

ONTARIO ENERGY BOARD

EB-2020-0181

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 2021 ICM funding;

Submissions of Environmental Defence

Enbridge's 2021 ICM Application

March 14, 2021

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Summary

Enbridge is seeking over \$160 million in incremental capital module (“ICM”) funding in this proceeding.¹ Environmental Defence submits that Enbridge has not met its burden to establish the reasonableness of the 2021 capital budget forecast that underlies its ICM funding requests. In particular, Enbridge has declined to conduct integrated resource planning despite repeated Board orders that it do so. It has also declined to disclose the demand forecast underlying its capital budget, let alone justify that forecast and appropriately consider potential impacts of the drive to decarbonize space and water heating on gas consumption. In the absence of these things, Enbridge cannot say that it has established the reasonableness or prudence of its capital budget forecast.

Therefore, Environmental Defence requests that any decision on the reasonableness of Enbridge’s 2021 budget forecast be deferred until Enbridge’s next rebasing application or be made provisional and subject to future adjustments in the next rebasing application.

The amount of ICM funding that Enbridge may apply for is partly a function of Enbridge’s 2021 capital budget forecast. A lower budget would directly translate into a lower amount of allowable ICM funding. Enbridge has the burden of establishing the reasonableness of its budget figure as it is a critical variable in establishing the relief it seeks in this proceeding. Although this proceeding is not intended to provide the same kind of detailed review of Enbridge’s Utility System Plan (“USP”) and Annual Maintenance Plan (“AMP”) as will occur at rebasing, that does not relieve Enbridge from justifying the capital budget at all whatsoever. It has not met its burden in this regard.

Integrated resource planning disregarded

Enbridge has not met its burden to justify its 2021 capital budget in part because it has breached Board directions to conduct integrated resource planning (“IRP”) at the preliminary stages of project development. Had it followed those directions, the 2021 budget forecast may well have been smaller through avoided, deferred, or downsized projects.

Enbridge acknowledges that it has not conducted integrated resource planning as part of its 2021 capital budget planning process.² In addition, Enbridge declined to answer interrogatories from various intervenors that attempted to probe the degree to which IRP might have resulted in a lower capital budget.³ By choosing not to answer questions relating to the appropriateness of its 2021 budget, Enbridge has not met its burden in this case.

Enbridge seems to argue that it is not required to conduct IRP in its capital planning processes until the ongoing IRP proceeding is complete. However, this is the opposite of what the OEB has clearly directed. In the recent London Lines case, Enbridge similarly justified its lack of IRP

¹ EB-2020-0181, Exhibit B, Tab 2, Schedule 1.

² Exhibit I.ED.9 & Exhibit I.SEC.21.

³ Exhibit I.ED.6, Exhibit I.ED.9, Exhibit I.ED.11, Exhibit I.PP.9, Exhibit I.VECC.11.

analysis on the ongoing IRP framework proceeding, arguing that it would detail the appropriate scope of alternatives.⁴ The OEB rejected this argument, finding as follows:

However, despite the OEB approval of the application for leave to construct this Project, the OEB agrees with Environmental Defence that Enbridge Gas has an obligation to conduct a more rigorous Integrated Resource Planning assessment at the preliminary stage of projects development in future cases. As OEB staff also notes the failure to present detailed analyses makes it unlikely that Enbridge Gas would select an alternative including DSM or other non-build project option. **The OEB acknowledges that more direction is likely to be provided to Enbridge Gas in future leave to construct projects as part of the ongoing IRP proceeding. In the interim, however, the OEB believes that all parties would be assisted if Enbridge Gas would, in the future, undertake in-depth quantitative and qualitative analyses of alternatives** that specifically include the impacts of DSM programs on the need for, or project design of facilities for which Enbridge Gas has applied for leave to construct.⁵

The OEB's IRP framework proceeding is no excuse to ignore IRP in the interim. Doing so directly contradicts the OEB's decision in the London Lines case and in many other previous cases.

