat Pumps Pay Off](#)".

²⁰ Torchlight Bioresources, 2020. "[Renewable Gas \(Biomethane\) Feedstock Potential in Canada](#)".

²¹ Canada Energy Regulator, 2019 "[Canada's Energy Future 2019](#)".

²² Independent Electricity Systems Operator, 2022 "[Pathways to Decarbonization](#)" pg. 33.

Due to its different molecular structure, it would crack, corrode, and leak from existing pipelines meant for natural gas.²³ In addition, recent studies demonstrate that it is only safe to transport hydrogen-blended gas with a composition that is less than 5% hydrogen.²⁴ And even if industry were able to safely transport hydrogen through the existing pipeline infrastructure, it could take up to six times more electricity to heat a home with hydrogen than it would with a heat pump, making home heating an exceptionally poor use of this energy dense fuel.²⁵

Health Co-Benefits of Electrification

Heat pumps provide affordable, efficient cooling which will help to mitigate the health impacts of extreme heat. Research demonstrates that temperatures above 26 degrees celsius are significantly associated with adverse health implications.²⁶ These include: skin rashes and heat stress, increased hospital admissions for cardiovascular and respiratory conditions, adverse reproductive outcomes, increases in aggressive behaviour, and increased the risk of premature deaths. In Canadian cities, heat events have been shown to increase premature death in Canadian cities by 2-16% depending on how they are defined.²⁷ Notably, these rates are significantly higher among older populations given their risks, and low-income populations given lack of air conditioning, proximity to urban heat islands, and higher building density.²⁸

This legislation will cause energy rate increases which disproportionately impact the same groups most vulnerable to the impacts of extreme heat. The province should instead be directing funds to ensure that low-income homes can connect to heat pumps, which would provide access to affordable indoor cooling as extreme heat events become more frequent and devastating.

Direct Health Implications

The pollution generated by producing and consuming gas also has well-established health consequences. Much of the gas used in Ontario is extracted via hydraulic fracturing.²⁹ Studies of populations living near fracking operations for oil

²³ Gençer, Emre. 2023. "[Can we use the pipelines and power plants we have now to transport and burn hydrogen, or do we need new infrastructure?](#)" MIT Climate Portal.

²⁴ International Energy Association, 2019. "[Current Limits on Hydrogen Blending in Natural Gas Networks and Gas Demand per Capita in Selected Locations](#)".

²⁵ Cebon, David. 2022. "[Hydrogen for heating? A comparison with heat pumps](#)".

²⁶ Kenny G. et al. 2019. "[Towards Establishing Evidence-Based Guidelines on Maximum Indoor Temperatures during Hot Weather in Temperate Continental Climates](#)".

²⁷ Health Canada, 2022. "[Health of Canadians in a Changing Climate: Advancing Our Knowledge for Action](#)".

²⁸ Perrota, Kim. 2023. "[Climate Change, Population Health, and Health Equity](#)".

²⁹ Canadian Association of Physicians for the Environment, 2020. "[Fractures in the Bridge: Unconventional \(Fracked\) Natural Gas, Climate Change and Human Health](#)".

and gas in the US have identified more than 30 different negative health outcomes including: adverse impacts on pregnancy; birth outcomes such as high-risk pregnancy, preterm births and possibly low birth weight; and asthma exacerbations.³⁰

Recent studies have also established strong empirical linkages between the indoor air pollution caused by gas stoves, and adverse respiratory outcomes. A recent meta-analysis of 41 studies between 1977 and 2013, demonstrates that gas stoves increase the risk of developing childhood asthma by 42% via increasing indoor nitrogen dioxide levels.³¹ Other research has demonstrated that gas stoves leak toxic chemicals into the home through unburned gas. Researchers have identified 21 different hazardous air pollutants known as volatile organic compounds (VOCs) in consumer-grade gas³² and demonstrated that gas stoves leak between 0.8% - 1.3% of the gas they burn — much of which occurs when the stoves are off.³³

Research on other gas appliances—like gas furnaces, water heaters, and fireplaces—is nascent, but early indications show that they may be an important contributor to outdoor air pollution. These appliances emit significant amounts of nitrogen dioxide, which is one of the key chemical precursors of smog and has its own deleterious impacts on respiratory health, particularly amongst children and people with pre-existing respiratory conditions.³⁴ Recent research from California shows that gas appliances create 15,900 tons of nitrogen dioxide in that state, and removing these emissions would result in 354 fewer deaths, 596 fewer cases of acute bronchitis, and 304 fewer cases of chronic bronchitis annually in California.³⁵

Conclusion

Climate change is a fundamental threat to human health and addressing this threat means phasing out fossil fuels. Ontario has an opportunity to mitigate climate change, lower energy bills, and make the province more resilient in the face of extreme heat. The amendments proposed to the *Ontario Energy Board Act* fail to meet this challenge and, instead, override the sound, evidence-based decision-making from Ontario's energy regulator. They will expand Ontario's gas line infrastructure, connect new buildings to fossil fuels, and make ratepayers pay for these expansions over a 40-year revenue horizon—far after the province needs to phase out gas as a source of heating.

³⁰ CAPE, 2020. "[Fractures in the Bridge](#)"

³¹ Weiwei Lin, Bert Brunekreef, Ulrike Gehring, 2013. "[Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children](#)".

³² Michanowicz, D. et al 2022. "[Home is Where the Pipeline Ends: Characterization of Volatile Organic Compounds Present in Natural Gas at the Point of the Residential End User](#)".

³³ Jordan, R. 2022. "[Climate and health impacts of natural gas stoves](#)," Stanford Doerr School of Sustainability

³⁴ Health Canada, 2015. "[Residential Indoor Air quality Guidelines: Nitrogen Dioxide](#)".

³⁵ UCLA Fielding School of Public Health Department of Environmental Health Sciences, 2020. "[Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California](#)".

All the while, they will discourage Ontarians from adopting less expensive electric alternatives needed to achieve our emission reduction responsibilities. We urge the province to reconsider this misguided legislation.

Sincerely,

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