

ONTARIO ENERGY BOARD

EB-2022-0024

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

AND IN THE MATTER OF an application by Elexicon Energy Inc. for electricity distribution rates and other charges effective January 1, 2023

Submissions of Environmental Defence

**Re Elexicon Energy
Whitby Smart Grid and Sustainable Brooklin Projects**

May 4, 2023

**Elson Advocacy
Professional Corporation**
1062 College Street, Lower Suite
Toronto, Ontario
M4H 1A9

Kent Elson, LSO# 57091I
Tel.: (416) 906-7305
Fax: (416) 763-5435
kent@elsonadvocacy.ca

Summary

Elexicon Energy Inc. (“Elexicon”) is seeking approval for incremental capital funding for its Whitby Smart Grid Project and Sustainable Brooklin Project. The Whitby Smart Grid Project involves the installation of technologies that help to conserve energy, reduce electricity costs, and improve reliability.¹ The Sustainable Brooklin Project involves an exception to the normal developer-pay rule for distribution infrastructure in exchange for the relevant developers agreeing to include rough-ins for distributed energy resources and electric vehicle connections in the new homes.

Elexicon should be commended for bringing these innovative projects to the OEB. The Whitby Smart Grid Project is an excellent initiative that should be approved now as it will save customers money, improve reliability, reduce carbon emissions, promote government/OEB policy, and bring about other benefits. The Sustainable Brooklin Project has a number of good elements. However, in lieu of the \$26.6 million in incremental capital funding, the OEB could grant alternative relief, as outlined below, that would bring about greater benefits at a lesser cost to existing customers.

These submissions focus primarily on topic 5 and whether the projects are needed and prudent.

The Whitby Smart Grid Project should be approved

The Whitby Smart Grid Project is an excellent proposal. It represents a rare opportunity to save customers money, improve reliability, reduce carbon emissions, promote government/OEB policy, and achieve other benefits that have not been monetized and accounted for in Elexicon’s cost-benefit analysis.

The Whitby Smart Grid will lower customer energy bills, primarily through electricity that will be saved. The avoided electricity costs will fully pay for the project and bring about net savings of \$6.8 million over the lifetime of the equipment.² These savings depend on future electricity prices. Therefore, the savings will be higher if electricity prices increase due to efforts to expand and fully decarbonize Ontario’s electricity system. The savings also depend on the actual efficiency gains that Elexicon can achieve. Its forecast efficiency gains are well within the experience of Hydro Ottawa with similar technology.³

When the benefits of increased reliability are included, the net present value of the project increases to \$39.7 million. Although the value of reliability is difficult to quantify, it is a real benefit that should be accounted for. Some of Elexicon’s customers experience significant outages and would benefit from faster restoration.

¹ These technologies include advanced distribution management system (“ADMS”), volt/VAR optimization (“VVO”), distribution automation (“DA”), and fault location isolation and service restoration (“FLISR”).

² JT1.5.

³ Hearing Transcript, p. 173.

Elexicon's estimate of the benefits is conservative because it does not account for a number of factors, all of which would increase the overall benefits to customers. In particular, the \$39.7 million in net benefits does not account for:

- Customer benefits arising from DERs that are enabled by allowing greater DER penetration, such as net revenue from a solar/battery installation;
- The fact that line loss reductions are greatest at the times of peak demand when electricity costs are highest (because electricity savings calculations were based on averages without accounting for this);
- Avoided costs of province-wide non-emitting generation capacity;
- Contribution to potential future avoidance of transmission or distribution infrastructure;
- Benefits to the economy (e.g. DER spending, and its contribution to the local economy); and
- Greenhouse gas reductions, including the marginal cost of making equivalent reductions through other means.⁴

The Whitby Smart Grid Project would save 202,977 TCO₂e in carbon emissions over 20 years.⁵ That equates to a net present value of \$19.3 million in avoided carbon emissions at the Government of Canada's carbon price.⁶ The benefit of avoiding these emissions is not accounted for in the electricity cost savings calculations for the project because gas-fired generation is almost fully exempted from carbon pricing. The value of emissions reductions should be considered.