Previous OEB directions re IRP

The Board has directed Enbridge to practice Integrated Resource Planning many times over the past 30 years.⁶ These directions date back to the OEB's IRP proceeding in the early 1990s.⁷ More recently, in its 2014 decision on Enbridge's GTA pipeline case, the Board directed Enbridge "to provide a more rigorous examination of demand side alternatives, including rate options, in all gas leave to construct applications."⁸ The Board added further detail later that year in its DSM Framework:

As part of all applications for leave to construct future infrastructure projects, the gas utilities must provide evidence of how DSM has been considered as an alternative **at the preliminary stage of project development.**

In order for the gas utilities to fully assess future distribution and transmission system needs, and to appropriately serve their customers in the most reliable and cost-effective manner, the Board is of the view that **DSM should be considered**

⁴ EB-2020-0192 (London Lines), OEB Decision and Order, January 28, 2021, p. 17.

⁵ EB-2020-0192 (London Lines), OEB Decision and Order, January 28, 2021, p. 20.

⁶ E.g. EBO 169-III, *Report of the Board on the Demand-Side Management Aspects of Gas Integrated Resource Planning*, July 23, 1993, pp. 1-4; Ontario Energy Board, *Decision in EB-2012-0451/0433*, January 30, 2014, p. 46-47 (GTA Pipeline); ⁶ Ontario Energy Board, *DSM Framework*, December 22, 2014, p. 35-36; ⁶ EB-2018-0097, Decision and Order, January 3, 2019, pp. 6-7 (Bathurst Reinforcement).

⁷ EBO 169-III, *Report of the Board on the Demand-Side Management Aspects of Gas Integrated Resource Planning*, July 23, 1993

⁸ Ontario Energy Board, *Decision in EB-2012-0451/0433*, January 30, 2014, p. 46-47 (GTA Pipeline).

when developing both regional and local infrastructure plans. ...The Board expects the gas utilities to consider the role of DSM in reducing and/or deferring future infrastructure investments far enough in advance of the infrastructure replacement or upgrade so that DSM can reasonably be considered as a possible alternative. If a gas utility identifies DSM as a practical alternative to a future infrastructure investment project, it may apply to the Board for incremental funds to administer a specific DSM program in that area where a system constraint has been identified.⁹

In 2018, the Board again directed Enbridge to do better. The Board's DSM Mid-Term Review report called on Enbridge to develop "rigorous protocols to include DSM as part of their internal capital planning process" and that this "include a comprehensive evaluation of conservation and energy efficiency considered as an alternative to reduce or defer infrastructure investments as part of all leave to construct applications."¹⁰ The full passage is as follows:

Stakeholders indicated reservations in the usefulness of the transition plan provided by the natural gas utilities. The OEB agrees that although the progress made is at an early stage, the transition plan does not advance the understanding of the role and impact that energy conservation can play in deferring or avoiding capital projects. Currently, leave to construct applications do not include a description of the DSM alternatives considered to help avoid and/or defer the proposed capital project. The natural gas utilities should continue to develop rigorous protocols to include DSM as part of their internal capital planning process. This should include a comprehensive evaluation of conservation and energy efficiency considered as an alternative to reduce or defer infrastructure investments as part of all leave to construct applications.¹¹

In the 2019 Bathurst Reinforcement decision, the Board again directed Enbridge "to provide sufficient and timely evidence of how DSM has been considered as an alternative at the preliminary stage of project development."¹² It also warned Enbridge that it "faces the risk that future application will be deemed incomplete."¹³

Enbridge's position in this case is contrary to these past directions. As noted above, in 2014 the OEB explicitly said that "DSM should be considered when developing both regional and local infrastructure plans."¹⁴ Enbridge has not done this in the infrastructure plans on which its ICM request is based.

⁹ Ontario Energy Board, *DSM Framework*, December 22, 2014, p. 35-36.

¹⁰ EB-2017-0127/0128, *Report of the Ontario Energy Board, Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors (2015-2020)*, November 29, 2018, p. 20-21.

¹¹ *Ibid.* (emphasis added).

¹² EB-2018-0097, Decision and Order, January 3, 2019, pp. 6-7.

¹³ *Ibid.*

¹⁴ Ontario Energy Board, *DSM Framework*, December 22, 2014, p. 35-36.

Remedy: deferred or provisional decision

This ICM proceeding is not the appropriate venue to determine specific IRP process details. We are not asking that the OEB do so. We simply argue that it was unreasonable for Enbridge to have detailed **no** integrated resource planning as part of its capital planning for 2021 and to decline to answer interrogatories on the subject.¹⁵ As a result, Enbridge has not met its burden to establish the reasonableness of its 2021 budget.

