WHENEVER. WHEREVER.
We'll be there.

NEWFOUNDLAND POWER
A FORTIS COMPANY

July 19, 2023

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Dear Ms. Blundon:

Re: Application for EV Load Management Pilot Project

A. Introduction

On June 2, 2023, Newfoundland Power Inc. ("Newfoundland Power" or the "Company") filed an application for the approval to recover the costs of conducting an Electric Vehicle ("EV") Load Management Pilot Project (the "Application"). The Application proposes to recover the costs of conducting the pilot project through the Company's Electrification Cost Deferral Account approved by the Board in Order No. P.U. 3 (2022).

The Application was filed following the issuance of Order No. P.U. 33 (2022) in which the Board confirmed that it continues to believe appropriate electrification initiatives, combined with measures to reduce peak load, are likely to lead to positive outcomes for customers in the long term.[1] The Board invited the province's utilities to file subsequent applications for the approval to recover the costs of specific electrification initiatives that are shown to be appropriate for the province at this time.[2]

Newfoundland Power developed the Application in consultation with Newfoundland and Labrador Hydro ("Hydro"). The Application has been reviewed by the Board and interested parties through a process that included requests for information and written submissions. Newfoundland Power responded to 27 requests for information on the Application in June 2023. Hydro, Drive Electric NL and the Consumer Advocate filed written submissions on the Application in July 2023.

Hydro's submission reiterates its support of the pilot project, as originally demonstrated in a letter of support that was included with the Application. Hydro's letter of support noted the proposed pilot project is the most cost-effective approach to understanding how EV load can

1 See Order No. P.U. 33 (2022), page 11, lines 17 to 19.
2 See Order No. P.U. 33 (2022), page 16, lines 1 to 3.

Newfoundland Power Inc.
55 Kenmount Road • P.O. Box 8910 • St. John's, NL A1B 3P6
PHONE (709) 737-5364 • **FAX** (709) 737-2974 • **lhollett@newfoundlandpower.com**

best be managed in the province, and believes its approval will result in lower costs for customers.[3]

The submission of Drive Electric NL, which is a not-for-profit organization supporting EV owners in the province, also supports approval of the Application.[4] Drive Electric NL's submission noted that it is critical that EV load is managed to avoid burdening the province's electrical system and supported the use of incentives, education and other elements of the pilot project.

The Consumer Advocate provided the only submission recommending rejection of the Application.[5] The Consumer Advocate's submission is therefore the focus of Newfoundland Power's reply.

Section B of this correspondence provides background information relevant to the Board's consideration of the Application. Section C provides the Company's reply to the Consumer Advocate's submission. Section D concludes with Newfoundland Power's formal submissions on the Application.

B. Background

EV adoption is expected to increase throughout Canada in the coming years as the Federal Government takes steps to electrify the country's transportation sector to reduce greenhouse gas emissions. Federal targets have been established to achieve 100% zero-emission vehicle sales by 2035, with incremental targets of 20% and 60% of annual vehicle sales by 2026 and 2030, respectively.[6]

The latest study completed by Dunsky Energy + Climate Advisors ("Dunsky") shows that the number of light-duty EVs registered in Newfoundland and Labrador is forecast to range from 5,000 to 10,000 by 2025, increasing to 100,000 to 200,000 EVs by 2040.[7] Increased EV adoption will result in a corresponding increase in peak demand on the electrical system, which will create a need for additional system capacity and higher system costs for electricity customers. For example, Dunsky forecasts a minimum increase in peak demand of approximately 170 MW by 2040 due to EV adoption, which would result in higher system costs of approximately $200 million from 2024 to 2040.[8]

The record of this proceeding demonstrates that the peak demand impacts of EVs can be managed by implementing measures to shift EV charging to periods when spare capacity is available. It is sound public utility practice to implement pilot projects to explore the optimal

---

3 See the Application, *EV Load Management Pilot Project* report, Attachment C. The letter was subsequently filed by Hydro as separate correspondence on June 2, 2023.
4 See Drive Electric NL's correspondence to the Board regarding *"Newfoundland Power Application for Electric Vehicle Load Management Pilot Project - 2023-06-02,"* dated July 5, 2023, page 6.
5 See the Consumer Advocate's written submission to the Board dated July 13, 2023, page 6.
6 See the Application, *EV Load Management Pilot Project* report, page 4, lines 11 to 18.
7 See the Application, *EV Load Management Pilot Project* report, page 6, lines 8 to 11.
8 See the Application, *EV Load Management Pilot Project* report, page 8, lines 6 to 11.