Finally, the project furthers government policy as reflected in the Minister's letter of direction to the OEB, and its strong support for innovation and cost-effective deployment of distributed energy resources.⁷

We understand that there may be a timing issue relating to the rules governing incremental capital if this project does not go ahead until 2025. However, there are unique circumstances relating to the timing of this application, there is no prejudice in granting approval now, and if anything, the additional planning time will benefit customers. Environmental Defence requests that approval be granted for this excellent project in this proceeding.

The Sustainable Brooklin Project should be approved if improved

The Sustainable Brooklin project seeks \$26.6 million from rates to build the Brooklin Line to the north Brooklin area where a significant number of residential developments are slated to be built.

⁴ Response to Interrogatory ED-01.

⁵ *Ibid.* p. 7

⁶ *Ibid.* p. 7.

⁷ Minister's Letter of Direction to the OEB, November 15, 2022.

This requires an exemption from the Distribution System Code (DSC), which would normally require the developers to pay. In exchange for this \$26.6 million contribution from rates, the developers would build rough-ins for distributed energy resources (DERs) and electric vehicles (EVs). The developers would remain responsible under the normal DSC rules for capital contributions for incremental distribution infrastructure between the end of the Brooklin Line and their development and internal to their development.

The Sustainable Brooklin Project has a number of good elements. However, in lieu of the \$26.6 million in incremental capital funding, the OEB could grant alternative relief, as outlined below, that would bring about greater benefits at a lesser cost to existing customers.

Encouraging the Brooklin developers to provide rough-in for distributed energy resources is a positive step. This could help avoid distribution costs down the road through the promotion of distributed energy resources, which would benefit all Elexicon customers. The project could also help homeowners in the new developments save \$45 million (net present value) by avoiding future expensive retrofit costs.⁸

However, these benefits likely could be achieved without having existing ratepayers fully fund the \$26.6 million Brooklin Line to the north Brooklin area. Instead, Elexicon could offer the following incentives to the Brooklin developers, which would resolve the financial and fairness concerns raised by the developers and likely be sufficient to convince them to install the rough-ins:

- **Extend the Customer Attachment *and* Customer Revenue Horizon:** Under the normal DSC rules, developer capital contributions are reduced by the forecast revenue from customers that will connect over the next 5 years, including only the revenue that will arise within 25 years.⁹ For the purposes of calculating capital contributions, Elexicon could extend the customer attachment horizon from 5 to 10 years *and* extend the customer revenue horizon from 25 to 40 years, or more.

Elexicon considered extending the customer attachment horizon, but did not also consider extending the revenue horizon.¹⁰ Extending the revenue horizon is key because it allows 40 years of revenue to be used to offset the capital costs instead of only 25. However, we agree with Elexicon that adjusting these horizons are not sufficient on their own, and other adjustments would be necessary, as outlined below.

- **Relieve First Contributors from Fronting the Full Capital Contribution:** Under the normal DSC rules, the first contributors pay 100% of the capital contribution up front even though the infrastructure will benefit developers who subsequently seek to connect.¹¹ The first contributors receive a rebate from subsequent developers, but only if

⁸ JT1.9.

⁹ Distribution System Code s. 3.2.4 and Appendix B.

¹⁰ Exhibit JT1.6; Exhibit OEB Panel-4 (see p. 4: “25-year customer revenue horizon was used in all DCF calculations.”).

¹¹ Distribution System Code s. 3.2.4 & 3.2.6.

those subsequent developers connect within the five-year customer attachment horizon.¹² This is a problem because (a) the first contributors need to finance the whole amount up front and (b) subsequent developers pay nothing if they connect after the first five years.

Elexicon could resolve this by dispensing with the usual practice of collecting the full capital contribution for the Brooklin Line from the “first movers,” and instead collect those costs developer-by-developer until the customer attachment forecast underpinning the capital contribution calculation has been met. By continuing to require payment until the connection forecast has been met, instead of a date-based cutoff, the risks are reduced. This approach would: (a) greatly reduce the financing required from the first movers, (b) eliminate free ridership caused by the normal five-year rebate cutoff, and (c) eliminate the administrative complication of administering rebate to a large number of developers over time.