Unfortunately, we do not know how much the 2021 capital budget could have been reduced or deferred through appropriate IRP. This is in part due to Enbridge's decision to decline to answer questions relating to IRP. In this context, Environmental Defence asks that the OEB defer its decision on the reasonableness of the 2021 capital budget or make any such decision provisional and subject to adjustment in the next rebasing application.

Demand forecast withheld

Enbridge has not met its burden to justify its capital budget in part because it has not even disclosed the demand forecast underlying that budget, let alone justified that demand forecast. Environmental Defence explicitly requested a copy of Enbridge's demand forecasts underlying its USP and AMP.¹⁶ Enbridge declined to provide a copy, arguing that this was out of scope. Environmental Defence again requested this information at the technical conference after the OEB confirmed that Enbridge must be prepared to address how its ICM requests are informed by the USP and AMP.¹⁷ Enbridge again declined to provide any demand forecasts.

Environmental Defence considered commencing a motion but decided not to. It is Enbridge's burden to establish the reasonableness of its ICM request. As noted above, this is a function in part of its 2021 budget forecast. By choosing not to answer questions relating to the appropriateness of its 2021 budget, Enbridge has not met its burden in this case.

Enbridge's interpretation of the scope of this proceeding does not accord with the OEB's orders. Procedural Order #3 stated that: "The intent is not to undertake the same detailed assessment of the USP and AMP that would normally occur in a rebasing application (cost of service or Custom IR)." A request for demand forecasts is not a detailed assessment of the USP or AMP. It is extremely high level. Without disclosing elemental information such as demand forecasts, Enbridge has not met its burden to justify its requests in this proceeding.

Need for demand forecast justification

There are many reasons to question the appropriateness of the demand forecasts underlying Enbridge's capital budget. Most importantly, Enbridge appears to disregard any possibility that gas demand may decline due to efforts to decarbonize space and water heating. All of Enbridge's planning appears to be based on a single scenario – continued and steady increases in the consumption of fossil gas for many decades to come. Enbridge's capital planning effectively

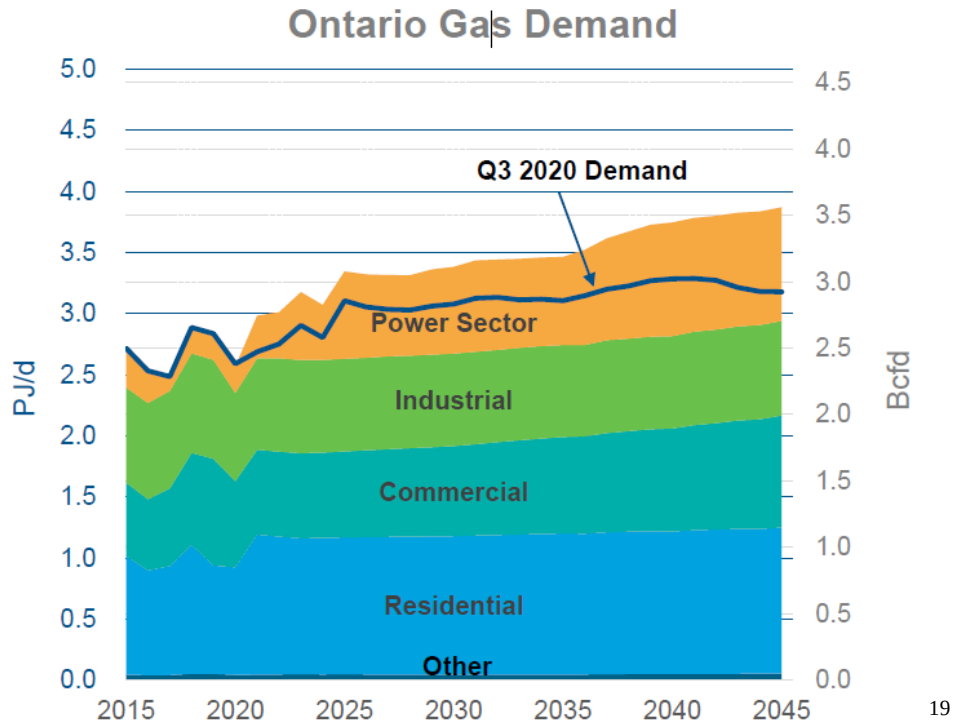
¹⁵ Exhibit I.ED.9 & Exhibit I.SEC.21.