Newfoundland Power Inc.
55 Kenmount Road • P.O. Box 8910 • St. John's, NL A1B 3P6
PHONE (709) 737-5364 • **FAX** (709) 737-2974 • **lhollett@newfoundlandpower.com**

measures for managing EV load in a jurisdiction, with 10 utilities across Canada already having implemented pilot projects.[9]

Newfoundland Power's proposed EV Load Management Pilot Project is consistent with the pilot projects implemented by other Canadian utilities. The pilot project is designed to collect information on the costs, benefits and challenges of implementing measures to manage EV load. This information is essential to managing the peak demand impacts of EVs. Up to 200 light-duty EV owners will be recruited to participate in the pilot project. Participants will be required to have either vehicle telematics or Level 2 smart chargers that can provide information on their charging behaviours and enable participation in demand response events. Incentives will be used to encourage participation in demand response events that test both passive (i.e. opt-in) and active (i.e. opt-out) load management strategies.[10]

The total budget estimate for the EV Load Management Pilot Project is $1,504,000. This includes labour costs to oversee the pilot project and non-labour costs for advertising and to contract a third-party service provider to deliver the pilot project. If approved, actual costs incurred to complete the pilot project will be recovered through Newfoundland Power's Electrification Cost Deferral Account. Actual costs incurred to complete the pilot project will be managed to ensure all costs recovered from customers are reasonable. For example, while the budget assumes costs will be required to install Level 2 smart chargers for a portion of participants, the Company will seek to minimize up-front costs by prioritizing the recruitment of participants that already have an eligible Level 2 smart charger or vehicle telematics.[11]

The EV Load Management Pilot Project is planned to be completed from the third quarter of 2023 to the second quarter of 2025.[12] The results of the pilot project are intended to inform the next suite of customer demand management programs anticipated to be launched by the utilities in 2026.[13] This timeline is appropriate as it will ensure the optimal measures for managing the peak demand impacts of EVs in Newfoundland and Labrador are identified and implemented prior to the widespread adoption of EVs in response to federal targets.

C. Newfoundland Power's Reply

The Consumer Advocate is the sole party to this proceeding that does not support approval of the Application. The Consumer Advocate's submission outlines three issues to support rejection of the Application. Each of these issues is addressed below.

Issue #1: Sufficiency of Load Research and Rate Design Studies

The Consumer Advocate asserts that Newfoundland Power's ongoing Load Research Study and Rate Design Review are sufficient as the objectives of these studies and the proposed EV Load

9 See the Application, *EV Load Management Pilot Project* report, page 11, lines 11 to 14, and Attachment B.
10 See the Application, *EV Load Management Pilot Project* report, page 14, lines 18 to 23.
11 See the Application, *EV Load Management Pilot Project* report, page 14, lines 4 to 5.
12 See the Application, *EV Load Management Pilot Project* report, page 15, Figure 5.
13 See the Application, *EV Load Management Pilot Project* report, page 1, lines 21 to 24.

Management Pilot Project are very similar. The Consumer Advocate states that the Load Research Study and Rate Design Review should capture information on the impact of EVs and incorporate the results of the pilot projects completed in other Canadian jurisdictions.[14]

Newfoundland Power disagrees that the objectives of the referenced studies are similar to the proposed pilot project. The objective of the Load Research Study is to determine the appropriate allocation of demand costs between customer rate classes. The objective of the Rate Design Review is to evaluate the Company's rate designs in the context of changing marginal costs. Neither of these studies is designed to pilot strategies to manage end uses of electricity, which requires the use of specific technologies and expertise.[15]

While the objectives of these initiatives differ, Newfoundland Power recognizes overall household demand from customers with EVs may be appropriately included as part of the Load Research Study. The Company has committed to consulting with the parties on this matter as part of the ongoing Load Research Study. Nonetheless, the collection of information on how EVs affect overall household demand does not negate the need to conduct the EV Load Management Pilot Project. The pilot project is required to provide in-depth information on EV owners' charging behaviours and the costs and benefits of strategies to shift EV charging to off-peak periods. Information with this level of granularity is outside the objective and scope of the Load Research Study and Rate Design Review.[16]

