March 3, 2022

VIA RESS

Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4
Attention: Registrar

Dear Ms. Marconi,

Re: Design of an Optional Enhanced Time-of-Use (TOU) Rate
Board File No.: EB-2022-0074

We are counsel to the Electric Vehicle Society (**EVS**) in the above-noted consultation. Please find enclosed EVS's written comments on the Board's proposed design of an optional enhanced TOU rate, pursuant to the Board's letter date February 18, 2022.

Sincerely,

Lisa (Elisabeth) DeMarco

c. Wilf Steimle, EVS
Cara Clairman, Plug'n Drive

Encl.

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ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Sched. B, as amended (the **Act**);

AND IN THE MATTER OF a consultation regarding the design of an optional enhanced time-of-use (TOU) rate.

EB-2022-0074

WRITTEN COMMENTS

OF

ELECTRIC VEHICLE SOCIETY

(EVS)

March 3, 2022

INTRODUCTION

Electric Vehicle Society

1. The Electric Vehicle Society (**EVS**) is a non-profit organization representing over 1,000 end-use, largely residential, individual electric vehicle (**EV**) electricity customers. EVS has 12 local chapters of electricity rate-paying customers in Ontario. Its mission is to accelerate the adoption of EVs and shift car culture towards a more sustainable future.

2. The report requested by the Minister of Energy on an optional enhanced time-of-use (**TOU**) rate is of particular importance to EVS and its members. EVS attended the stakeholder meeting in mid-February and appreciates the opportunity to file these comments.

3. EVS submits that the objectives of the Board's approach to ultra-low rate TOU pricing should reflect the considerations that EVs are growing, EVs can behave like distributed energy resources (**DERs**), and EVs may have significant system and consumer benefits. These comments are divided into the following three sections:

   (a) EV trends and opportunities in Ontario;

   (b) Decarbonization and the future of electricity demand in Ontario; and

   (c) EVS's recommendations.

A. EV TRENDS AND OPPORTUNITUIES IN ONTARIO

4. The number of EVs on the road in Ontario has increased at an accelerating pace over the last several years. As of late 2018, the share of new passenger car sales that were EVs had risen to 8.3% nationwide.[1] As of the end of the fourth quarter of 2021, EVs (including zero emission vehicle (**ZEV**), battery electric vehicles (**BEV**), and plug-in hybrid electric vehicles) had a penetration rate of 11.8% (up from 7.6% in 2020), with continued growth across most provinces.[2] The 2021 national market share of internal combustion engine vehicles dropped

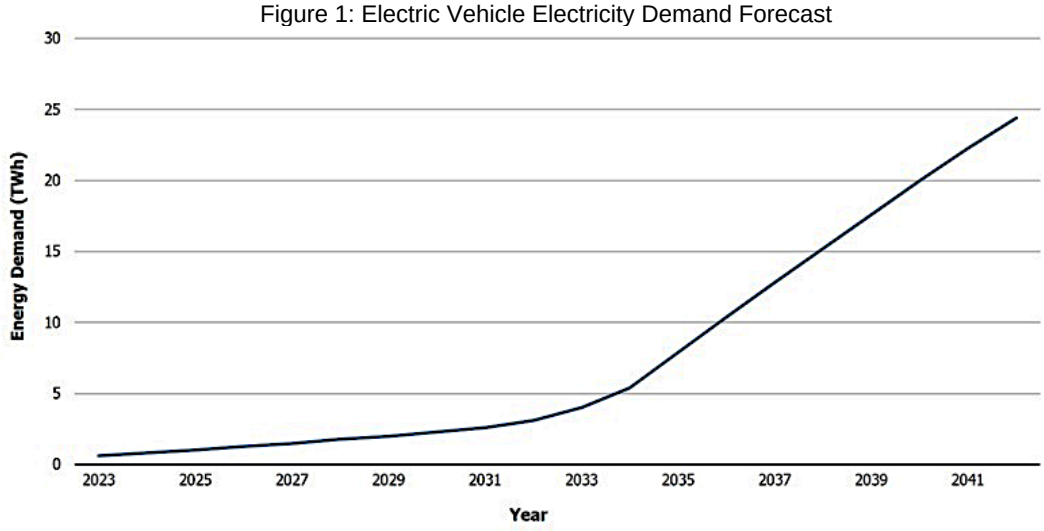
[1] Fleetcarma, "Electric Vehicle Sales Update Q3 2018, Canada", available online at: https://www.fleetcarma.com/electric-vehicles-sales-update-q3-2018-canada/.
[2] IHS Markit, "Automotive Insights – Canadian EV Information and Analysis Q4 2021", available online at: https://ihsmarkit.com/research-analysis/automotive-insights-canadian-ev-information-analysis-q4-21.html.