¹⁶ Exhibit I.ED.15(b).

¹⁷ Exhibit JT1.1.

assumes the possibility of declining demand for this fossil fuel within the lifetime of current assets to be 0%.¹⁸

Although Enbridge did not file a demand forecast underlying its USP and AMP, it is likely to be similar to the one set out in its recent annual gas supply plan, which is excerpted below.



A forecast of steadily increasing gas demand needs to be justified with at least some evidence and analysis, particularly in light of ongoing efforts to decarbonize space and water heating due to climate change. Enbridge has not done this.

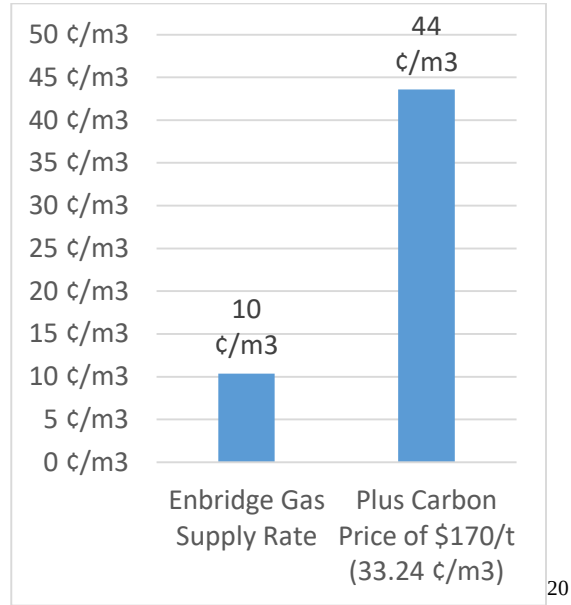
Gas price increases ignored

Enbridge has not accounted for the increases in the cost of gas that will accompany decarbonization. Significant increases in price will likely dampen demand. Enbridge has not even considered the impact of the planned increase in carbon prices to \$170/tonne. As shown on the following page, this price will cause gas costs to be more than 4 times the current gas supply rate.

¹⁸ For example, Enbridge is forecasting considerable spending on new customer connections that is significantly higher than the average historical spend per Exhibit I.ED.5. See also the demand forecast shown above.

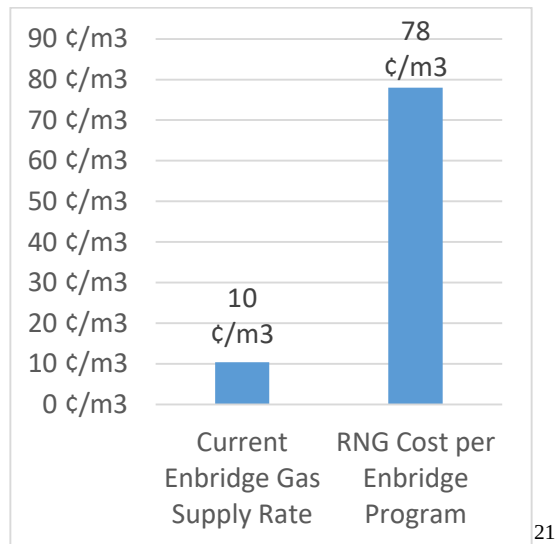
¹⁹ EB-2021-0004, 2021 Annual Gas Supply Plan Update, Enbridge Gas Inc., February 1, 2021, p. 13

Impact of \$170/tonne Carbon Price on Current Gas Supply Rate



Indeed, the impact of the carbon price is minor compared to the cost of adding renewable natural gas (“RNG”) or hydrogen to the supply mix. The figures below show that the cost of RNG procured in Enbridge’s current RNG program is more than 7 times the current gas supply rate.

Current Gas Supply Rate vs. Cost of Renewable Natural Gas in Enbridge’s RNG Program



²⁰ OEB, Natural Gas Rates, ([link](#)); Enbridge, Federal Carbon Charge, ([link](#))

²¹ OEB, Natural Gas Rates, ([link](#)); EB-2020-0066, Exhibit I.STAFF.8, Page 3 ([link](#), PDF p. 22).