Additionally, the results of studies completed in other Canadian jurisdictions are not sufficient to assess the costs and benefits of strategies to manage EV load in Newfoundland and Labrador. Each jurisdiction has unique characteristics that can influence the costs and benefits of implementing available strategies. For example, research has shown that charging habits vary among EV owners depending on travel patterns, access to charging infrastructure and personal preferences. Electrical system characteristics, including the timing of peak demand, also vary by jurisdiction, which can influence the costs and benefits of EV load management strategies. Newfoundland Power's proposed EV Load Management Pilot Project will provide jurisdiction-specific information that will enable the Company to optimize future EV load management programs for its customers. This is consistent with the approach taken by other Canadian utilities that have implemented pilot projects to gain jurisdiction-specific information on EV load management.[17]

Newfoundland Power submits that the Load Research Study, Rate Design Review and EV Load Management Pilot Project are substantially different in their objectives and are therefore being pursued as separate initiatives.

---

14 See the Consumer Advocate's written submission to the Board dated July 13, 2023, page 3.
15 See the response to request for information CA-NP-001, part b.
16 See the response to request for information CA-NP-001, part b.
17 See the response to request for information CA-NP-006, part a.

Issue #2: Necessity of the Pilot Project

The Consumer Advocate asserts that the EV Load Management Pilot Project, if proven necessary, should be delayed until closer to 2030. The Consumer Advocate offers four points to support this view: (i) the number of EVs in the province relative to the total number of light-duty vehicles is low and will not be substantial up to 2030; (ii) Dunsky's model shows the amount of peak demand that can be shifted up to 2030 is very modest; (iii) the majority of residential charging occurs via Level 1 chargers that have a lower impact on peak demand; and (iv) EVs purchased after 2030 may differ from those in the province today and the pilot project may therefore yield little information about EV load management in the 2030s.[18]

Newfoundland Power disagrees that the EV Load Management Pilot Project should be delayed.

While EV adoption in Newfoundland and Labrador currently lags behind that of other provinces, it is expected to become more widespread by 2026 as the Federal Government takes steps to meet its zero-emission vehicle sales targets. By executing the EV Load Management Pilot Project commencing in 2023, Newfoundland Power will be in a position to understand how best to manage the peak demand impacts of EVs before they begin to account for a large portion of annual vehicle sales.[19] The province currently has a reasonable population size to conduct a meaningful assessment of EV load management. Delaying the pilot project would ultimately expose Newfoundland Power's customers to risks of higher system costs due to EV adoption.[20]

Additionally, Newfoundland Power does not agree with the characterization of the peak demand savings achievable by 2030 as "very modest." For example, under the moderate growth scenario, Dunsky estimates that approximately 14 MW of load could be managed by 2030. This would be the equivalent of eliminating the peak demand impact of over 2,000 homes on the Island Interconnected System.[21] The peak demand impact of programs to manage EV load would grow substantially over time, with Dunsky modelling peak demand savings of over 100 MW by 2040.[22] The effect of programs to manage EV load by this time would be substantially less if efforts are delayed closer to 2030.[23] The Company would miss an opportunity to influence the behaviours and technologies of thousands of EV owners over this period, such as the potential to incent customers to adopt Level 2 smart chargers capable of load management.[24]

Newfoundland Power does not agree with the Consumer Advocate's assertion that the majority of residential charging occurs via Level 1 chargers. The record states that EVs typically come with a Level 1 charger that plugs into a standard 120-volt household outlet.[25] The record also

---

18 See the Consumer Advocate's written submission to the Board dated July 13, 2023, page 3 to 5.
19 See the Application, *EV Load Management Pilot Project* report, page 3, lines 14 to 16.
20 See the response to request for information CA-NP-010, part c.
21 The average peak demand impact of a single residential customer is estimated at approximately 6 kW.
22 See the response to request for information CA-NP-004, part g, Table 2.
23 See the response to request for information CA-NP-004, parts e and g.
24 See the response to request for information CA-NP-004, part d.
25 See the response to request for information CA-NP-011, part a.

states that data is not available with respect to what types of chargers EV owners have for personal rather than public use.[26] It is therefore not known what percentage of EV owners in the province currently use Level 1 versus Level 2 chargers. However, it is likely that many EV owners would have a Level 2 charger as it provides an average charging time of only 9 hours in comparison to the 50-hour charging time provided by a Level 1 charger.[27] This is consistent with the experience of Drive Electric NL, which indicates that it has sold 116 Level 2 chargers in the last 12 months.[28]

There is also no evidence to suggest that the characteristics of EVs purchased after 2030 would change such that the EV Load Management Pilot Project is irrelevant. The pilot project is intended to inform the next suite of customer demand management programs anticipated to be launched by the utilities in 2026.[29] The utilities routinely review the results of customer programs and market dynamics, and adjust customer programs over time. As such, if the characteristics of EVs change over time so as to impact customer programs, programs would be adapted in response to those changes.