4.2% relative to its 2020 level.[3] In 2020, a total of 10,515 (1.8%) new vehicles registered in Ontario were ZEVs.[4]

5. Canada announced in June 2021 that it was accelerating its goal of 100% sales of zero emission light-duty and passenger trucks by 2040, and set a mandatory target for all new light-duty cars and passenger trucks to be zero emissions by 2035.[5] This new goal is meant to support Canada's greenhouse gas (**GHG**) reduction target of 40% to 45% below 2005 levels by 2030. It is expected that close to 100% of light-duty vehicles on the road will be zero-emission by 2050.

6. There are now over 200,000 EVs registered in Canada and all predictions point to exponential growth in EVs over the next few years as a result of extended range, greater variety of makes and models, and improving battery capacity. The IESO forecasts that there will be 6.6 million EVs in Ontario by 2042, with an annual charging demand of 24.4 TWh and a peak demand of 1,200 MW (see Figure 1).[6] Furthermore, there are nearly 2,000 public charging stations with over 5,000 charging ports across the province in addition to potential and existing charging points available at most consumer residences.[7]

Figure 1: Electric Vehicle Electricity Demand Forecast



[3] *Ibid.*
[4] Statistics Canada, "Zero-emission vehicles in Ontario, 2020", (22 April 2021) available online at: https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2021031-eng.htm.
[5] Transport Canada, "Building a green economy: Government of Canada to require 100% of car and passenger truck sales be zero-emission by 2035 in Canada" (29 June 2021.
[6] IESO "APO: Ontario's electricity system needs: 2023-2042" (December 2021) available online: https://www.ieso.ca/-/media/Files/IESO/Document-Library/planning-forecasts/apo/Dec2021/2021-Annual-Planning-Outlook.ashx.
[7] Ontario, "Charging electric vehicles", available online at: https://www.ontario.ca/page/charging-electric-vehicles.

7. There are several well-reported system and consumer benefits of EVs including: (i) economic benefits (optimized generator operation, deferred generation capacity investments, reduced ancillary service cost, reduced congestion cost, deferred transmission capacity); (ii) reliability benefits (reduced sustained outages, reduced momentary outages, reduced sags and swells); and (iii) environmental benefits (reduced GHG emissions). EVs can provide system-wide benefits and increased capacity in a cost-effective manner along with GHG emissions reductions that benefit all consumers (whether or not they are EV owners). EV-related growth and integration are resulting in fundamental changes to the distribution grid that will impact several aspects of the electricity system, including electricity supply and demand, customer preferences, capital expenditures, operations and maintenance, load and productivity.

8. EVS supports the introduction of an "Ultra-Low Overnight" TOU rate to encourage EV owners to shift demand to off-peak time, helping to reduce peak load demands and potentially support cost savings for rate payers connected to lower capital costs and investments associated with electricity generation, transmission, and distribution that will be needed to address electrification and broader decarbonization of Ontario's economy over the coming years and decades. The introduction of the proposed ultra-low TOU pricing may also act as a catalyst for some RPP customers to purchase EVs and other distributed storage and other DER technologies and programs that support broader electrification goals. EVS is supportive of any initiative that lowers barriers to wider EV adoption, which includes initiatives reducing the costs associated with fueling and charging.