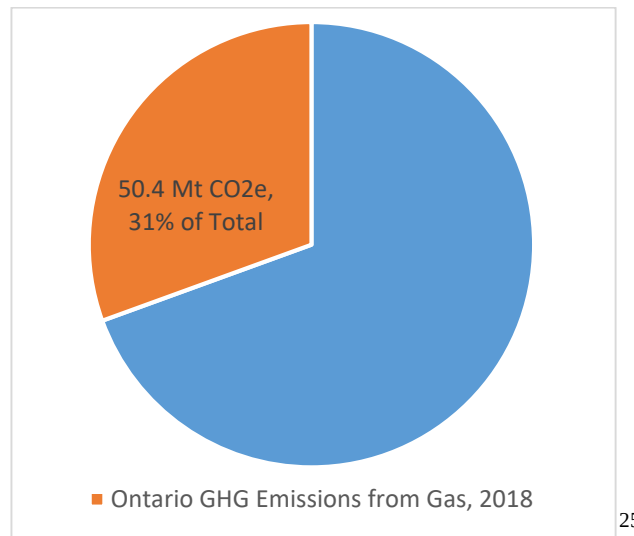
Also, this price for RNG (\$0.78/m³) is comparatively low because Enbridge is initially purchasing from the more-cost-effective RNG sources. For example, a great deal of future potential RNG is from municipal waste and would cost \$2.90/m³, almost 30 times the current gas supply rate.²² In addition, the cost of hydrogen is well over 15 times the current Enbridge gas supply rate.²³ Regardless of the precise figures, there is no doubt that RNG and hydrogen are multiple times more expensive than fossil gas, these price increases would impact demand, and Enbridge has disregarded this in its capital planning.

A great deal of the capital costs incurred in 2021 will be on assets with lives extending beyond 2060. Although this is not the appropriate proceeding to determine the impact of future gas price increases on the demand for these assets, it is clear that Enbridge has done zero analysis of this in its capital planning.²⁴ We can have debates about the magnitude of the impact, but completely sidestepping the issue is clearly insufficient from a planning perspective.

Potential for underutilized assets ignored

Enbridge appears to be disregarding the possibility that decarbonization will lead to the underutilization of the assets it is putting in the ground today in its capital planning. The following two figures illustrate why this is not prudent planning. As indicated below, fossil gas combustion constitutes over 30% of Ontario's GHG emissions.

Ontario GHG Emissions from Fossil Gas
as % of Total Ontario Emissions (2018)



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²² EB-2020-0066, Exhibit I.STAFF.8, Page 3