Newfoundland Power submits that the EV Load Management Pilot Project should proceed in 2023 as proposed, and that delaying the pilot project exposes customers to an increased risk of higher system costs.

Issue #3: Usefulness of the Pilot Project

The Consumer Advocate asserts the design of the EV Load Management Pilot Project diminishes its usefulness. The Consumer Advocate questions how the sample can be representative if it consists entirely of owners of Level 2 chargers while the majority of EV owners use Level 1 chargers. The Consumer Advocate states participants should be accepted with whatever charger they are currently using.[30]

As referenced above, the record of this proceeding does not suggest the majority of EV owners use Level 1 chargers. Level 1 chargers are, on their own, not capable of collecting data on participants' charging behaviours and cannot be used for load management.[31] The prevailing technologies used to manage EV load are Level 2 smart chargers and vehicle telematics.[32] These are the technologies included in Newfoundland Power's EV Load Management Pilot Project. It is possible that some participants who enroll in the pilot project and have vehicle telematics will charge via a Level 1 charger. The specific parameters of the sample for the pilot project will be determined in consultation with the third-party service provider selected to administer the pilot project.

---

26 See the response to request for information CA-NP-011, part c.
27 See the response to request for information CA-NP-005, part b, Table 1.
28 See Drive Electric NL's correspondence to the Board regarding *"Newfoundland Power Application for Electric Vehicle Load Management Pilot Project - 2023-06-02,"* dated July 5, 2023, page 4.
29 See the Application, *EV Load Management Pilot Project* report, page 1, lines 23 to 24.
30 See the Consumer Advocate's written submission to the Board dated July 13, 2023, pages 5 to 6.
31 See the response to request for information CA-NP-010, part b.
32 See the Application, *EV Load Management Pilot Project* report, Attachment B.

Newfoundland Power submits that the EV Load Management Pilot Project is designed in manner consistent with sound public utility practice and will provide the information necessary to identify the optimal measures to manage EV load, thereby mitigating potential impacts on peak demand and corresponding system costs.

D. Conclusion

Newfoundland Power's proposed EV Load Management Pilot Project is designed to collect the information necessary to identify the optimal measures for managing the peak demand impacts of EVs in Newfoundland and Labrador. The Company submits it is appropriate to conduct the pilot project at this time as independent forecasts show EV adoption is expected to increase considerably in the coming years, with a substantial impact on peak demand and system costs. The proposed pilot project is designed and timed so as to ensure the necessary information is collected to manage EV load prior to the widespread adoption of EVs.

Submissions were received from Hydro and Drive Electric NL supporting the pilot project and approval of the Application. The Consumer Advocate has recommended rejection of the Application. Newfoundland Power submits that the Consumer Advocate's recommendation does not reflect the information on the record of this proceeding and that rejecting the Application would not be in the interest of the Company's customers. Furthermore, the Consumer Advocate acknowledges in its submission that EV adoption has the potential to benefit electricity customers by generating higher revenue.[33] Newfoundland Power agrees with this viewpoint, but observes that whether the revenue-related benefits of EV adoption outweigh the costs depends on the utilities' ability to manage the peak demand impacts of EVs.

Newfoundland Power submits that the EV Load Management Pilot Project is consistent with sound public utility practice and the delivery of reliable service to the Company's customers at the lowest possible cost. The costs to complete the pilot project are reasonable and prudent in providing service to customers and should be recovered through the Electrification Cost Deferral Account. Accordingly, Newfoundland Power requests the Application be approved as filed.

If you have any questions regarding the enclosed, please contact the undersigned.

Yours truly,

Lindsay Hollett
Senior Legal Counsel and Assistant Corporate Secretary

ec. Shirley Walsh
Newfoundland and Labrador Hydro

Dennis M. Browne, K.C.
Browne Fitzgerald Morgan & Avis

[33] See the Consumer Advocate's written submission to the Board dated July 13, 2023, page 4.

Newfoundland Power Inc.
55 Kenmount Road • P.O. Box 8910 • St. John's, NL A1B 3P6
PHONE (709) 737-5364 • **FAX** (709) 737-2974 • **lhollett@newfoundlandpower.com**