B. DECARBONIZATION AND THE FUTURE OF ELECTRICITY DEMAND IN ONTARIO

9. Ontario and Canada have both invested in supporting Ontario as an automotive hub for BEV production, with Ontario making a $259 million federally-matched investment for the retooling of Ford of Canada's Oakville Assembly Complex.[8] Ontario's proposed "Made-in-Ontario Environment Plan" noted that the uptake of low carbon vehicles, including EVs, will assist the province in meeting its 2030 GHG reduction targets.[9]

[8] Ontario, "Made-in-Ontario Environment Plan", available online: https://www.ontario.ca/page/made-in-ontario-environment-plan.
[9] Ontario, "(Proposed) Made-in-Ontario Environment Plan", available online: https://www.ontario.ca/page/made-in-ontario-environment-plan, p. 23, available online: https://prod-environmental-registry.s3.amazonaws.com/2018-11/EnvironmentPlan.pdf.

10. Minister of Energy Todd Smith has noted that "over the coming years, electrification of emissions-intensive sectors is expected to provide opportunities to reduce province-wide emissions. This trend will also put pressure on the electricity grid. There is an opportunity to consider new rate designs that could anticipate increased electrification and support the decarbonization of the economy, such as by shifting electricity loads to lower-demand overnight periods when Ontario has more electricity available and electricity is generated largely from non-emitting sources. Shifting loads to overnight periods may also have the added benefit of increasing efficiency in Ontario's electricity grid."[10]

11. Growth in EVs, and the electrification of transportation broadly, is a critical tool that should be deployed to reduce Ontario's overall GHG emissions. Transportation accounts for the largest share of Ontario's GHG emissions (35%), while Ontario's electricity grid is nearly emissions-free. Demand from the electrification of buses, trucks, and trains is predicted to grown by an average of 20% per year through 2040.[11] Ontario's transition to a more decarbonized transportation sector, is supported by commitments for several large transit electrification projects, government incentives for industry and consumers, and EV offerings from auto makers.

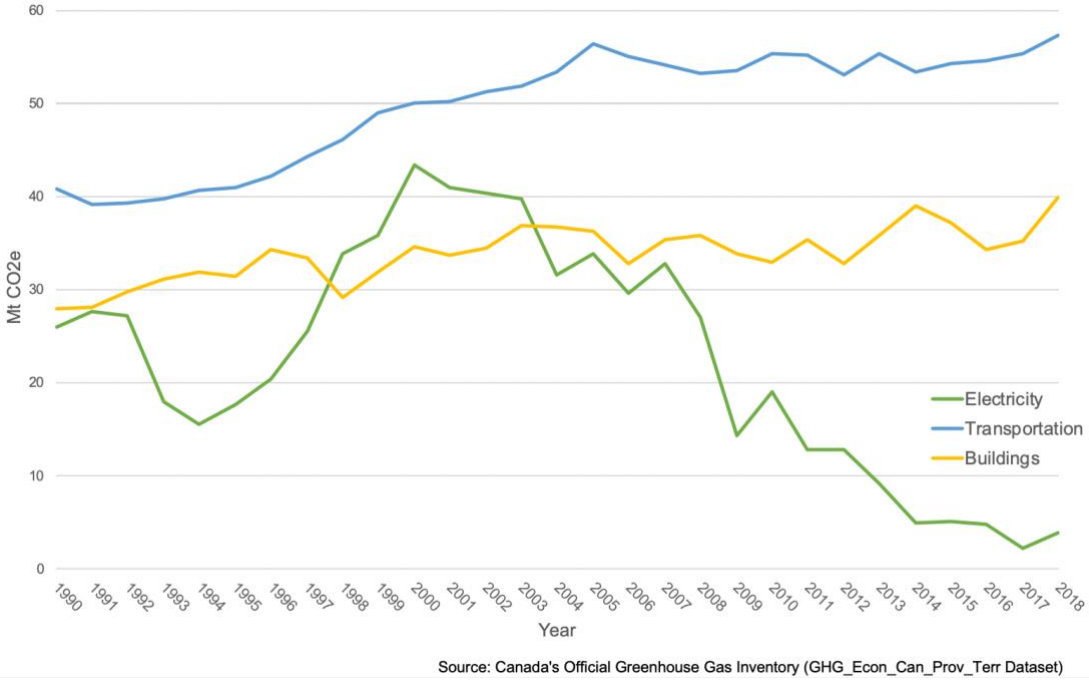
12. Ontario's electricity sector is virtually decarbonized (approximately 94% of electricity produced in Ontario is from non-carbon-emitting resources), with electricity generation emissions intensity of 29 g CO2e per kWh in 2018.[12] This is among the very lowest electricity sector emissions rates in the world. It also results from the very significant cost investment that Ontario and Ontario electricity customers continue to absorb by phasing out coal.