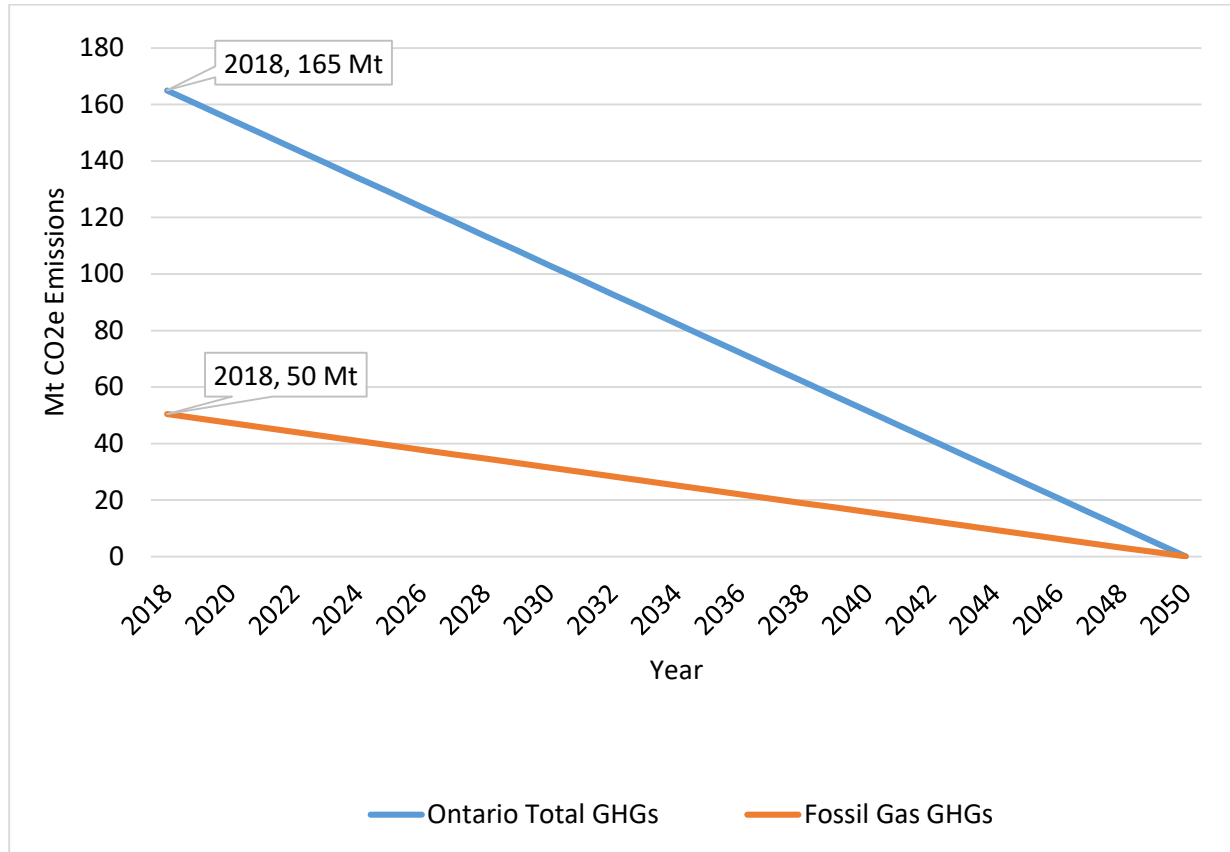
²³ EB-2019-0294, Exhibit I.ED.6(g)&(i) ([link](#), PDF p. 172-173).

²⁴ Exhibit I.SEC.6.

²⁵ EB-2020-0136, Exhibit I.ED.7 ([link](#), PDF p. 112).

Those emissions must approach reach net zero by 2050. Although the trajectory is unknown, the following figure shows one scenario to illustrate the decline in fossil gas consumption that will be required between now and 2050.

Linear GHG Emission Decline to Net Zero
Ontario Total and Fossil Gas



26

We are not providing these figures for the purpose of making any predictions. We simply wish to illustrate the need to assess the impacts of climate change on gas demand in any capital planning process.

As noted above, one potential impact of climate change is greatly increased prices through the injection of RNG and hydrogen. Another possibility is declining gas demand through energy efficiency and electrification. Enbridge's demand forecast (see above) seems to ignore this possibility (i.e. assign a 0% likelihood to this possibility) because it predicts a relentless climb in gas consumption that is inconsistent with significant increases in efficiency and electrification.

Enbridge is using ratepayer funds to make an "all-in" bet that decarbonization of space and water heating will not involve enough efficiency and electrification to cause declining gas demand. The

²⁶ EB-2020-0136, Exhibit I.ED.7 ([link](#), PDF p. 112).

following table of the relative cost-effectiveness of efficiency and electrification in comparison to RNG and hydrogen shows that this assumption is not reasonable.

Comparison of Ontario Fossil Gas Decarbonization Options

	Cost-effectiveness (\$/tCO ₂ e, combustion only)	Decarbonization potential (% of Ontario gas demand)
Cost-effective energy efficiency	\$0 to -\$140 (i.e. savings) ²⁷	25% ²⁸
Electric heat pumps	\$130 to \$200 ²⁹ (commodity & capital cost)	Near 100% ³⁰
RNG	\$338 ³¹	2.5% ³²
Hydrogen	>\$900 (commodity cost) + ~\$4,000 (capital cost) ³³	6% ³⁴

We can have debates about the likelihood of declining gas demand as a result of decarbonization efforts, but completely sidestepping the issue when forecasting demand, which amounts to assigning it a 0% probability, is clearly insufficient from a planning perspective.