Under this arrangement, there could continue to be two phases. The Brookline Line would be built in phase 1 and would be paid off over time by connecting developers. The incremental distribution infrastructure would continue to be paid separately once each developer connects.

- **Dispense with or Reduce the Revenue Forecast Deposit:** Under the normal DSC rules, the customer must pay 100% of the capital contribution *and* also provide a deposit to cover the remaining capital cost, which is repaid to the developer over five years as the revenue forecast comes to fruition.¹³ This deposit could also be waived.

We see significant benefits of this alternative:

- The \$26.6 million is defrayed over a larger group of developers over time instead of being covered by existing ratepayers.
- Ratepayers assume some revenue forecasting risk and interest costs, but that is better than assuming the full \$26.6 million cost, and steps can be taken to mitigate the risks.
- These adjustments to the normal rules would likely provide sufficient benefits to maintain the requirement for DER/EV rough-ins.
- The “first movers” would require far less than \$26.6 million in financing for the Brooklin line.
- The unfairness between first movers and those connecting after five years is eliminated.
- The adjustments noted above would provide consistency with capital contributions from developers for gas infrastructure, which are currently calculated on a 10-year customer

¹² Distribution System Code s. 3.2.27.

¹³ Distribution System Code s. 3.2.20. Although the connection deposit can be provided by way of other means such as a line of credit (s. 3.2.25), this still significantly impacts the overall financing available to a developer.

attachment horizon, with a 40-year revenue horizon, and with no revenue forecast deposits required.¹⁴

Elexicon could also help the reduce costs for its new customers, developers, and both electricity and gas ratepayers by convincing the developers to install cold climate heat pumps instead of gas equipment and gas infrastructure. Consumers would save thousands of dollars in reduced energy costs and avoided gas distribution charges over the equipment lifetime.¹⁵ Like in the case of the DER/EV rough-ins, customers would also save by avoiding future retrofit costs to decarbonize their home heating. In addition, many modern water heaters are grid enabled, especially the most cost-effective smart heat pump water heaters, which would provide Elexicon with cost-effective demand response opportunities.

This is also very important from a climate perspective. The combustion of methane gas contributes approximately 1/3rd of Ontario's carbon emissions – far more than the emissions from the electricity sector.¹⁶ Eliminating the combustion of fossil fuels to heat homes is an important and necessary step toward meeting climate targets.

The promise to provide the DER/EV rough-ins is very positive. However, we anticipate other intervenors will question the true value when green building codes are moving in that direction regardless, and in some cases providing more stringent standards. If Whitby enacted a green building standard before these houses are built, that would eliminate the value of the DER/EV promise by making it redundant.¹⁷ This can be mitigated through the adjustments noted above, which would reduce the costs for ratepayers and increase the benefits.

Elexicon has stated that adjustments to the capital contribution calculation parameters would be a breach of the requirement in s. 26 of the *Electricity Act* that distributors provide “generators, retailers, market participants and consumers with non-discriminatory access” to their distribution systems. We disagree. If that was the case, the DSC amendment sought by Elexicon would also breach the *Electricity Act*, as would all sections in the DSC that give distributors discretion over connection charges. Adjusting connection charges parameters to address fairness and to obtain other benefits is not “discrimination.”¹⁸

Environmental Defence is very concerned that an outright rejection of Elexicon's Sustainable Brooklin Project could have a chilling effect on innovation. Although Elexicon's proposal could be improved, the worst outcome would be an outright rejection that leads Elexicon and other utilities to shy away from proposing new approaches. Therefore, Environmental Defence requests that the OEB grant leave for Elexicon to move forward with the Sustainable Brooklin

¹⁴ Exhibit JT1.17, p. 5; E.B.O. 188.