13. In contrast, the buildings and transportation sectors both have significantly increasing emissions over the last decade, and the trend is likely to continue for the foreseeable future (see Figure 2). However, electrification in transportation through the widespread adoption of EVs is estimated to provide important GHG reductions for Ontario's electricity sector, with significant emission reductions forecasted from 2035 onwards, with EVs reducing emissions

[10] Minister of Energy, letter to OEB, (16 November 2021), available online: https://www.oeb.ca/sites/default/files/Letter-from-the-Minister-of-Energy-2021-732-20211116.pdf.
[11] IESO, "The Future of Electricity Demand in Ontario", (7 December 2021) available online: https://www.ieso.ca/en/Powering-Tomorrow/2021/The-Future-of-Electricity-Demand-in-Ontario
[12] *Ibid*.; Canada Energy Regulatory, "Canada's Renewable Power – Ontario" available online at: https://www.cer-rec.gc.ca/en/data-analysis/energy-commodities/electricity/report/canadas-renewable-power/canadas-renewable-power/provinces/renewable-power-canada-ontario.html.

by almost 18 Mt CO_2e by 2040. This reduction will likely completely offset any anticipated increases in emissions from the electricity sector resulting from broader sectoral electrification.[13] Accordingly, there is significant potential for the electricity sector to play the central role in decarbonizing the transportation, industrial, and building sectors. The Board's rate-setting policy, including its approach to TOU, should be used to enhance and optimize this potential.

Figure 2: Greenhouse Gas Emissions by Economic Sector (Ontario, 1990-2018)



14. EVS supports the introductions of ultra-low TOU pricing to assist in shifting demand and encouraging the wider adoption of EVs and DERs and support broader provincial and federal emission reductions targets. Measures to support EV adoption and other DERs, such as the proposed TOU pricing program, may also support reducing Ontario's GHG emissions by displacing high-emission sources of energy and feeding lower emission intense electricity into the grid during peak times. EVS also supports efforts to take advantage of the fact that both utility and non-utility investment in DERs, including EV-related DERs, may produce

[13] IESO, "The 2021 APO in 7 Graphs" (10 December 2021), available online: https://ieso.ca/en/Powering-Tomorrow/2021/The-2021-APO-in-7-Graphs.

enhanced system reliability, lower customer costs through load shifting, deferred/paced system investments, and improved flexibility.

C. RECOMMENDATIONS

15. EVS respectfully makes the following recommendations:

(a) The OEB should ensure that any proposed TOU pricing adequately incentivizes RPP customers to shift their load to off-peak times;

(b) The OEB, utilities and other sector participants should work with EV associations and groups, such as EVS, manufacturers, technology providers, and EV supply equipment manufacturers in the design and implementation of any TOU pricing program directly or indirectly targeted at EV owners;

(c) Enhanced TOU pricing should incentivize electrification and assist in enhancing decarbonization;

(d) The benefits of EVs should be considered fully in the context of any overnight TOU pricing proposal, including reduced GHG emissions and wider adoption of EVs;

(e) Ensure that there is adequate reporting and data collection to evaluate trends and benefits associated with the proposed ultra-low TOU price; and

(f) The enhanced TOU program should be priced fairly in order to ensure that EV-related DERs are compensated for the services they provide to the electricity system.

ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS
3rd day of March, 2022.

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