This is an important *financial* issue. Decarbonization is occurring and will have major impacts on fossil fuel consumers. The financial risks associated with continued investments in fossil fuels are widely acknowledged by financial leaders. For example, Mark Carney recently warned that

²⁷ EB-2016-0359, ICF, *Marginal Abatement Cost Curve*, July 20, 2017, prepared for the OEB, p. 14 [\[link\]](#); Per Exhibit JT1.7 in EB-2020-0066 [\[link\]](#), PDF p. 398], if upstream emissions are accounted for, the cost is \$0 to - \$108/tCO₂e.

²⁸ Navigant, *2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study*, prepared for the IESO and OEB, December 18, 2019, p. ix [\[link\]](#).

²⁹ EB-2016-0359, ICF, *Marginal Abatement Cost Curve*, July 20, 2017, prepared for the OEB, p. A-4 to A-5 14 [\[link\]](#) (heat pumps are \$130/tCO₂e for new homes and \$200/tCO₂e for existing homes according to this study, but prices are declining significantly as cold climate heat pumps become more commonplace); Per Exhibit JT1.7 in EB-2020-0066 [\[link\]](#), if upstream emissions are accounted for, the cost is \$101 to \$155/tCO₂e.

³⁰ EB-2016-0359, ICF, *Marginal Abatement Cost Curve*, July 20, 2017, prepared for the OEB, p. 25 [\[link\]](#).

³¹ EB-2020-0066, Exhibit I.SEC.15 [\[link\]](#); Per Exhibit JT1.7 in EB-2020-0066 [\[link\]](#), PDF p. 398], if upstream emissions are accounted for, the cost is \$262/tCO₂e.

³² EB-2016-0359, ICF, *Marginal Abatement Cost Curve*, July 20, 2017, prepared for the OEB, p. 47 [\[link\]](#); This report estimates a potential of 627 million m³/yr, which is 2.41% of Ontario's consumption of 26 billion m³/yr. This potential was considered achievable by 2028 based on a study conducted in 2013. In Exhibit JT1.5 [\[link\]](#), Enbridge estimates the potential as 402 million m³/yr by 2025, which is 1.55% of Ontario's gas consumption of 26 billion m³/yr.

³³ Exhibit I.ED.11(a)&(b), p. 2-3 [\[link\]](#), PDF p. 197-198]; Per Exhibit JT1.7 in EB-2020-0066 [\[link\]](#), PDF p. 398], if upstream emissions are accounted for, the cost is over \$700/tCO₂e for commodity costs and over \$3,000 for capital costs.

³⁴ Enbridge is proposing to blend 2% hydrogen by volume. Because hydrogen is less energy dense, this amounts to 0.6% by energy content. See Exhibit I.ED.12, p 14-15 (h)&(i), [link](#), PDF p. 15-16. No studies are testing blending beyond 20% by volume (per Exhibit I.ED.7, [link](#), PDF p. 177), which equates to 6% by energy content.

global warming could render the assets of many financial companies worthless because they have been too slow to cut investment in fossil fuels.³⁵ These risks cannot be ignored when a utility is using ratepayer funds to build fossil fuel infrastructure with lifetimes beyond 2060.

London Lines and Sarnia Project Amounts

Although Environmental Defence is asking the OEB to defer a final decision on the reasonableness of the 2021 budget forecast, other specifics relating to the ICM treatment of the London Lines Project and Sarnia Project can be determined, such as the appropriate amount of indirect overhead allocations. Environmental Defence believes these issues have been well canvassed by other intervenors and has no further submissions.

Conclusion

Enbridge has put the OEB in a difficult position in this case. The utility is seeking relief that depends on a 2021 capital budget forecast, but it has declined to justify that forecast and has opposed intervenor attempts to assess the reasonableness of that forecast through interrogatories. It has not provided evidence on IRP, nor provided demand forecasts, nor justified those forecasts, nor consider the financial impacts of decarbonization on these long-lived assets.

Therefore, Environmental Defence submits that a full unqualified approval of this application cannot be made. Instead, a deferred or provisional decision on the 2021 budget forecast would best protect ratepayers and create an avenue to appropriately address these issues in the future.

³⁵ Financial Post, *Global warming could render the assets of many financial companies worthless, Mark Carney warns*, December 30, 2019, <https://business.financialpost.com/news/fp-street/boes-carney-says-finance-must-act-faster-on-climate-change>.