¹⁵ EB-2022-0157, [Evidence of Dr. Heather McDiarmid](#), October 28, 2022, p. 4, (Customers would save approximately \$15,000 in reduced energy costs and avoided gas distribution charges and the net savings would be approximately \$11,000. This analysis was completed in 2022 for the Windsor area. Results will vary by time and geography, but the savings are so substantial that they would not be eliminated. Also, the savings from electrification increase as carbon prices increase.)

¹⁶ EB-2022-0200, Exhibit 1, Tab 10, Schedule 3, Page 2.

¹⁷ Hearing Transcript, Vol II, p. 60.

¹⁸ Not all differentiation is discrimination. In addition, s. 26 refers to “non-discriminatory *access*,” not “non-discriminatory *charges*.”

Project if they are able to do so on the basis of the DSC exemptions noted above. This would give Elexicon the ability to re-negotiate a deal with the developers on an expedited basis so that DER and EV ready houses with zero-emissions heating can be built as quickly as possible.

Review of Residential Connections Policies

Environmental Defence requests that the OEB commence a review of its electricity connection policies for residential developments. This proceeding has shed light on a number of potential improvements that could benefit consumers and help to achieve government housing targets.

Most importantly, customers could save a great deal on energy through revised electricity connection rules. The current connection rules are strongly biased in favour of fossil fuel infrastructure. Developers have much more attractive terms for gas connections versus electric connections, as set out in the table below. This blunts the incentive to forgo gas and install high-efficiency heat pumps instead. This harms customers, who could save thousands by having heat pumps instead of gas equipment.¹⁹

From a societal perspective, it also results in unnecessarily spending on fossil fuel infrastructure that will likely be underutilized in the future and may become stranded. It costs over \$3,000 per home to add gas infrastructure to a residential development on average, which is a fully avoidable cost.²⁰ Also, from an environmental perspective, is ludicrous to give preferential treatment to fossil fuel infrastructure.

Electricity versus Gas Connection Policies		
	Gas Connection Rules (Per EBO 188)	Electricity Connection Rules (Per DSC)
Capital contribution parameters		
Customer attachment horizon	10	5
Customer revenue horizon	40	25
Deposit to guarantee revenue forecast	None required	100% deposit required
Availability of surcharges to pay down connection costs over time	Yes ²¹	No

¹⁹ EB-2022-0157, [Evidence of Dr. Heather McDiarmid](#), October 28, 2022, p. 4, (Customers would save approximately \$15,000 in reduced energy costs and avoided gas distribution charges and the net savings would be approximately \$11,000. This analysis was completed in 2022 for the Windsor area. Results will vary by time and geography, but the savings are so substantial that they would not be eliminated. Also, the savings from electrification increase as carbon prices increase.)

²⁰ EB-2021-0002, Exhibit JT1.14.

²¹ EB-2020-0094, [Decision and Order](#), Application for approval of a System Expansion Surcharge, a Temporary Connection Surcharge and an Hourly Allocation Factor, December 4, 2020.

Furthermore, the disparity between the electric and gas connection policies is completely inconsistent with the financial risks associated with decarbonization. A 40-year revenue stream from a fossil fuel gas connection is far from a safe bet in light of decarbonization – the period would stretch well beyond 2050 up until 2063. There is significantly less risk associated with the revenue stream of electric connections, which should be reflected in *longer* revenue horizons for electric connections vis-à-vis gas, not shorter horizons as currently exist.

Revised rules could also help the government build more homes faster. First, extending the revenue horizon for electric connection capital contribution calculations would reduce the up-front costs to developers. Second, the current rules give an incentive for developers to wait for other developers to be the first movers to avoid fronting 100% of the capital contribution and 100% of the revenue forecast deposit. Removing this perverse incentive could help bring more projects forward faster.

Conclusion

For the reasons set out above, Environmental Defence asks the OEB to approve the Whitby Smart Grid Project, provide alternative relief to allow the Sustainable Brooklin Project to move forward, and consider implementing a review of residential electric connections policies with the aim of reducing energy bills for new homeowners and helping to get more homes built faster.